



Autonomous UAM: Taking Mobility to New Heights

Consumer excitement increases for safe,
reliable, self-flying air taxis

March 2021

Powered by hypothesis



Executive Summary

By 2030, the U.N. predicts that more than 67 percent of the world's population will live in city centers.¹ As populations increase, aging ground infrastructure simply cannot keep up and are extremely costly to repair and maintain. The solution? The sky.

A fundamental shift is on the horizon as a handful of companies are driving incredible innovation in the aviation space through the creation of an entirely new industry. Urban air mobility (UAM) and electric vertical takeoff and landing (eVTOL) aircraft are set to completely redefine how we view mobility.

Industry and financial analysts, aviation leaders, and local, regional and federal governments continue to show increasing interest in the space as experts predict this to be the biggest aviation revolution since the invention of the airplane itself.

The markets that are relevant to the UAM ecosystem represent just shy of \$1.5tn of potential global economic value in our base case.

Morgan Stanley
Urban Air Mobility (2018)

But what do consumers think? Is there demand for air taxi services and, if so, what's driving it? Are consumers ready for a world where everyday flight is a reality? If so, what are their expectations?

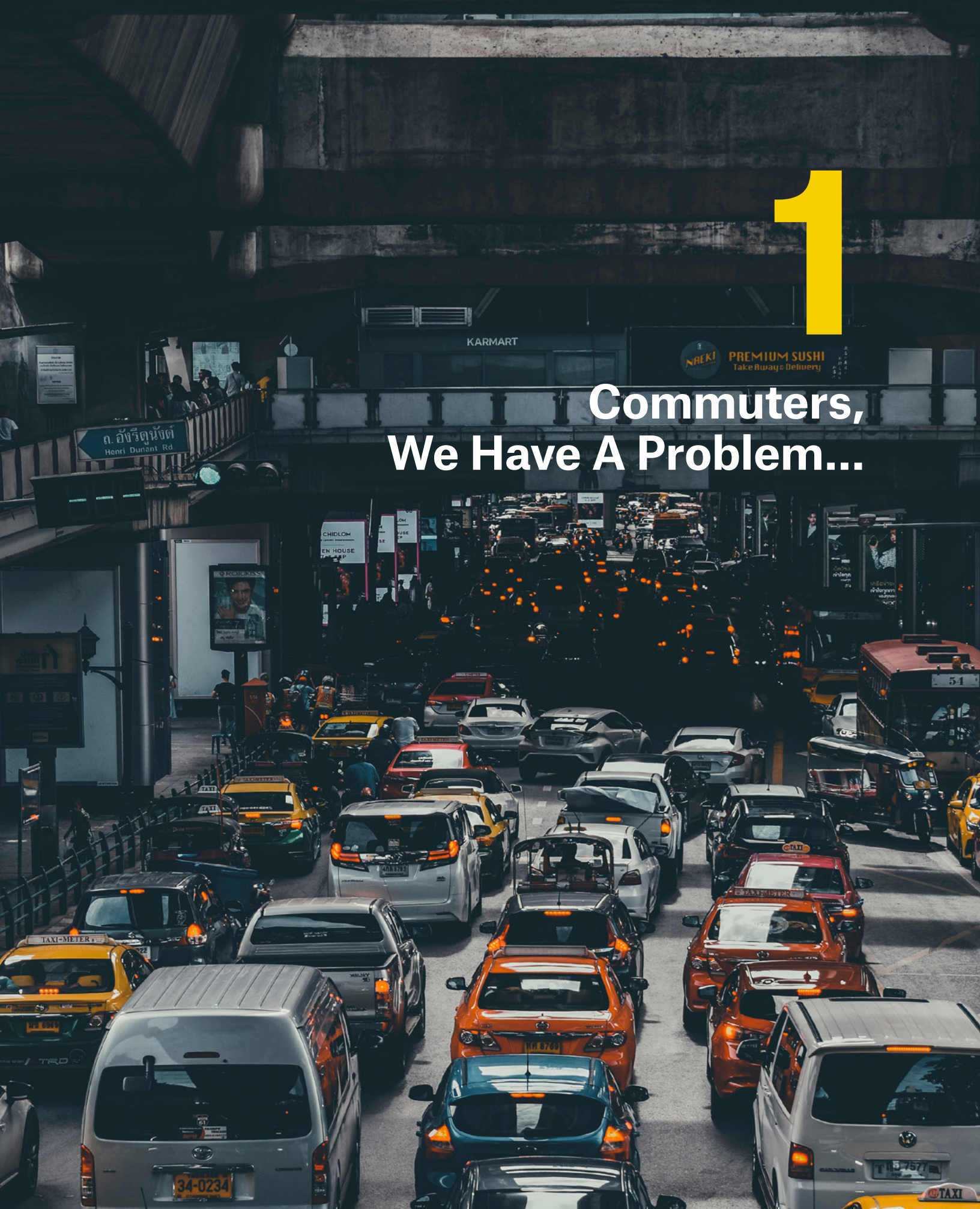
To answer these questions and more, Wisk, the first Urban Air Mobility company to design, build and fly an all-electric, self-flying air taxi in the U.S., commissioned Hypothesis Group, an independent insights, design, and strategy agency, to conduct research into consumer sentiment around autonomous eVTOL air taxi services.

