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Advanced Air Mobility: From Concept to Commercial Reality

An Executive Outlook for Airlines and Airports

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Executive Summary

Advanced Air Mobility (AAM) is entering a pivotal phase, moving from conceptual vision to commercial reality. This report provides an **executive outlook for airlines and airports**, focusing on the strategic and operational developments shaping the global AAM landscape.

AAM leverages next-generation electric and hybrid aircraft – particularly **heavy-lift cargo drones and passenger eVTOLs (electric vertical take-off and landing)** – to deliver new mobility services across urban, regional, and remote environments. The sector's growth is fuelled by advances in propulsion, autonomy, and digital air traffic management, as well as the increasing demand for **efficient, cost-effective, and sustainable solutions**.

The **global AAM market,** encompassing both heavy-lift cargo drones and passenger eVTOLs, is projected to grow from $11.4 billion in 2024 to $87.8 billion by 2034. **Heavy-lift cargo drones** are emerging as a transformative segment, enabling rapid, eco-friendly logistics in infrastructure-challenged regions. **Passenger eVTOLs** are nearing commercial readiness, with dozens of models in advanced testing and major airlines placing pre-orders.

As technological advancements and market commitments accelerate, **airlines are increasingly investing in AAM to complement their core services**, expand regional connectivity, and advance sustainability goals. Early partnerships with eVTOL manufacturers show strong potential in the sector's future.

Airports, meanwhile, **are accelerating vertiport development (dedicated infrastructure for VTOL aircraft),** recognising the need to support scalable eVTOL operations and integrate AAM into existing transport networks.

The Middle East (particularly the United Arab Emirates) is moving forward with regulatory initiatives, strategic partnerships, and vertiport infrastructure development. Other regions – including **North America** (primarily the United States), **Asia** (primarily China), and **Europe** – are also making progress, though the pace and focus of development vary.

Looking ahead, **successful AAM adoption will require airlines and airports** to plan proactively, analyse markets, and address challenges early – enabling them to reduce risks, accelerate readiness, and capture long-term value in a rapidly evolving sector. This **report aims to support airlines and airports with the strategic guidance needed to navigate the transition from concept to commercial reality** and to secure a leadership position in the future of AAM.

Strategic Guidance for Airlines and Airports

- Prioritisation of use cases
- Airspace integration management
- Infrastructure upgrade
- Partnerships to unlock long-term value
- Optimal business model and pricing strategy

Quotes

Advanced Air Mobility represents a significant development in aviation, offering faster point-to-point travel for passengers and reliable logistics for cargo. Airlines that establish early partnerships, adjust operational models, and incorporate eVTOLs into scheduling and maintenance processes are likely to benefit from early adoption. Similarly, airports should focus on scalable vertiport design, robust charging infrastructure, and seamless UTM/ATM integration to position themselves as efficient multimodal hubs. Through coordinated efforts, AAM can progress from initial trials to becoming a safe, commercially viable, and routine service.

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1

Introduction to AAM

Advanced Air Mobility (AAM) represents a transformative shift in air transport, leveraging next-generation aircraft – particularly **electric vertical / conventional takeoff and landing (eVTOL/eCTOL) air taxis and heavy-lift cargo drones** – to deliver new mobility services across urban, regional, and remote environments. The vision of AAM is to enable fast, flexible, cost-effective, and sustainable air transportation, complementing existing aviation infrastructure while unlocking new use cases for passengers, cargo, and emergency services.

This growth is underpinned by advances in battery and electric propulsion systems, autonomous flight technologies, and digital air traffic management.

It is also fuelled by increasing demand for decarbonised transport, congestion relief, and operational efficiency, especially in regions with limited ground infrastructure.

As of 2025, **over 1,100 eVTOL aircraft concepts have been developed by more than 450 companies worldwide**[1], with billions of dollars invested since 2019[2]. Airlines and airports are increasingly recognising AAM as a critical component of future mobility strategies – whether through partnerships with eVTOL operators, multimodal connectivity, or vertiport integration. Airlines are exploring fleet diversification, last-mile logistics, and new passenger experiences, while airports are preparing to accommodate air taxi and cargo logistics services via the construction of vertiports (see Figure 1).

Non-exhaustive

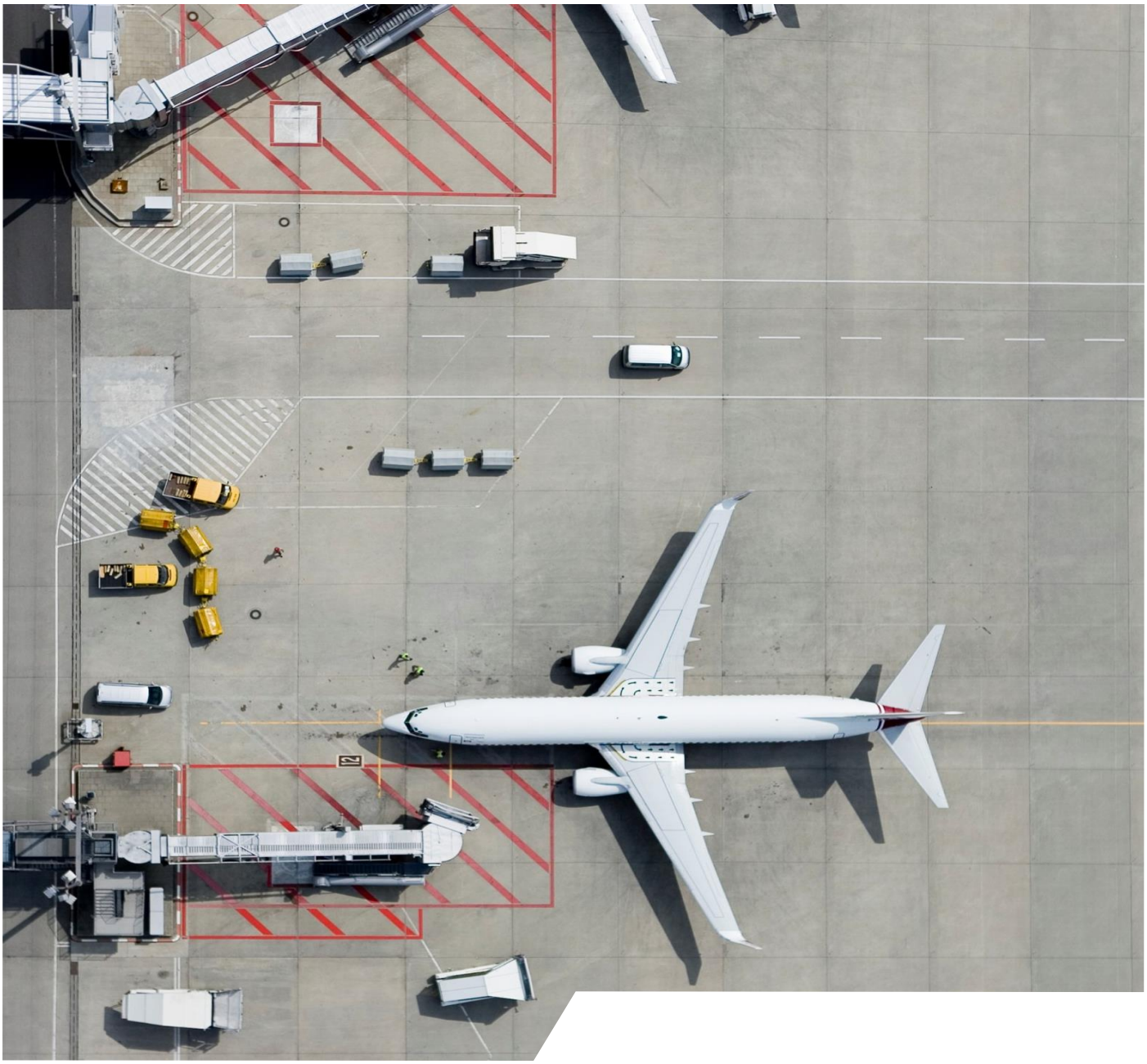
Figure 1. Exemplary List of Global eVTOL Players

Source: Publicly available company information; PwC analysis, 2025, *as OEMs are represented companies that produce fully electric VTOLs

Disclaimer: This map of exemplary stakeholders is based solely on impartial desk research and involves no marketing collaboration with the listed companies.