The following paper summarizes the findings of this research and provides insight into the development of this emerging-but-inevitable transportation landscape in the U.S.

1. UN World Cities Report 2016

1

Commuters, We Have A Problem...



An Upsurge of Options

By any measure, this is a tremendously exciting time for mobility and transportation.

With the adoption of ride-sharing services across generational demographics, the automotive landscape has been rapidly shifting away from the decades-long patterns so ingrained in American Life. Simultaneously, the adoption of electric cars is helping reduce polluting emissions.

Micro-mobility also seemingly appeared overnight, including the ever-present electric scooter lying sideways on the curb or street corner while someone whizzes by on an electric skateboard. At the same time, battery-assisted bicycles allow people to pedal much further distances with much less effort, without ever breaking a sweat.

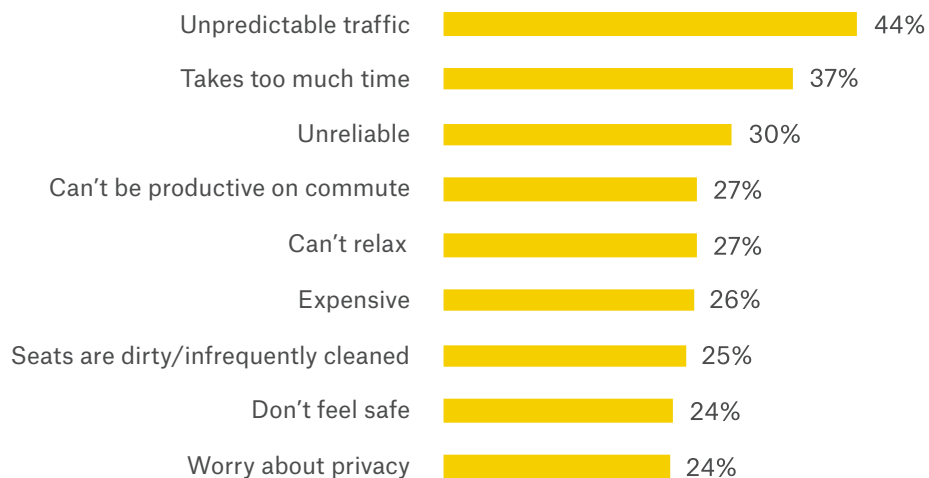
Stuck, on the Ground

Despite these emergent transportation options entering the scene, most people are still using traditional cars for mobility.

Whether a morning or evening commute, a trip between business meetings, or transiting to city centers for leisure, car-based mobility options are synonymous with frustration. Never ending traffic lights, potholes, gridlock, and aging infrastructure all contribute to a collective anxiety about running late or wasting time.

Consumer feedback reflects this analysis. When asked about concerns with transportation, the top responses related to unpredictability, time, and stress.

TRANSPORTATION PAIN POINTS



Brief Relief, but Trouble Beneath

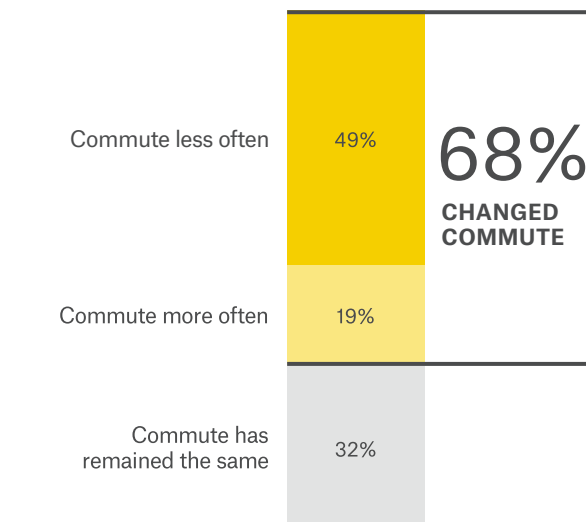
COVID was a brief reprieve from the stress and environmental impacts of commuting, with 68% of people having some change in their commute. However, as life returns to “normal,” most people say they are likely to return to their typical, pre-pandemic commutes.

Even with fewer cars on the road during the pandemic, that surprisingly did not translate to fewer accidents. The National Safety Group released a report in early March 2021 showing fatal U.S. roadway deaths increased in 2020.² As commuters return to roads, the ever-present dangers and old driving frustrations will return.

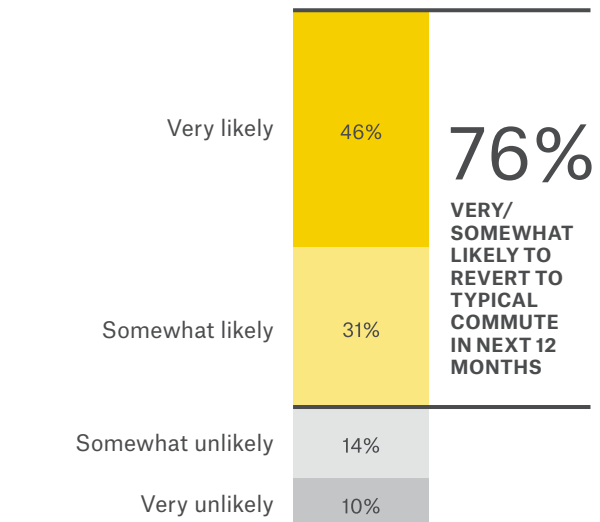
In the US, recent migrations out of major urban areas are unlikely to alleviate congestion as hoped. Despite the migration, data shows that those who are moving aren’t going very far.

For example, while the number of households leaving San Francisco increased by 77% during the first eight months of the pandemic, the majority leaving only moved to other nearby Bay Area counties, but not out of the state.³ That means that any dip in congestion as a result of the pandemic may soon see a reverse effect, as people need to commute from slightly greater distances for work and to socialize.

COVID-19 IMPACT ON WORK COMMUTE



INTENT TO RETURN TO ORIGINAL WORK COMMUTE IN NEXT YEAR



2. WSJ Accidents Report, <https://www.wsj.com/articles/u-s-roadway-deaths-rose-8-in-2020-safety-group-estimates-11614883077>

3. San Francisco Chronicle, “People are Leaving S.F., But Not for Austin or Miami, USPS Data Shows Where They Went,” February 17, 2021

Similarly, the business closures and stay-at-home orders likely led to a welcome reduction in pollution levels, as NASA data suggests.⁴ But as the traffic picks up and commutes potentially become even longer, the need for solutions that provide a cleaner, more sustainable mode of transportation is imperative.

The imminent 're-congestion' and related frustrations are just the tip of the iceberg. The

transportation system in America is facing fundamental challenges at the ground level.

The United Nations Department of Economic and Social Affairs estimates that by 68% of the world's population will live in cities by 2050.⁵ With ground infrastructure in need of an overhauling, it will take tremendous time and money to support this growth.

The Future's Looking Up

Truly solving America's transportation challenges requires a total paradigm shift. We have to look to the sky. Innovative companies like Wisk and others are working on new product offers in the air mobility space, including the development of eVTOL (electric vertical takeoff and landing) aircraft. According to a 2019 article in Greenbiz.com titled, "[7 Urban Air Mobility Companies to Watch](#)," "the number of electric aircraft in development worldwide has increased by 50 percent. Roughly 200 electric aviation companies are backed by more than \$1 billion from investors."

The vertical takeoff and landing capabilities of these aircraft help drastically reduce the footprint required, allowing the airports (referred to as "vertiports") to be developed in urban areas and with lower impact.

Further, the ability to run on all-electric motors helps eliminate emissions while also reducing the sound levels.

If you're bullish on autonomous cars, it's time to start looking at autonomous aircraft. To make this complex topic accessible, we collaborated across sectors and regions, using scenario analysis to size the addressable market—\$1.5tn in our base case by 2040.

Morgan Stanley, Urban Air Mobility, Flying Cars:
Investment Implications of Autonomous Air Mobility (Jan 2019)

4. NASA Pollution Levels, <https://www.nasa.gov/feature/goddard/2020/nasa-model-reveals-how-much-covid-related-pollution-levels-deviated-from-the-norm>

5. United Nations Urbanization, <https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html#:~:text=Today%2C%2055%25%20of%20the%20world's,increase%20to%2068%25%20by%202050>

Taking things one step further are autonomous eVTOL aircraft, arguably the most exciting and optimal solution being developed today. These aircraft implement a wide variety of sensors and communication devices to allow for autonomous flight.

As the first company in the U.S. to successfully design, build and fly an autonomous eVTOL aircraft, Wisk is a pioneer in the autonomous eVTOL air taxi space. Wisk's journey began in 2010 with a vision for a self-flying air taxi. To help bring autonomous air taxis to the world, Wisk is backed by The Boeing Company and Kitty Hawk Corporation, two leaders in aviation who are shaping the future of mobility. Through autonomy, Wisk will maximize both safety and efficiency.

Wisk's autonomous-first approach is critical to safety and scalability. According to Boeing research, "Approximately 80 percent of airplane accidents are due to human error."⁶ By developing autonomous systems, Wisk will help eliminate these errors and create an air taxi system that is fundamentally safe to transport people without an operator on board.

This concept is not just a dream. Wisk has more than 125 patents and has conducted approximately 1,500 test flights with full-scale aircraft. Headquartered in Mountain View, CA with locations in Atlanta, GA and New Zealand, Wisk is actively pursuing its vision of delivering safe, everyday flight for everyone.

WISK'S FLIGHT JOURNEY



6. Boeing AERO MEDA Investigation Process, https://www.boeing.com/commercial/aeromagazine/articles/qtr_2_07/AERO_Q207_article3.pdf
*Flights flown under the control of an onboard pilot.

2

Autonomous eVTOL and Consumer Interest

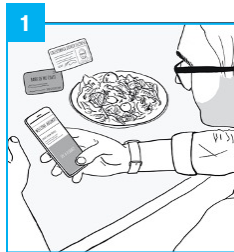


On Demand and In Demand

Saving time is something that appeals to everyone. Through the use of autonomous air taxi services, like those Wisk will offer, people will be able to spend less time getting there and more time being there. But how exactly do they work?

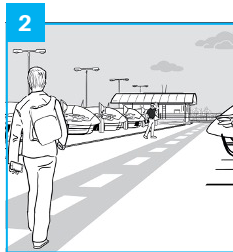
The process is simple:

SUMMARY OF AIR TAXI JOURNEY



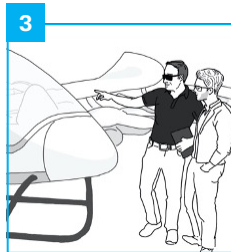
1 REGISTER

Riders register for their flight on their mobile device. First time riders will watch instructional and safety videos.