This report explores the **strategic implications of AAM for airlines and airports**, offering insights into market dynamics, investment trends, operational challenges, and emerging opportunities. It examines the evolution and market potential of both passenger air taxi services and heavy-lift cargo logistics, with a focus on regional developments and infrastructure readiness.

As AAM moves from concept to commercial reality, stakeholders across the aviation ecosystem – including airlines, airports, and manufacturers – face the task of navigating complex regulatory frameworks, adopting to evolving business models, and preparing infrastructure.



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AAM Segments and Market Statistics

The **global AAM market** – including both passenger and cargo drone segments – is estimated to be valued at approximately **$11.4 billion in 2024**, with forecasts projecting a substantial rise to **$87.8 billion by 2034**, driven by a robust compound annual growth rate (CAGR) of **22.7%** over the period, with North America being a leader of the market, accounting for around **36.5%** of the global share. These figures are based on current average estimates and predictive models and may vary with market definitions and analysis, though overall growth expectations remain strong[3].

All market size figures presented in this report are derived from various estimation meta-analyses and reflect anticipated trends based on currently available data and predictive modelling. These estimates may vary depending on market definitions, methodological approaches, and evolving development dynamics; therefore, they should be interpreted as indicative rather than absolute values.

Heavy-Lift Cargo Logistics

As the AAM market expands, **heavy-lift cargo logistics** have emerged as one of its most transformative segments.

This sub-sector is gaining traction for its potential to revolutionise cargo transport, particularly in remote, underserved, or infrastructure-challenged regions. With increasing demand for rapid, flexible, cost-efficient and eco-friendly delivery solutions, **heavy-lift drones are emerging as a critical enabler of next-generation supply chains** – supporting industries ranging from construction and energy to defence.

The evolution of heavy-lift cargo drones reflects this momentum. From early experiments in the 2010s, such as Amazon Prime Air's last-mile delivery concept[4] showcasing initial explorations in consumer goods delivery, the sector has progressed through major milestones, such as the introduction of Boeing's prototype Cargo Air Vehicle in 2018[5]. By the early 2020s, autonomous flights and commercial partnerships emerged, with platforms like Elroy Air's Chaparral[6] and Dronamics' Black Swan entering operational use[7]. The mid-2020s marked a shift to full-scale commercialisation, illustrated by SF Express's cross-sea drone delivery[8] and Dubai-based EANAN's test of its Rikaz drone[9]. This rapid progress is underpinned by substantial investment, with cargo drone companies raising over $2.8 billion between 2019 and 2023 across seed, early, and later-stage funding rounds[10].

Early 2010s:
Experiments and R&D

Initial experimentation with drones showcased potential in lightweight delivery solutions, primarily for consumer goods

2013

Amazon Prime Air last-mile drone delivery concept (introduced in December 2013) showcased early explorations in consumer goods delivery

Mid to Late 2010s:
Trials and Certifications

2017

PAC P-750 converted to AT200 cargo drone for SF Express, designed for 1.5-ton payload deliveries

2018

The Boeing Company unveiled a prototype unmanned Cargo Air Vehicle (CAV)

Early 2020s:
Initial Deployments

2021

Kaman K-MAX Titan, a US uncrewed helicopter, completed autonomous flight

2022

Elroy Air's Chaparral cargo drone (136+ kg payload) is partnered with FedEx

Dronamics' Black Swan (350 kg payload) got the EU LUC via Transport Malta

Royal Mail trials Windracers ULTRA (100 kg payload) for Orkney Islands deliveries

Mid 2020s:
Commercialisation

2024

Cross-sea cargo drone delivery on SF Express FH-98 (455 kg payload, 200+ km range)

EANAN, Dubai-based startup, conducted a test of Rikaz, its heavy-lift cargo drone (up to 200 kg payload)

Funding by Stage for Cargo Drone Companies 2019-2023 [USD Mn]

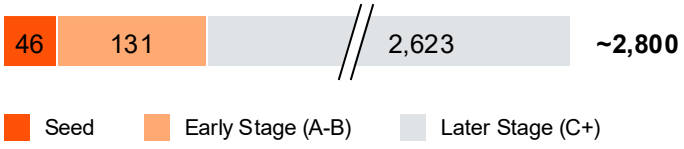


Figure 2. Heavy-Lift Cargo Drones' Evolution: From Concept to Commercial Reality

Source: Publicly available information; Drone Industry Insights; Tracxn; PwC analysis

The competitive landscape is evolving rapidly. While most heavy-lift cargo drones remain in early testing and validation stages, a few have achieved formal certification milestones – such as AutoFlight's CarryAll (Type Certificate by the Civil Aviation Administration of China)[11], Dronamics' Black Swan (the European Union Light UAS Operator Certificate (LUC))[12,13], and Xwing's Military Flight Release[14]. Technical capabilities vary widely, with fuel-powered fixed-wing and hybrid VTOL aircraft offering superior endurance compared to fully electric VTOLs. Companies are also expanding globally, including into Asia, the Middle East, Europe, where demand for on-demand delivery is rising. Strategic partnerships with logistics providers, research institutions, and military stakeholders are helping shape tailored drone solutions and accelerate deployment readiness.

Reflecting this growing interest, the global **heavy-lift cargo drone market** was valued at approximately **$1.2 billion in 2024** and is projected to reach **$6.3 billion by 2034**, representing a CAGR of around **18.5%** over the decade. These estimates are indicative and subject to variation based on market definitions and industry trends, but overall growth potential remains substantial.[15]

Geographically, **China and the United States have emerged as leading centres of gravity in heavy-lift cargo drone development**, each with distinct strategic priorities.

- China is advancing rapidly through platforms like CH-YH1000[16], TP1000[17], W5000[18], and V2000CG[19], supported by logistics companies such as SF Express, JD Logistics, and Meituan. The country's

integration of AI and 5G technologies is enhancing routing precision and connectivity, particularly within its "low-altitude economy" aimed at improving rural logistics.

- The United States' market is shaped by both startups and traditional logistics firms, with drones like Cento and Chaparral (Elroy Air), Pelican Cargo (Pyka), and Rhaegal (Sabrewing) being developed to support time-sensitive, same-day deliveries. Companies such as FedEx[20], UPS[21], Amazon, DHL[22], and Ameriflight[23] are actively exploring drones' integration, while the US Federal Aviation Administration pilot programmes and evolving certification frameworks are gradually enabling broader deployment.