2 ARRIVE & CHECK-IN

Rider arrives at the designated vertiport and checks-in.



3 PREFLIGHT

Rider has a briefing with a flight associate to learn about the air taxi's emergency protocols and have any questions answered.



4 FLIGHT

Takeoff! The aircraft will takeoff vertically and head to the destination vertiport.



5 POSTFLIGHT

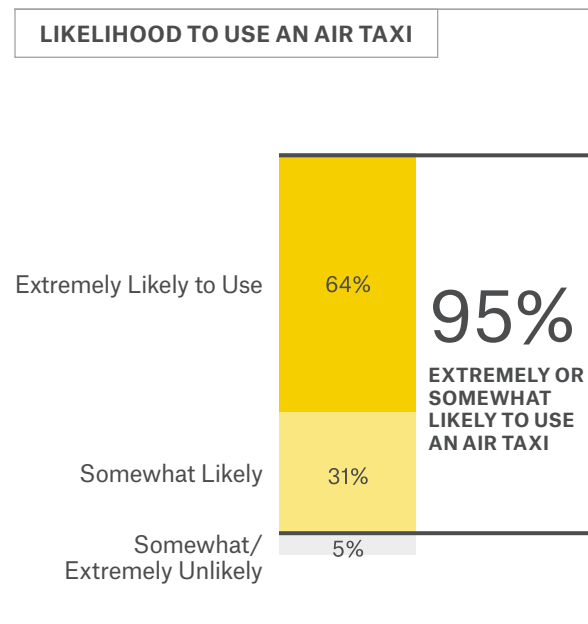
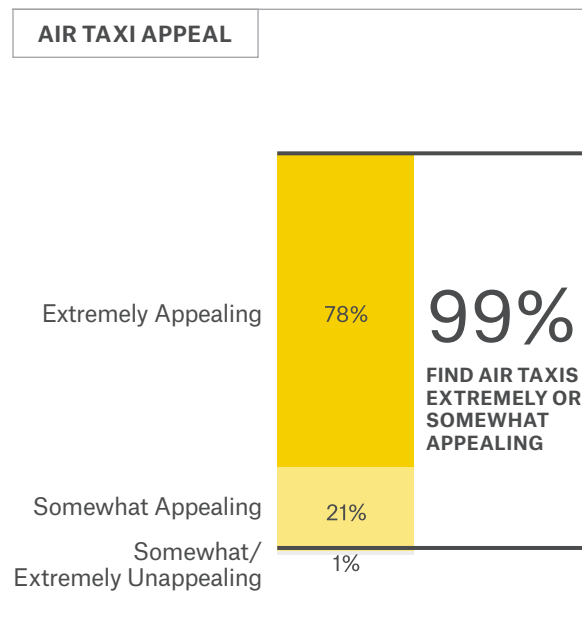
Rider arrives at their destination, exits the vehicle and vertiport and is on their way.

This general process of on-demand transportation will be familiar to travelers who fly regularly and/or use ride share apps. What differentiates autonomous eVTOLs is their ability to travel above ground-based infrastructure and at higher speeds, drastically expanding the possibilities for travel on a daily basis, while reducing the amount of time spent in traffic.

Further, vertical takeoff and landing aircraft remove the need for a traditional runway. Given that eVTOL are quieter than helicopters, vertiports can be located in rural

areas, city centers, and even neighborhoods, greatly expanding convenience and accessibility for riders.

The attractiveness of this transportation solution is immediately evident. After study participants were exposed to the full description and shown illustrative imagery, 99% found the air taxi concept to be “Appealing,” with 78% of participants finding it “Extremely Appealing.” Further, 95% said they are likely to try the service, with 64% of participants being “Extremely Likely.”



A Welcome Reprieve

When looking back at the primary frustrations with transportation, it's easy to see how consumers see autonomous eVTOLs as an attractive solution. By eliminating the need to be restricted to driving on existing ground infrastructure, autonomous eVTOLs help travelers rise above the challenges of the road.



It's About Time

With the ability to avoid many of the issues and frustrations associated with ground transportation that were previously presented, autonomous eVTOL air taxis will take a fraction of the time of today's traditional commuting options. This will be especially true for those with longer or indirect commutes.

A Certain Confidence

Travel times will also be more predictable as travelers will no longer be subject to unforeseen road closures, construction, and unexpected traffic jams. Further, current on-demand mobility options require the reliance on availability of drivers. By being autonomous, air taxis can guarantee their availability, giving riders confidence in the time it will take to reach their destinations.

Less Stress

In addition to reducing concerns around travel times, the autonomous nature will allow air taxi riders to be exactly that: passive riders. The service will alleviate the need to dedicate intense effort and concentration on safely and swiftly navigating traffic—instead opening up the luxuries of productivity, entertainment, relaxation, and rest.

Aspects and Expectations

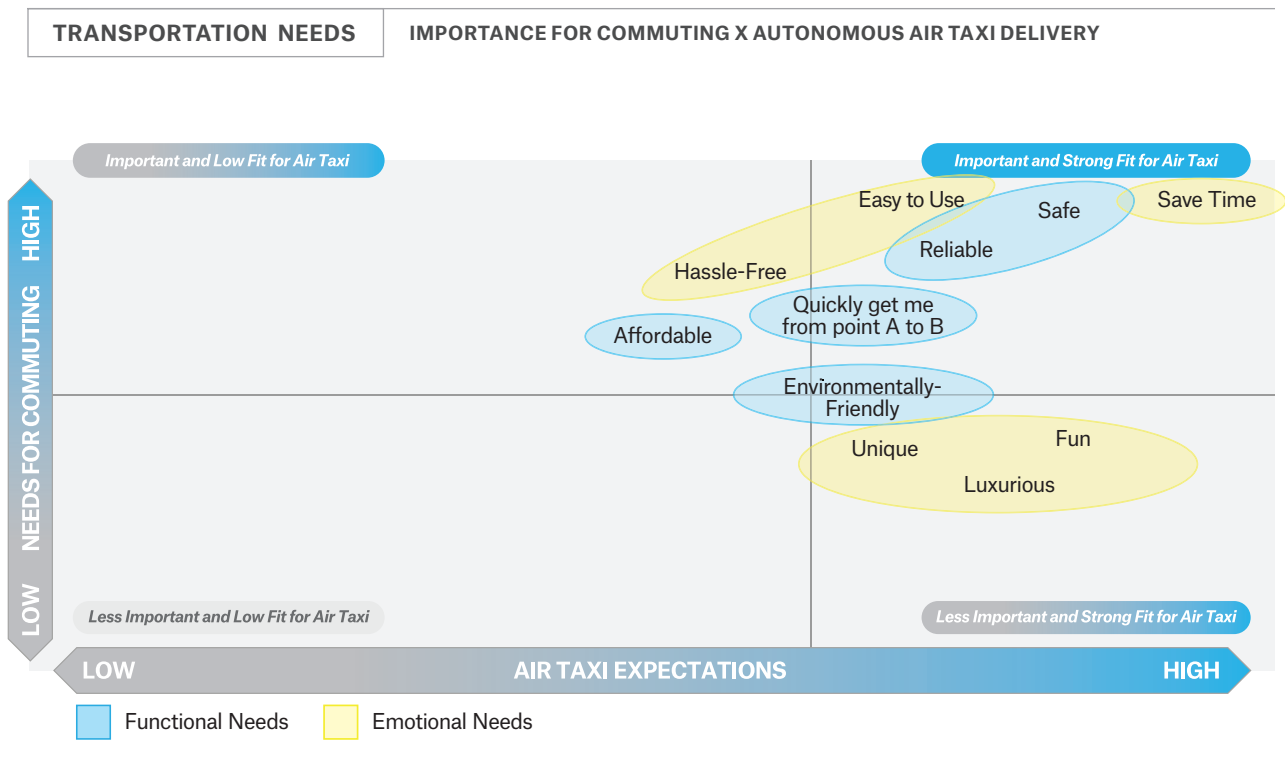
While the ability of air taxis to reduce the frustrations of the road are clearly driving high interest levels, consumers also have expectations around the service that are aligned with their needs for commuting overall.

Study participants were asked about the general needs they have—both functional and emotional—when commuting. Later, after being exposed to the autonomous air taxi concept, they were asked how well the different needs fit what they expect the air taxi service to deliver. As seen in the chart, there is a high correlation between

what consumers expect of their commuting experience—both functional and emotional—and what an air taxi will provide.

Specifically, consumer transportation needs and air taxi expectations are both high on key aspects relating to safety, reliability, time saving, eco-impact, enabling productivity, comfort and, as one might expect, being a new, fun experience.

Following, we will take a deeper look into these different areas.



Safety, Trust, and Assurances

Consumers already have high expectations that the air taxi will be safe, but groundwork still needs to be laid with riders for them to feel safe enough to take their first flight in an autonomous eVTOL. First and foremost, before taking the trip for the first time, riders need to know that the aircraft has been thoroughly tested and is safety vetted.

Details and data are paramount: The #1 assurance consumers want is knowing the aircraft have been thoroughly vetted and approved by safety regulatory agencies (64%). The more customer information around how the aircraft safety is validated, the better.

Additionally, consumers also require clear statements from the operating companies about safety and security measures, including details about the test flights that have been performed leading up to the service being offered.

Providing information about these approvals, processes, and tests, along with clearly explaining how mid-trip issues will be resolved, will significantly reduce any existing concerns.

Reliability

In addition to the functional safety and reliability of the aircraft, it's also key that the actual mobility service is dependable and reliable.

For many reasons, air taxis will have more predictable and consistent routes while avoiding the traffic jams below. Unlike GPS-based navigation apps, whose predicted arrival time may vary from the actual time en route, air taxi trip times will be much more accurate. A rider trying to get to a meeting, class, or doctor's appointment can be confident they will be on time.

In order to maintain consumer confidence with scheduling, frequent information and communication to confirm timing and availability will provide end-to-end reassurance.



“[I would want to] view a report by the maker assuring all safety procedures have been taken and the craft is up to maximum security.”

Research Participant

Time-Saving

Autonomous eVTOLs are efficient, putting time back into your day for the things that really matter. In addition to taking a more direct path towards the destination vertiport, air taxis will travel at much faster speeds than road speed limits allow.