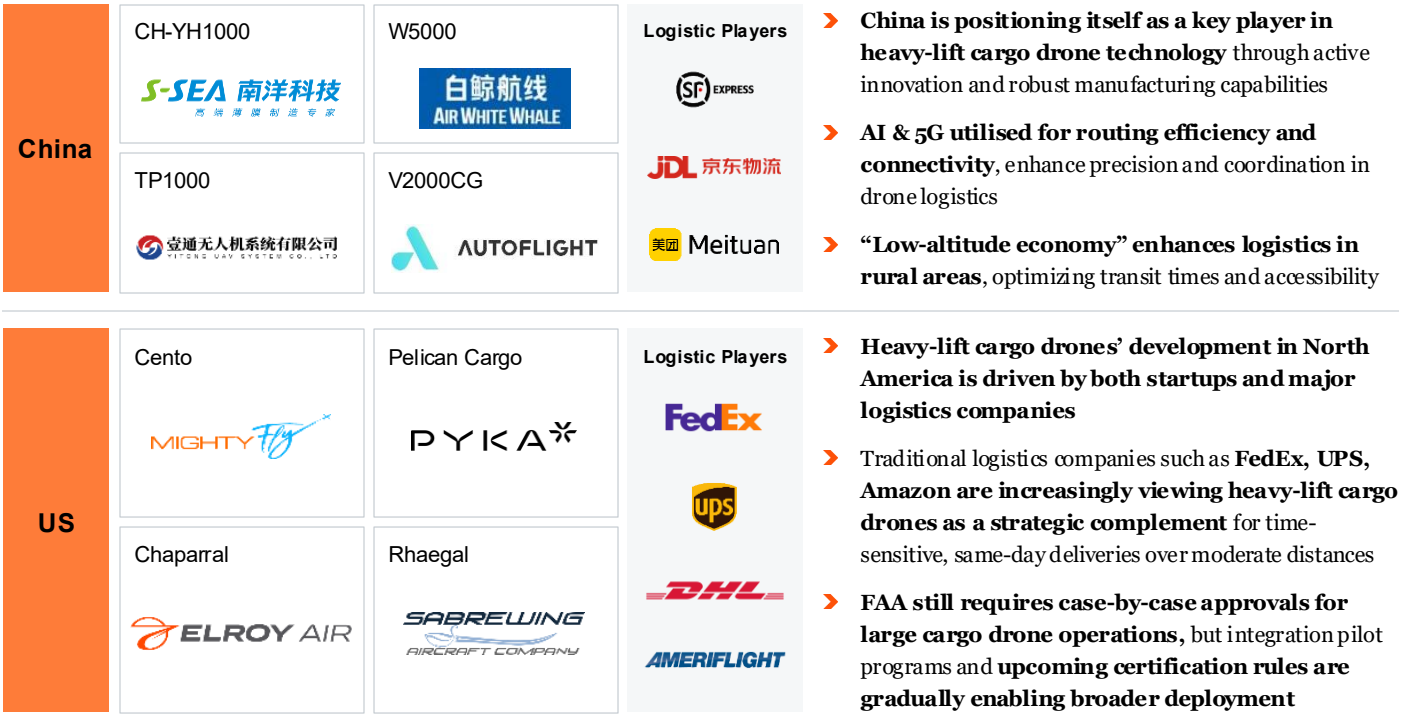


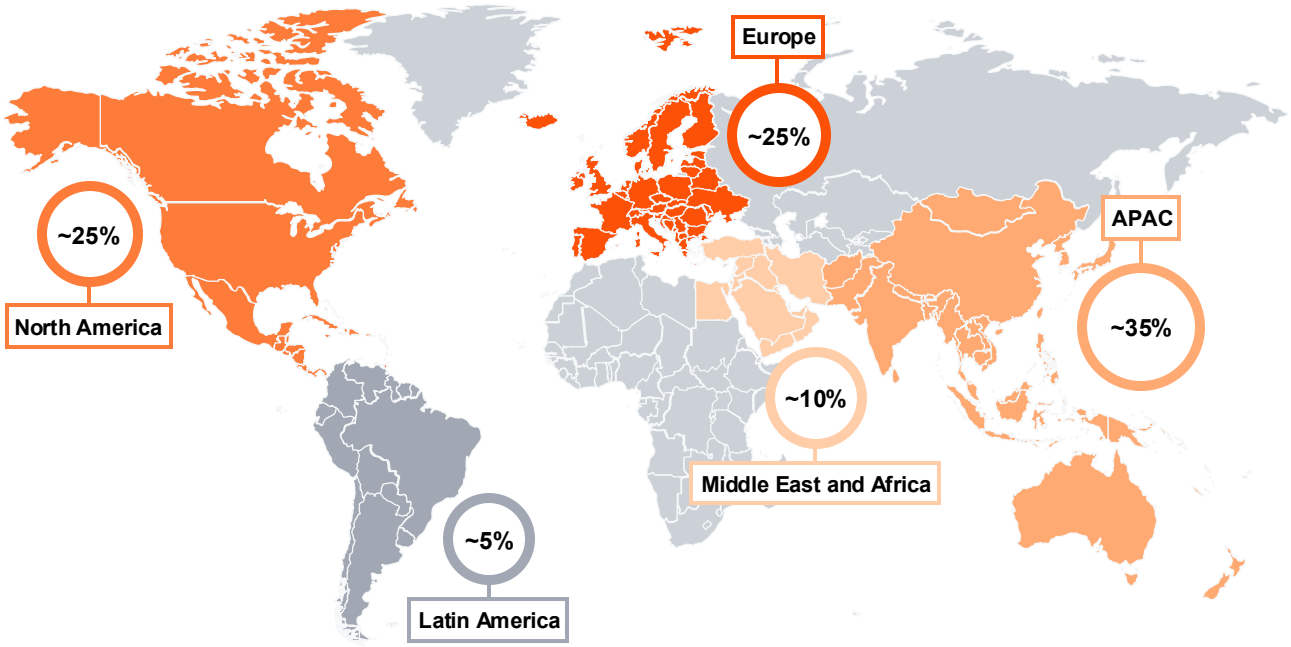
Figure 3. Heavy-Lift Cargo Drones' Centres of Gravity

Source: Publicly available company information; PwC analysis, 2025

Disclaimer: This map of exemplary stakeholders is based solely on impartial desk research and involves no marketing collaboration with the listed companies.

This geographic divergence underscores the global momentum behind heavy-lift cargo drones. **China is leveraging manufacturing scale and smart infrastructure to optimise rural logistics.**

Meanwhile, **the United States is focusing on integrating drones into existing supply chains for rapid, mid-range delivery**. Together, these efforts are accelerating the commercial maturity of the sector and shaping its future trajectory.



Unit sales market revenues [USD Bn]

2026	2035
ca. 1,500	over 3,000

The reported figures represent signed letters of intent or partnership agreements rather than actual purchases. This approach is intended to illustrate market potential, not confirmed transactions, as legal operation of the solution is currently not permitted.

Figure 4. Top-Down Global Market Opportunity for Heavy-Lift Cargo Drones

Source: Mordor Intelligence; PwC analysis

Passenger eVTOLs

Building on the momentum of AAM, eVTOL aircraft are rapidly emerging as a cornerstone of next-generation air transportation, alongside heavy-lift cargo logistics. Positioned to transform passenger mobility, eVTOLs are attracting global attention for their potential to deliver faster, quieter, cleaner, and more cost-effective urban and regional connectivity. As cities increasingly seek sustainable alternatives to road congestion and emissions-heavy aviation, eVTOLs are gaining traction across a range of applications – from air taxi services and emergency response to intercity travel.

Over the past decade, the passenger eVTOL sector has rapidly evolved from experimental prototypes to near-commercial readiness. What began in the 2010s with pioneering flights – such as Volocopter's manned electric VTOL in 2011[25], EHang's debut of the 184 model in 2016[16], and Dubai's public air taxi demonstration with Volocopter in 2017[27] – has since matured into a global race toward certification and deployment. By the late 2010s, companies such as Airbus and Boeing introduced full-scale demonstrators, including Airbus' Vahana[28], CityAirbus NextGen[29], and Wisk's Cora[30].

The 2020s have marked a decisive shift from concept validation to operational testing. In November 2023, Joby Aviation conducted an S4 eVTOL flight in New York City[31]. In June 2024, Archer Aviation's Midnight aircraft completed the transition flight in California[32], while other developers continued testing in various regions around the globe. These milestones reflect not just technological maturity but also growing regulatory and operational engagement and public sector interest.

Regulatory frameworks have also begun to take shape. In 2023, China's Civil Aviation Administration issued an eVTOL Type Certificate to EHang[33]. Meanwhile, Western regulators are also making progress: the US Federal Aviation Administration has published its Roadmap for Advanced Air Mobility Aircraft Type Certification[34], and the European Union Aviation Safety Agency has introduced its Special Condition for VTOL and associated Means of Compliance[35].

Airline partnerships and infrastructure development have further accelerated momentum.

Early 2010s:

Conception and Initial Flights

The evolution of eVTOL aircraft started in the early 2010s, driven by efforts to apply electric propulsion to vertical flight – with early concepts like NASA's Puffin VTOL in 2009

2011

Germany's e-volo (now Volocopter) carried out the crewed electric VTOL flight with its VC1 multicopter, demonstrating the feasibility of electric vertical flight

Mid-2010s:

Prototype Debuts and Demos

2016

Volocopter conducted the crewed flight of its two-seat eVTOL prototype, the VC200, in Germany

Chinese company EHang debuted the EHang 184

2016-2019

Airbus presented Vahana and CityAirbus NextGen, while Boeing introduced Wisk Cora

2017

Dubai's Roads and Transport Authority (RTA), in partnership with Volocopter, conducted the public air taxi demo flight in downtown Dubai

Early 2020s:

Investment Surge and Airline Partnerships

2020-2021

Joby Aviation received a $590 million investment led by Toyota, and in August 2021 Joby went public as a US eVTOL firm

2020-2022

Airlines invest in AAM, e.g., Japan Airlines partners with Volocopter, American Airlines and Virgin Atlantic with Vertical Aerospace, United Airlines and Archer Aviation, and Delta Aviation and Joby Avition

2021

Archer Aviation and Vertical Aerospace followed suit with SPAC-driven IPOs

Mid-2020s:

Certification, Infrastructure, and Setbacks

2023

China's CAAC awarded a Type Certificate for a passenger-grade eVTOL – the autonomous two-seat EHang EH216-S air taxi

The UAE's CAGA introduced CAR-HVD vertiport regulations

2024-2025

Joby Aviation conducted the FAA testing under Type Inspection Authorization (TIA), while Archer Aviation began test flights in Abu Dhabi

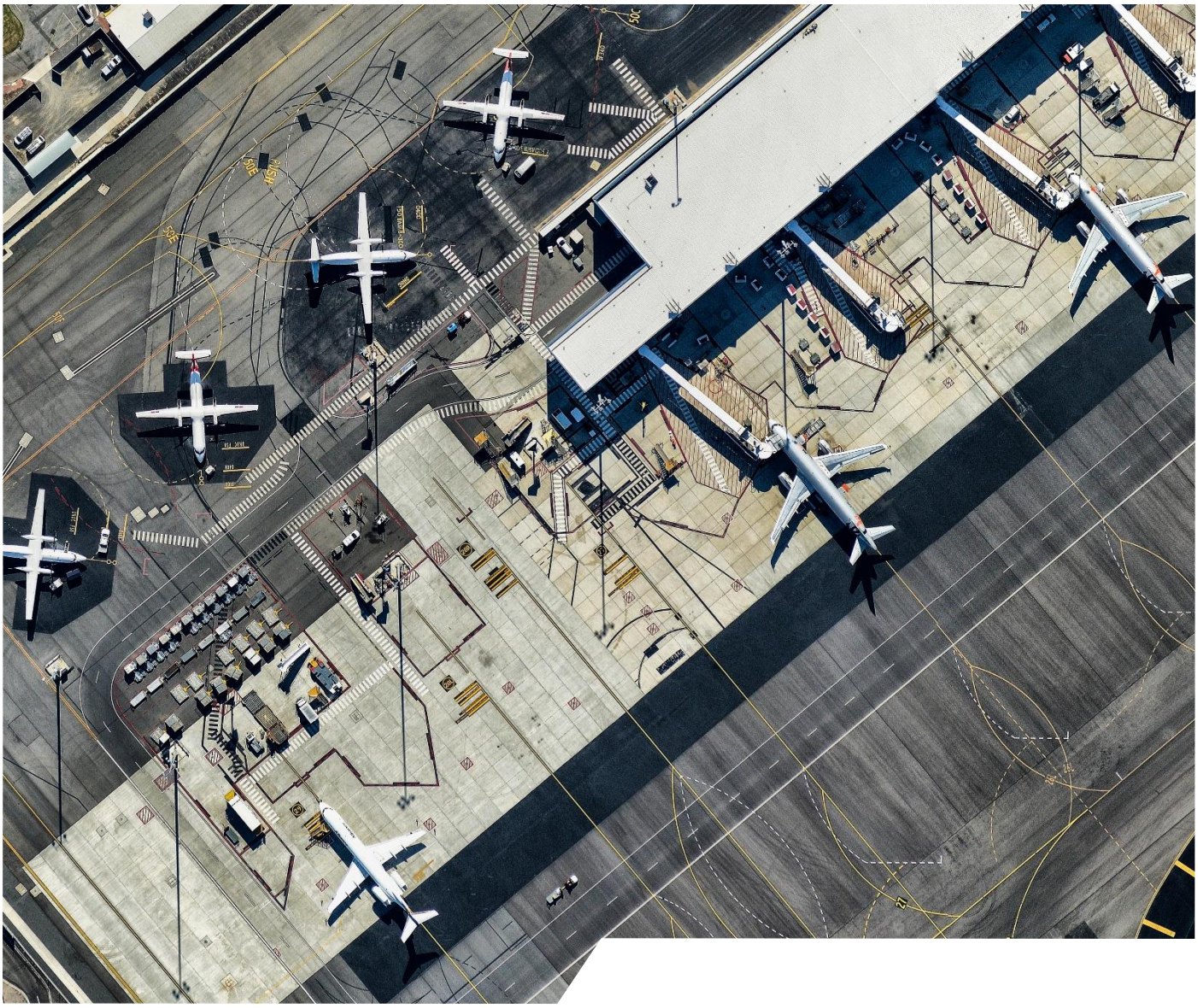
Vertiport projects to be launched in Dubai, Milan, and Los Angeles

Figure 5. Passenger eVTOL Evolution: From Concept to Certification and Service Launch

Source: Publicly available information; PwC analysis

Since 2020, leading carriers such as Japan Airlines[36], American Airlines[37], United Airlines[38], Delta[39], and Virgin Atlantic[40] have announced investments and pre-orders, indicating high potential for AAM integration. In parallel, vertiport projects are underway in major hubs – from Dubai International Airport[41] and Milan Malpensa[42] to Los Angeles[43] – supported by dedicated regulatory frameworks like the UAE's CAR-HVD[44]. These developments highlight the **growing role of airlines and airports in shaping the future of advanced air mobility**.

Reflecting this accelerating momentum, the global passenger eVTOL aircraft market was valued at approximately **$0.6 billion in 2024** and is **projected to reach $19.2 billion by 2034**, representing **a CAGR of 40.9% over the decade**[45]. Given the current market dynamics and competition, it remains to be seen which regions will emerge as industry leaders, with key contenders including Asia, primarily China, North America, the Middle East, and Europe. Their success will depend not only on technological advancement but also on the strategic and business preparedness surrounding AAM concepts.



3

Flying into the Future – Air Taxis

Passenger eVTOLs are nearing commercial reality, with dozens of air taxi models in advanced flight testing around the world. Developers are progressing through certification programs, targeting inaugural air taxi services in major cities such as Paris, Dubai, Los Angeles, Osaka and more within the next few years.

As of March 2025, the number of eVTOL aircraft concepts has exceeded **1,100 concepts** from more than **450 designers**[46], with billions of dollars have been poured into eVTOL companies[47].

eVTOL developers across North America, Asia, Europe, and South America are translating investment into tangible progress. Companies such as Joby Aviation, Archer Aviation, EHang, and Eve Air Mobility are advancing certification, expanding internationally, and preparing for commercial operations. Table A.1 in the Appendix outlines key regional developments and company milestones in the global AAM sector.

A growing number of **pre-order commitments** further reflect market interest in eVTOL air taxi, even ahead of certification.

These early reservations – often placed years before aircraft enter service – reflect growing confidence in the viability of AAM and its potential to transform urban and regional transport networks. They also serve as strategic indicators of demand, helping manufacturers secure funding, validate business models, and align production capacity with anticipated market needs.

This is further evidenced by pre-order activity observed across key markets. North American companies such as Joby Aviation and Archer Aviation have recorded hundreds of orders. In Europe, Vertical Aerospace has approximately 1,500 orders[48] and Volocopter over 500[49]. In Asia, orders have been placed with EHang, SkyDrive, and AutoFlight, while in South America, Eve Air Mobility has around 2,800 tentative orders[50]. Table A.2 in the Appendix summarises these volumes and customer commitments, highlighting the scale and diversity of early interest in eVTOL aircraft.

Building on this foundation, **airlines and airports are now stepping in to shape the next phase of AAM deployment:** airlines are procuring eVTOLs to expand their future service offerings, while airports are demonstrating strong interest in vertiport development, actively engaging in planning and investment to support future operations.

4

Airlines Investing in Air Taxis

Over the past few years, especially since 2020, **airlines have been increasingly investing in eVTOL aircraft and the broader AAM ecosystem development** since they see it as a natural extension of their core service: more operationally efficient at short distances, cost-effective in comparison to helicopters or small jets, and sustainable. These investments are driven by a mix of strategic opportunity, customer experience enhancement, and long-term sustainability goals. In addition to passenger services, airlines are recognising the value of heavy-lift cargo drones to expand logistics capabilities[51].

Considering key reasoning aspects, the following factors should be considered:

Operational efficiency

In terms of operational flexibility, eVTOLs require minimal ground infrastructure, no long runways or large terminals, allowing for faster turnaround times. Many eVTOLs are being designed with autonomous or semi-autonomous capabilities, reducing pilot workload and enabling more frequent, on-demand operations.

eVTOL air taxis also offer a transformative way to connect city centres with major airports in minutes. For example, Delta Air Lines has partnered with Joby Aviation to offer 10-minute hops to airports like JFK and LAX[52].