Final speeds are still TBD across the board, and much of the reason comes down to batteries. Autonomous eVTOL manufacturers are all working to strike the right balance to optimize for time in air and speed, the combination of which ultimately determines the possible distances they can travel. However, speeds will likely be in the triple digits which, when combined with a more direct route, will yield significant time savings for riders.

The ability to reduce travel time, especially during regular commuting, helps expand the available time before or after travel—allowing riders to spend it on other areas of their life. Participants in the qualitative research expressed the interest in using that extra time for things ranging from getting more rest, to getting more work done, to spending more quality time with their family.

“

”

“I’d like to be able to read, or catch up on work, or look around if I want to, have some personal time... I would just kind of relax or look around, or check my voicemail or do any of that.”

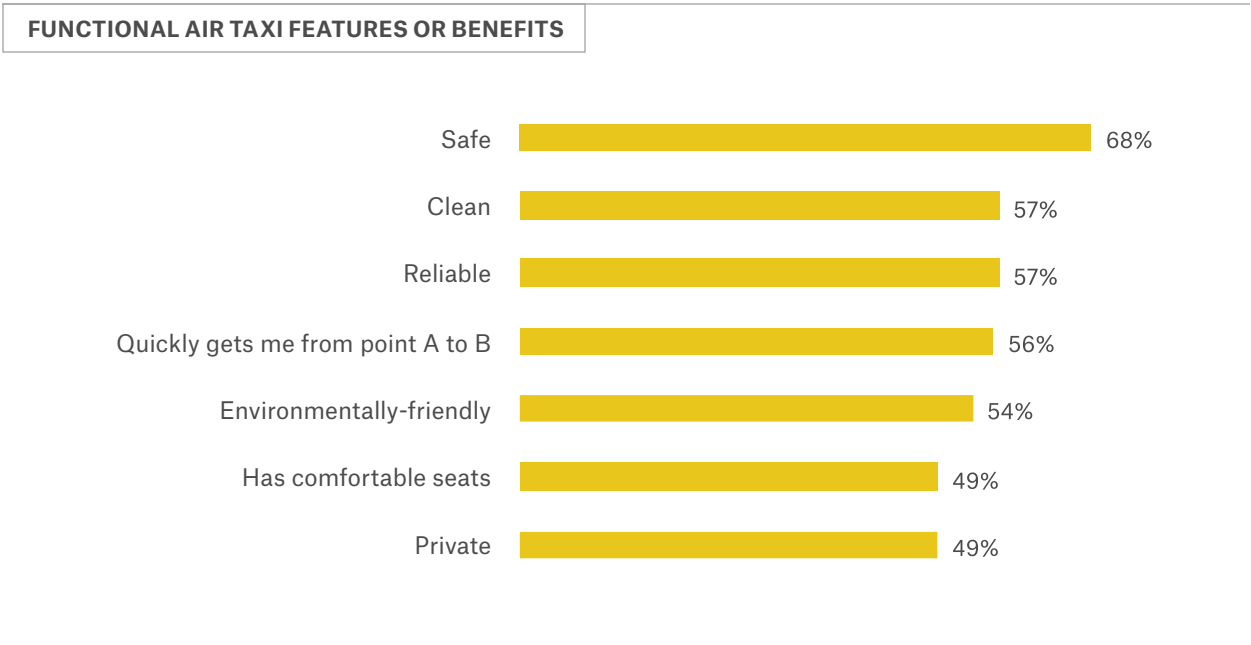
Research Participant

It’s important to note the data suggests that, when it comes to taking these aircraft for fun or casual occasions, saving time is slightly less important, suggesting part of the allure is about enjoying the journey, not just the destination.

Eco-Friendly

For many people today, having an innovative, new transportation product be environmentally friendly is simply the cost of admission. There’s a reason why auto manufacturers are increasingly making public commitments to offer electric vehicles in the coming years.

When it comes to an electric-powered air taxi, just over half of consumers said that environmental friendliness is a significant interest. The nature of eVTOL’s battery-powered operation directly helps reduce emissions from legacy mobility options, but air taxi service also offers the opportunity for aircraft-sharing, helping further reduce the number of vehicles overall.



Productivity

The ability to feel productive is one of the top consumer needs from commuting overall, and people view air taxis as a helpful way to remain productive.

With riders no longer having to worry about being actively driving, they are now free to use the travel time to focus on important tasks at hand. Tapping away on laptops, tablets, and smartphones, riders will get ahead on work tasks, catching up on the latest news, and be able to better keep up with family and friends.

Comfortable

Future customers expect a comfortable experience, one that visually signals a safe, premium experience. This will motivate the leap into this new mode of transportation, by helping to lower their stress levels through amenities and details that matter.

In the qualitative discussions, participants often mentioned the importance of having comfortable seats, though acknowledged it decreases in importance compared to an automobile since the time in flight will be relatively shorter.

This highlights another delicate balance of eVTOL manufacturers: weight saving is paramount, as it affects the speed and distance the battery-powered motors can achieve. Excited riders should not expect airline first class recliners, though manufacturers are innovating towards light-yet-comfortable seats, inspired by smaller aircraft and sports car technologies.

In addition to having comfortable seats, customer expectations include comforts like environmental and lighting controls, easy access to someone on the ground, good visibility, and WiFi access.

Fun, Cool, and Modern

Beyond the rational commuting needs, air taxi expectations also extend to old-fashioned fun.

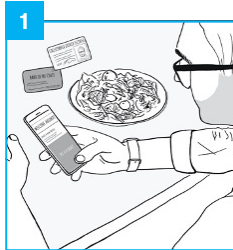
There is a definite cool factor that caters to riders' needs to see themselves as ahead-of-the-curve, through high-tech, modern amenities, streamlined design, and small delighters at every phase of the journey. Every trip should feel special, even when it's something riders do multiple times a week.

While the spirit-of-flight can bring joy to those in the air, it's easy to imagine the flood of photos and videos being shared over all social media channels.

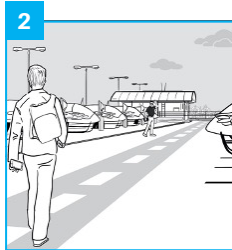
Summary of Journey-Specific Expectations

THE AIR TAXI JOURNEY

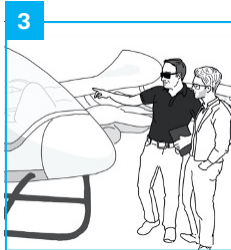
REGISTER



ARRIVE & CHECK-IN



PREFLIGHT



FLIGHT



POSTFLIGHT



Beyond the expectations around the overall air taxi experience, riders also have weighed in on what is (and isn't) important at the individual steps of the journey.

Registration and Booking

Air taxi registration should be streamlined and extremely clear. Riders provide payment, location and travel information, app provides cost, travel time and departure time, and any waivers are signed.

It is also important to riders to be able to select a specific type of service they would like to use, from a shared ride to booking the entire aircraft to themselves.

Vertiport, Arrival, and Check-In

Ideally, consumers prefer air taxi companies to help riders arrange their trips from their homes to the vertiports, such as setting up a driver to pick them up, to streamline the overall process. However, there is already an implicit expectation that an air taxi trip would be a multi-modal experience, requiring some mode of transportation to take the rider from their 'initial door' to the vertiport.

According to study participants, travel time to the vertiport is a less important factor than time saved overall. However, vertiports should still be located in major neighborhoods to maximize time saved and convenience to the customer.

Upon arrival, riders should be greeted by name by a friendly face who knows the details of their trip and can assist in the signing of waivers.

Pre-Flight

Before takeoff, riders expect to have a clear idea of what to expect on the flight. Associates should clearly brief them and discuss emergency protocols, always letting them know that they can reach someone on the ground, should they need to. Safety checks should happen out of eyeshot, so as not to elevate stress levels.

Consumers already have practical expectations for flight requirements. For instance, the possible need for non-high heeled shoes was assumed by female participants in the qualitative interviews, and luggage expectations were also more in-line with what might be carried on a subway.

Flight

Comfort and safety are integral to a smooth autonomous eVTOL flight. To convey an elevated feeling, seats should be very comfortable and well-designed. Riders should feel in control of sensory elements like air and lighting, and have ample visibility from the vehicle. Noise levels inside the car should be kept at a minimum to reduce stress levels overall and with the use of special noise canceling or reducing headphones.

Information is also key throughout the flight. Riders want in-flight information to be continuously available and clearly presented, as well as a ground associate that can be reachable at all times while in the air.

Post-Flight

Finally, companies should make the arrival process seamless, so riders can get from the vertiport to their ultimate destination as quickly as possible. As the on-demand, ride-hailing companies have introduced, a touchless payment-and-exit experience is desired.

Vertiports should also have charging stations in case riders' devices need a boost, and a clean bathroom before they go on their way, though consumers view the use of vertiports as merely transaction and not as a destination. A post-flight summary message and rider loyalty program are also welcome offers, helping forge an ongoing relationship and brand loyalty.

3

Fitting into People's Lives



Primary Use Cases

So now that people have seen the benefits of autonomous air taxi travel and shared their expectations, how will they use it?