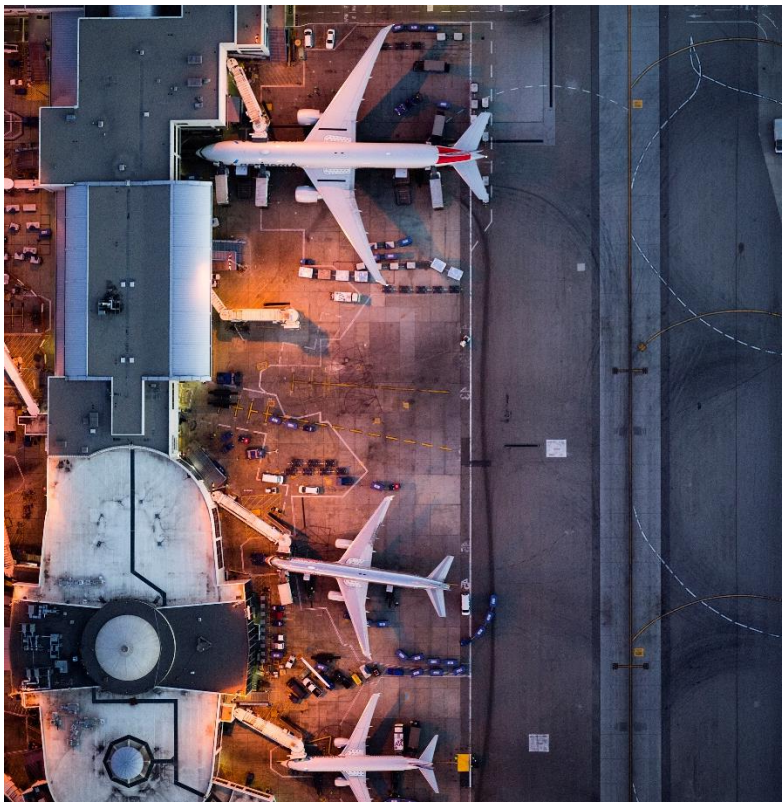
Cost effectiveness

eVTOLs have lower operating costs compared to helicopters or small jets, thanks to simpler electric propulsion systems and reduced maintenance needs. eVTOLs enable high-frequency service between smaller cities, suburbs, and major hubs. This opens new regional connectivity options that were previously unviable, allowing airlines to expand their network reach.

Sustainability

eVTOLs produce zero operational emissions, making them a beneficial tool in helping airlines meet their carbon reduction targets, especially for short-haul travel. As the aviation industry intensifies its decarbonisation efforts, eVTOLs offer more sustainable alternative to traditional ground transfers and regional flights.

The examples listed on the next page showcase airline commitments in the eVTOL space, including partnership details, planned test trials, and available data on pre-ordered aircraft from airlines.



Examples of worldwide airlines with their interest in VTOL operations deployment

Airline	eVTOL Partner(s)	Commitment (Investment/Orders)
American Airlines	Vertical Aerospace (UK)	In 2021, American Airlines invested $25 million in Vertical Aerospace and placed a conditional order for 250 VA-X4 eVTOLs, with options for 100 more[53]. In July 2022, American Airlines made a pre-delivery payment for 50 VA-X4 aircraft, confirming delivery slots[54].
ANA (Japan)	Joby Aviation (US)	ANA Holdings and Joby Aviation announced an expanded partnership in August 2025, including plans to form a joint venture to deploy 100+ Joby S4 eVTOL aircraft across Japan. Public demo flights of ANA-branded Joby aircraft were scheduled for the autumn 2025 at Expo 2025 Osaka, showcasing vertical take-off, wing-borne flight and landing capabilities[55].
Delta Air Lines	Joby Aviation (US)	Delta Air Lines and Joby Aviation formed a partnership in October 2022 to offer home-to-airport eVTOL services in New York and Los Angeles. Delta made an upfront equity investment of $60 million, with the potential to increase to $200 million as milestones are met[56]. This partnership is for five years post-commercial launch, with potential for extension[57].
Ethiopian Airlines	Archer Aviation (US)	In March 2025, Ethiopian Airlines signed an agreement with Archer Aviation to deploy an initial fleet of Midnight eVTOLs under Archer's "Launch Edition" program, valued at up to $30 million. Ethiopian will be Archer's launch customer in Africa, aiming to build an air taxi network in Ethiopia. Archer will provide pilots, technicians, engineers, and software infrastructure to support the initial deployment[58].
GOL Airlines	Vertical Aerospace (UK) with Avolon (Ireland)	In September 2021, GOL Airlines committed to purchase up to 250 VA-X4 eVTOLs through a partnership with Avolon[59].
Japan Airlines (JAL)	Volocopter (Germany)	In September 2020, JAL and Volocopter signed a cooperation agreement to develop and launch air taxi services in Japan, aiming for commercial operations within three years. The partnership focuses on urban air mobility, using Volocopter's VoloCity eVTOL for passenger and cargo transport[60].
Kenya Airways	Eve Air Mobility (Brazil)	In June 2022, Kenya Airways' subsidiary Fahari Aviation signed a Letter of Intent (LoI) with Eve Air Mobility (an Embraer company) for up to 40 eVTOL aircraft. Deliveries are expected to begin in 2026[61].
United Airlines	Archer Aviation (US)	In 2022, Archer received $10 million pre-delivery payment from United Airlines for 100 eVTOL aircraft[62].
	Eve Air Mobility (Brazil)	The airline has invested $15 million in Eve Air Mobility, alongside a conditional purchase agreement for the vehicle. The purchase agreement covers a total of 200 of the four-seat electric aircraft (2022)[63].
Virgin Atlantic	Joby Aviation (US)	In 2025, Virgin Atlantic formed a new partnership with Joby Aviation to launch electric air taxi services in the UK[64].
	Vertical Aerospace (UK)	In 2021, Virgin Atlantic announced a partnership with Vertical Aerospace to explore a UK air taxi network using the VA-X4 eVTOL. The agreement included an option for up to 150 aircraft and plans to connect cities like London Heathrow, Manchester, and Gatwick[65].

Airlines view eVTOLs and AAM not just as a technological novelty, rather as a strategic evolution of their business. **By investing early, airlines are positioning themselves to lead in a rapidly emerging landscape, ensuring they remain competitive as new transportation approaches develop in such a fast-moving way**[66].

5

Infrastructure – Airports and Vertiports

As the air taxi industry approaches commercial launch, **airports and urban infrastructure operators are actively investing in vertiports** – specialised facilities designed to support eVTOL aircraft. These investments are critical to enabling scalable, safe, and efficient operations for eVTOL fleets.

Since the global AAM market presents substantial economic opportunities and the number of vertiports development is increasing significantly. Globally, o**ver 1,500 vertiports are planned by 2025, with significant activity concentrated in Europe and Asia-Pacific**[67,68] (some of the exemplary initiatives in different geographies are listed below).

Exemplary case studies of vertiport development projects

The United States

Archer Aviation, in partnership with Los Angeles World Airports (LAWA), is developing a network of vertiports across Greater Los Angeles, including LAX, Santa Monica, Long Beach, and Van Nuys, to support its Midnight eVTOL aircraft.

The company planned to begin construction in 2024, with commercial operations targeted for 2026, ahead of major global events like the 2028 Summer Olympics. This initiative aims to reduce one-to-two-hour drives with 10-20-minute electric flights, offering a better alternative to traditional ground transportation[69,70].

The UAE (Middle East)

Skyports Infrastructure, Transport Authority (RTA), and Joby Aviation are collaborating to launch air taxi services in Q1 2026[71]. Four initial vertiports are planned: DXB, Palm Jumeirah, Dubai Downtown, and Dubai Marina[72].

Dubai International Vertiport (DXV) is under construction near Dubai International Airport (DXB). The three-storey vertiport building will cover an area of approximately 3,100 square metres. The facility will have two landing areas, designed to support both eVTOL and conventional helicopter operations. The facility will support 10 eVTOL landings per hour and serve up to 170,000 passengers annually[73].

The UAE has also introduced dedicated vertiport regulations (CAR-HVD), establishing a framework for AAM operations.[4].

Italy (Europe)

In 2024, Skyports Infrastructure, SEA Milan, and 2i Aeroporti cooperated to launch VEGA (Vertical Gateway), a joint venture aimed at accelerating the development of AAM in Milan and the wider Lombardy region. VEGA will focus on deploying a network of vertiports.

VEGA's initial goal is to establish a route between Malpensa Airport and central Milan, with future expansion planned across Lombardy and other Italian regions[75].

In areas already well served by existing transport networks, **vertiports offer a comparatively adaptable, scalable, and cost-effective infrastructure solution** that can help ease congestion and improve overall system efficiency. When considering diverse locations such as city centres, suburban retail hubs, rural communities, or small airfields, **vertiports have the potential to enhance local connectivity, accelerate the shift to electric mobility, and stimulate regional economic development**[76].

As vertiports slowly transition from conceptual designs to commercial deployment, there is a range of key challenges they may face, e.g., energy demand.

These facilities are expected to require substantial electrical capacity, often at megawatt-scale levels, comparable to the energy needs of small towns[77].

This is one of several factors to be considered, which also underscores the growing need for coordinated collaboration among industry stakeholders and regulatory bodies at both local and international levels. By fostering strategic partnerships, the sector can effectively address shared challenges such as infrastructure readiness to accelerate the deployment of vertiport networks and enable safe, efficient, and scalable operations for passenger air taxis and heavy-lift cargo drones within the evolving AAM landscape.

Figure 6. Examples of worldwide airlines with their interest in VTOL operations deployment and airport operators with their interested in vertiport development projects

Source: Publicly available company information; PwC analysis

6

United Arab Emirates – a Case of Early AAM Investments

The United Arab Emirates (UAE) is emerging as a global frontrunner in the deployment of infrastructure for AAM.

In 2025, the UAE launched an initiative to map air corridors and develop regulatory frameworks for piloted and autonomous air taxis and cargo drones. Led by the General Civil Aviation Authority in collaboration with the Advanced Technology Research Council entities – Technology Innovation Institute and ASPIRE – the initiative aims to connect major airports and key destinations with new possibilities for passenger and cargo transport, relieving pressure on existing transport systems and enhancing national connectivity[78].

Present VTOL players in the UAE

A growing number of international companies have strategically committed to establishing operations within the UAE's Advanced Air Mobility ecosystem.

In 2023, Archer Aviation, in partnership with the Abu Dhabi Investment Office and Mubadala Capital, announced plans to establish an engineering Centre of Excellence, collaborate with local manufacturing firms and Maintenance, Repair, and Overhaul (MRO) providers, and launch an all-electric air taxi service in the UAE, with commercial operations targeted for 2026[79].

ANRA Technologies and Future Flight Global are developing the digital infrastructure for AAM operations, enabling integration with existing airspace systems and real-time traffic management. This collaboration focuses on building the systems needed to support and scale electric and sustainable aircraft (including eVTOL air taxis, powered lift aircraft, delivery drones, and regional aircraft) and offering more connected mobility solutions[80].

In the UAE, the AAM landscape also includes global players such as Joby Aviation[81], Beta Technologies[82], Eve Air Mobility[83], contributing technical and operational capabilities.

VTOL infrastructure development in the UAE

In parallel, ground infrastructure is being systematically developed to support AAM operations, with vertiports serving as a foundational element. The collaboration between Skyports Infrastructure and VTOL manufacturers continues to expand.

For example, Skyports Infrastructure, together with LODD, a local specialist in AI-powered drone technology and autonomous heavy cargo logistics, has unveiled plans for vertiport development across three strategically selected sites in Abu Dhabi[84].

Another partnership brings together the support of RAKTA, Skyports' expertise in vertiport infrastructure, and Joby's electric VTOL technology to design, develop and operate the air taxi service in the Emirate of Ras Al Khaimah ("RAK") by 2027[85].

Regulatory aspects to enable AAM operations in the UAE

A critical dimension of the AAM ecosystem is also the development of regulatory frameworks, which are being actively shaped to enable safe and scalable operations.

In 2025, the General Civil Aviation Authority introduced the regulatory framework for hybrid operations, allowing eVTOL aircraft and conventional helicopters to operate interchangeably within shared infrastructure[86].

The DXV vertiport, situated near Dubai International Airport, has obtained design approval under the newly introduced UAE Vertiport Regulations[87].

This is part of a wider initiative to establish an air taxi network in coordination with Dubai's Roads and Transport Authority and Joby Aviation. The approval guarantees adherence to the safety and operational criteria outlined in the GCAA's CAR-HVD Part III framework, underscoring the UAE's dedication to aviation innovation and global leadership in safety standards.

Through coordinated efforts in regulation, strategic planning, and technological innovation, the UAE is working to establish the foundations for safe and scalable air taxi and cargo drone operations.

7

Strategic Guidance for AAM Stakeholders

The rise of AAM is prompting airlines and airports to reassess their strategic priorities as the industry moves closer to commercial deployment. With eVTOL services and vertiport infrastructure gaining traction, they are increasingly seeking specialised consulting support to navigate regulatory, operational, and commercial complexities.

For **airlines**, AAM presents a strategic opportunity to extend core services through more efficient, cost-effective, and sustainable short-distance operations in comparison to helicopters or small jets. At the same time, airlines are actively evaluating how to integrate AAM into their networks while navigating complex certification pathways and evolving safety standards.

For **airports**, the integration of AAM demands forward-looking infrastructure planning, including readiness for vertiports and charging stations, which are critical enablers of scalable, safe, and efficient operations for eVTOL fleets. There is also a need for coordinated collaboration with AAM stakeholders to accelerate deployment and ensure seamless integration into airports' operations.

A key enabler of this transformation is the integration of **Unmanned Traffic Management (UTM) into existing Air Traffic Management (ATM) systems**. This is essential for the safe and efficient coexistence of manned and unmanned aircraft in shared airspace.

At the same time, raising public awareness and building societal acceptance are becoming critical, as not all communities are prepared for the presence of flying taxis or autonomous cargo aircraft in their local airspace and transportation ecosystems.

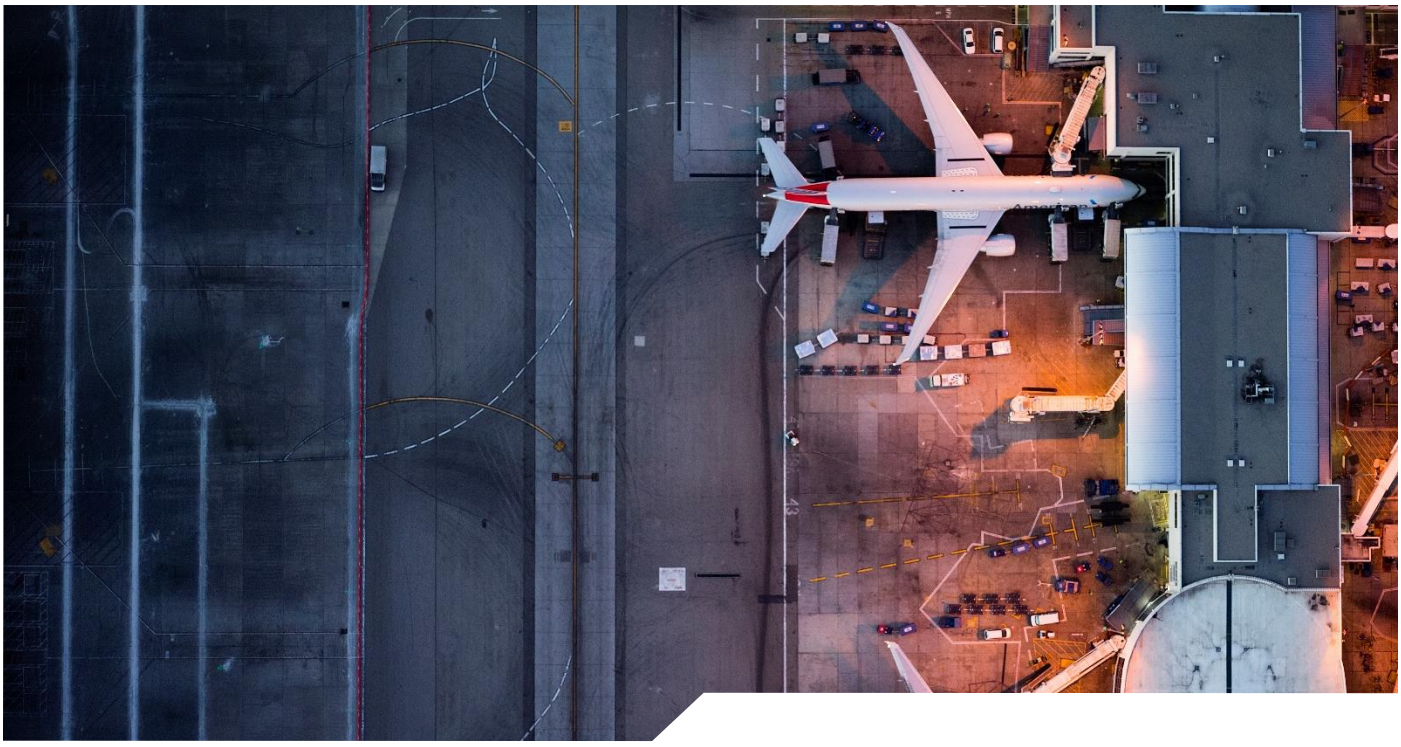
To move forward, airlines and airports must address several critical questions:

- **Which use cases should be prioritised?** Should we focus on passenger transfers, regional connectivity, or cargo logistics?
- **How will airspace integration be managed?** What adaptations are needed to align with UTM frameworks and ensure safe coexistence of manned and unmanned aircraft?
- **What infrastructure upgrades are required to support AAM operations?**
- **What partnerships will unlock long-term value?** How can we collaborate with AAM stakeholders to enable scalable, commercially viable services?
- **What is the optimal business model and pricing strategy?** How can services be positioned to ensure commercial viability?

To support these decisions, PwC Drone Powered Solutions – Global Centre of Excellence in Drone and Geospatial Technologies offers:

- Scenario modelling to evaluate strategic options;
- Market analysis and sizing to identify growth opportunities;
- Business model and pricing strategy development aligned with target segments and use cases;
- Go-to-market planning tailored to regulatory and operational realities.

Our approach is designed to help airlines and airports de-risk decisions, accelerate readiness, and capture long-term value in the evolving AAM ecosystem.



8

Closing Remarks

About PwC Drone Powered Solutions

PwC Drone Powered Solutions – Global Centre of Excellence in Drone and Geospatial Technologies is the pioneering consulting group dedicated exclusively to implementing drone and geospatial technologies for commercial, international development, as well as security, defence and public safety applications.

Since 2015 we have delivered more than 150 projects on 6 continents gathering massive amounts of experience, building unique methodologies and technology solutions.

Being well recognised as global leaders in the drone and geospatial industries, our team ensures:

- Strong experience in identifying and assessing disruptive and transformative growth areas, including what is needed to succeed
- Fresh perspective on drone and AAM market with our unique understanding of market needs, drivers and enablers, as well as view on potentials and barriers
- Global scale of presence and scope of activity to give strategic guidance in drone and AAM market with tailored business strategies

Areas of expertise

Regulations & Strategies
UTM / U-Space
Drone Delivery
Air Taxis
Mapping & Inspections
C-UAS & Defence, Security and Public Safety
ESG & Drones for Good
Satellites & Space

Client profiles

National and Local Governments
Public Entities
CAA, ANSP, Airlines and Airports
Large Enterprises
Private Sector Companies
Defence and Law Enforcement
Development Institutions
NGOs

9

Appendix

Table A1. Exemplary eVTOL Players and Regional Achievements

Region	Company	Achievements
North America	Archer Aviation (US)	• Archer Aviation plans to join the US Federal Aviation Authority's eVTOL Integration Pilot Program announced in September, aiming for type certification by 2026–2027 and scaling Midnight operations in 2028 as the official air taxi provider for the Los Angeles 2028 Olympics[88]. • Archer Aviation is also pursuing international expansion: in July 2025, its Midnight eVTOL aircraft completed the test flight at Al Bateen Executive Airport in Abu Dhabi[89]. • Archer Aviation has raised around $1.9 billion from its strategic partners, notably Unites Airlines, Stellantis[90], and BlackRock ($300 million)[91]. • In October 2025, Archer Aviation acquired around 300 advanced air mobility patent assets for €18 million from the defunct Lilium[92].
	Beta Technologies (US)	• In April 2024, Beta Technologies completed a crewed full-transition flight of its Alia-250 eVTOL aircraft[93]. • In late 2024, Beta's CX300 eCTOL aircraft received special airworthiness certification from the US Federal Aviation Authority[94], followed in July 2025 by the US Federal Aviation Authority-certified electric propeller via partner Hartzell[95] – marking progress toward full aircraft certification. • Beta Technologies is funded by institutional investors, raising $1.15 billion[96], including such backers as Fidelity ($368 million)[97], Qatar Investment Authority (QIA) ($318 million)[98], and GE Aerospace ($300 million)[99]. In October 2025, it filed for an initial public offering (IPO), seeking to raise up to $825 million[100].
	Joby Aviation (US)	• Joby Aviation is advancing through the fourth of five US Federal Aviation Authority's certification process. The company has over 40,000 miles of flight testing across its fleet[101], with nearly 600 flights in 2025 alone[102]. • In June 2025, Joby completed piloted eVTOL flights in Dubai – witnessed by local authorities – as part of its commercial readiness efforts, with vertiport construction underway at Dubai International Airport and passenger service targeted for 2026[103]. Initial US operations are expected in 2026 (targeting cities like Los Angeles and New York) once the US Federal Aviation Authority's type certification is achieved[104]. • To support certification and commercial production, Joby has secured around $1.6 billion investments since 2018[105] with Toyota being its biggest investor – $894 million of total investments[106,107].
	Wisk Aero (US)	• Wisk has received $450 million[108] in funding from Boeing to develop a pilotless, all-electric, 6th generation eVTOL aircraft designed for four-passengers[109]. • In November 2024, the US Federal Aviation Authority issued a Stage 2 G-1 issue paper – needed for certification of Wisk's aircraft[110]. • Wisk Aero has conducted over 1,750 test flights[111]. • Wisk's target launch is the end of the 2020s – early 2030s, starting in greater Houston, where it recently partnered with the city of Sugar Land, Texas, to begin planning how to commercialise an air taxi service[112].
Europe	Airbus (France)	• The CityAirbus NextGen was an all-electric, four-seat eVTOL prototype, designed as a demonstrator for urban air mobility[113]. • In November 2024, Airbus conducted flight testing of a full-scale prototype of its CityAirbus NextGen eVTOL aircraft. It achieved its initial flight in November 2024 in Germany, validating key systems[114]. • The program has been paused by Airbus since January 2025[115].
	Vertical Aerospace (UK)	• Vertical Aerospace, a developer of the VX4 (a 4-passenger piloted eVTOL with tilt-rotor design), went public via SPAC in 2021[116] and secured pre-order agreements for up to 1,350 aircraft from American Airlines, Avolon, Virgin Atlantic, Iberojet, Bristow Group and Marubeni[117]. • In May 2025, Vertical Aerospace's VX4 prototype completed a piloted wingborne flight in open airspace[118], followed by the airport-to-airport piloted eVTOL flight during a military airshow in July[119].

Region	Company	Achievements
Europe	Volocopter (Germany)	• Volocopter obtained the European Union Aviation Safety Agency's Design Organisation Approval (2019)[120] and Production Organisation Approval (2021)[121] for eVTOLs and works with European Union Aviation Safety Agency to certify its 2-seat VoloCity model[122]. • By the end of 2022, Volocopter had raised $600 million in launch funding[123], including a $175 million investment from NEOM[124]. • In March 2025, Volocopter was acquired by China-based Wanfeng Auto Holding Group and its Austrian subsidiary, Diamond Aircraft[125].
Asia	AutoFlight (China & Germany)	• In February 2023, AutoFlight's Prosperity I eVTOL aircraft covered 250 km on a single battery charge[126]. • In July 2023, AutoFlight executed a formation flight of 3 autonomous eVTOL aircraft in Shanghai, China[127]. • In April 2024, AutoFlight delivered its eVTOL aircraft to a Japanese AAM operator[128]. • In December 2024, the Civil Aviation Administration of China granted the Production Certificate – one of three main certificates in the aircraft airworthiness certification system; the Type Certificate was granted in March 2024[129]. • In August 2025, AutoFlight conducted a two-ton eVTOL aircraft flight covering over 300 km on a round trip to an offshore oil platform[130].
	EHang (China)	• In April 2024, EHang obtained all three essential certifications from the Civil Aviation Administration of China: Type Certificate, Standard Airworthiness Certificate, and Production Certificate for its EH216-S model[131]. • In November 2024, the EH216-S completed its debut passenger flights in Thailand. The flights were conducted in central Bangkok with support from the Civil Aviation Authority of Thailand[132]. • In March 2025, the Civil Aviation Administration of China granted Air Operator Certificates (AOCs) for pilotless, passenger-carrying EHang's eVTOL[133]. • As of September 2025, EHang completed over 73,000 flights[134]. • In October 2025, EHang announced the launch of its new-generation long-range pilotless eVTOL aircraft, the "VT35," designed for inter-city travel (200 km range)[135].
	Hyundai/Supernal (South Korea)	• In July 2022, Hyundai Motor Group's Supernal unveiled eVTOL vehicle cabin concept at 2022 Farnborough International Airshow[136]. • In January 2024, it unveiled S-A2, its eVTOL product concept at CES 2024[137].
	SkyDrive (Japan)	• SkyDrive is a developer of the SD-05, a compact 2-passenger (plus pilot) electric air taxi[138]. • In April 2025, SkyDrive conducted a public demonstration flight at the Osaka World Expo – a 4-minute remotely piloted flight[139]. • In April 2024, the US Federal Aviation Authority accepted SkyDrive's application for a type certificate for the same aircraft, with the submission facilitated through the JCAB[140]. Meanwhile, in February 2025, it received a G-1 certification basis for its SD-05 eVTOL aircraft from the Japan Civil Aviation Bureau (JCAB)[141].
South America	Eve Air Mobility (Brazil)	• Eve Air Mobility is spun off from Brazilian aerospace company Embraer[142]. • Eve, like Embraer, works primarily with the National Civil Aviation Agency of Brazil, but has agreements to concurrently certify the Eve with US Federal Aviation Administration and the European Union Aviation Safety Agency[143]. In November 2024, ANAC published the final airworthiness criteria for Eve Air Mobility's eVTOL aircraft[144]. • Eve Air Mobility is planning to fly its full-scale prototype by early 2026 and receive a certification by late 2027[145]. • Eve Air Mobility recently secured $230 million equity capital raise and dual listing in the United States and Brazil[146].

Table A2. Estimated Demand for eVTOLs from Private and Public Sector – Exemplary Players

Region	Company	Pre-orders
North America	Archer Aviation (US)	Archer Aviation has a total order of 500+ eVTOLs, including: • Order for up to 116 Midnight eVTOLs from Future Flight Global, with an estimated value of $580 million[147]; • Order for up to 100 Midnight eVTOLs from United Airlines, with a $10 million deposit[148]; • Order for up to 100 Midnight eVTOLs from Soracle (Japan Airlines and Sumitomo Corp. joint venture), totaling approximately $500 million[149]; • Plan to purchase up to 100 Midnight eVTOLs from Air Chateau with approximate value of $500 million[150]; • Plan to purchase up to 50 Midnight eVTOLs from PT. Industri Ketahanan Nasional (Indonesia)[151]; • Plan to purchase up to 100 Midnight eVTOLs from Korean Air[152].
	Beta Technologies (US)	Beta Technologies has a total order of 100+ eVTOLs and eCTOLs, including: • Order for 10 Alia-250 eVTOLs with an option to purchase up to 150 more from UPS[153]; • Order for 50 Alia-250 eVTOLs from Lease Corporation International with an option for a total of up to 125[154]; • Order for 5 Alia-250 eVTOLs from Bristow Helicopters with an option to purchase 50 additional aircraft[155]; • Order for 25 Alia eCTOLs (CX300) by Space Leasing International[156]; • Order for 3 (CX300) by Air New Zealand with an option for 20 more[157]; • Order for an unspecified quantity of Alia CX300s by United Therapeutics with plans to use them to transit medical equipment and transplantable organs[158]; • Deposit-backed order for up to 20 Alia-250 eVTOLs by Metro Aviation with plans to integrate the airframe into its existing fleet[159]; • Deposit-backed order for 2 Alia-250 eVTOLs by New Zealand Air Ambulance Service with the option for 10 more[160]; • Deposit-backed order for undisclosed number of Alia CX300s by Alaskan freight airline Ryan Air and installation of 10 Beta Charge Cube stations across Ryan Air's network to recharge aircraft and ground vehicles[161]; • Agreement to facilitate the purchase of up to 20 Alia-250 eVTOLs by Blade Urban Air Mobility to its network of operators[162].
	Joby Aviation (US)	Joby Aviation has a total order of 200+ eVTOLs, including: • Order for up to 9 eVTOLs for the United States Air Force and other federal agencies as part of the company's $131 million contract with the Department of Defense (4 eVTOLs have been comitted to the US Air Force bases);[163] • Plan to purchase up to 200 eVTOLs and related services valued at approximately $1 billion from Abdul Latif Jameel.[164]
Europe	Vertical Aerospace (UK)	Vertical Aerospace has around 1,500 pre-orders of the VX4, with customers across four continents, including American Airlines, Japan Airlines, GOL, and Bristow (up to 50 eVTOLs)[165].
	Volocopter (Germany)	As of late 2023, Volocopter has had more than 500 pre-orders for the VoloCity[166].
Asia	AutoFlight (China & Germany)	AutoFlight has received 100+ pre-orders, including: • Pre-order for a fleet of 12 eVTOLs from Hanyang Investment Development Group[167]; • Pre-order for up to 100 eVTOLs from CITIC Offshore Helicopter and CITIC Financial Leasing[168]; • Pre-order for multiple eVTOLs from operational hub in Feixi County[169].

Region	Company	Pre-orders
Asia	EHang (China)	EHang has a total order of 390+ orders, including: • Order for 100 eVTOLs from Prestige Aviation, Indonesian aviation company[170]; • Order for 60 eVTOLs from Malaysia's Aerotree Flight Services (Kuala Lumpur Subang)[171]; • Order for 30 eVTOLs from Wencheng County, Wenzhou City, Zhejiang Province, with a purchase plan for 270 more eVTOLs[172] - 27eVTOLs have already been delivered[173]; • Order for 50 eVTOLs from AirX, a Japanese air mobility digital platform company[174]; • Order for 50 eVTOLs from Guizhou Scenic Tourism Development[175]; • Pre-order for 50 eVTOLs, starting with an initial order of 10 units of EH216-S human-carrying aircraft and 10 units of EH216-L cargo-carrying aircraft, from Kazakhstan's Allur Group[176]; • Purchase plan for 50 eVTOLs from Zhejiang Sunriver Culture and Tourism[177].
	SkyDrive (Japan)	Since September 2022, SkyDrive has received 250+ pre-orders, including: • Pre-order for up to 10 eVTOLs, with a conditional option for 90 more, from Vietnamese energy company Pacific Group[178]; • Pre-order for up to 100 eVTOLs from CT UAV JSC in Vietnam[179]; • Pre-order for up to 50 eVTOLs from Solyu, an aircraft leasing company specialising in zero-emission in Korea[180]; • Pre-order for up to 10 eVTOLs from SAI Flight Services, a South Carolina-based private jet charter operator[181]; • Pre-order for up to 50 eVTOLs from AeroGulf Services, Dubai-based commercial helicopter operator[182]; • Pre-order from Chodai, a provider of construction consulting services based in Tokyo, for one eVTOL[183]; • Pre-order for up to 30 eVTOLs from the PT Whitesky Aviation, Indonesia's helicopter operators[184]; • Pre-order of one eVTOL air taxi from the East Japan Railway Company (JR East)[185].
South America	Eve Air Mobility (Brazil)	Eve Air Mobility has tentative orders for 2,800 aircraft, representing a potential $14 billion in revenue[186]. It includes orders of up to 50 eVTOLs by Revo (part of Omni Helicopters)[187], 50 eVTOLs by Aviair and HeliSpirit[188], up to 50 eVTOLs from Helicopters[189], 54 eVTOLs by Future Flight[190], and other.

10

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Table of Terms and Acronyms Used

Term or acronym	Term and Definition
AAM	Advanced Air Mobility
CAGR	Compound Annual Growth Rate
eCTOL	Electric Conventional Take-off and Landing
eVTOLs	Electric Vertical Take-off and Landing
LUC	Light UAS Operator Certificate
UTM	Unmanned Traffic Management

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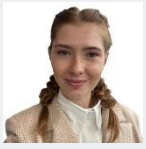

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