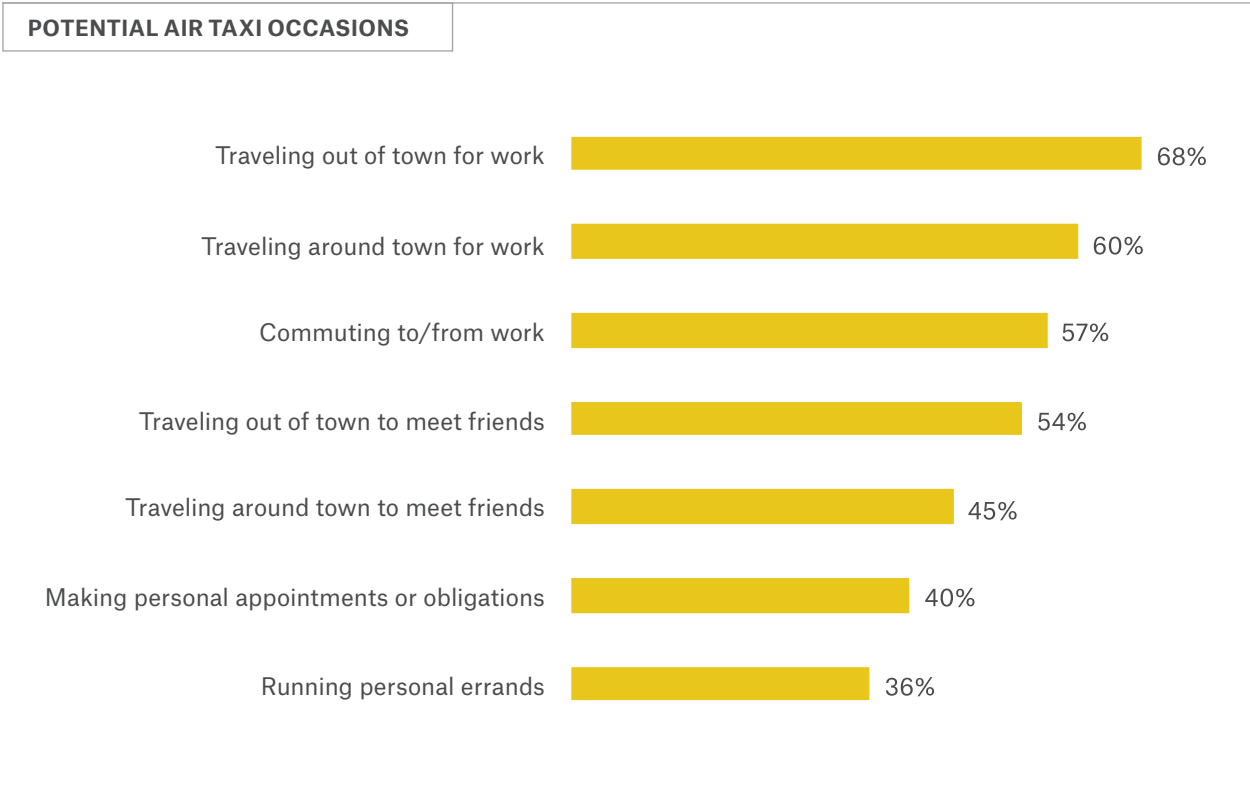
Data tells us that the majority would use an air taxi for work travel, whether out of town for work, around town for work, or commuting to/from work. Through the qualitative interviews, consumers explained this is both because it can transform time from inactive (when having to drive themselves) to active revenue-producing time, as well as because work travel can often be an expensable cost that would be covered by employers.

“ “

“...My time is worth money.
I'd be able to get a lot more
done in the day.”

Research Participant

It also shows many would also use them for personal use and sheer fun, whether they are meeting friends, traveling to appointments or obligations, or running personal errands.



Early Adopters

Overall interest in an autonomous eVTOL taxi is high across a wide range of consumer groups. In fact, those who find the concept extremely appealing have quite a few similarities as those who find it less so, including similar income levels, ethnicities, commute duration, and even their city size.

The primary differences noted are that those most interested in the concept tend to skew male (72% vs 54%) and towards the younger, 21-34 year old age range (31% vs 22% of all other ages).





4

Moving Forward

Onward and Upward

It can be overwhelming to imagine the multitude of ways autonomous eVTOL will expand lifestyle opportunities. From defining the new reality of how people travel, to making urban life more accessible, this new technology will fundamentally change the way we move, interact, and live.

As our research has demonstrated, consumers in the U.S. are clearly ready to embrace the benefits of autonomous eVTOL and air taxi service. In-line with consumer expectations, leading UAM companies will continue to focus on developing aircraft that meet customer expectations while simultaneously partnering with regulatory and safety agencies, governments, and non-profit organizations to maximize the success and positive impact of air taxi services.

Ensuring Success

To maximize success as the myriad of companies work tirelessly towards bringing the future of mobility to today, a few critical guardrails need to be in constant focus.

Prove (and Re-prove) Safety

Consumers are already aware that human error is the main cause of travel-related incidents. As autonomous technology continues to be tested and demonstrated, it will become clear how it is unquestionably the safest option for mobility.

Wisk has already conducted 1,500 test flights to continuously drive reliability and safety refinements. There are countless test flights still to be conducted as new aircraft are developed, new vertiports are installed, and new technologies allow air taxis to fly more efficiently.

The industry as a whole will need to demonstrate impeccable safety performance to get the thumbs up from safety agencies and consumers, alike.

Address Affordability

Air taxi pricing will most likely follow that of traditional aviation, beginning with a higher price-point but gradually decreasing as adoption and social acceptance increase, and technology advances.

Additionally, autonomous air taxi services will enable the scalability needed to lower the price-point and increase overall safety. While early adopters will likely mirror the traditional early tech adopter profile, the goal of is to democratize air taxi services so they are accessible by all.

Further, as air taxi services expand to cities across the U.S. and the number of trips increase, manufacturers will benefit from economies of scale in producing the aircraft as well as the vertiports. This is especially true for autonomous-focused companies like Wisk that do not need to solve for creating a pipeline of training, qualifying, and retaining pilots in every new city or region. As Boeing acknowledged the pilot staffing challenge in its 2020-2039 Pilot and Technician Outlook, “Analysis of new licenses and certificates issued over the past few years had indicated that the number of new personnel entering the industry was lagging demand.”⁷

Equitable access to air taxi services is inherent to Wisk’s mission of delivering safe, everyday flight for everyone. The success of this mission hinges on engaging with communities that reflect the broader population of the U.S. from day one. By working with a wide range of diverse communities, Wisk will ensure that the unique needs of each community are understood and incorporated into our analysis. Ultimately, through greater engagement at the local level, we will be able to understand our riders’ needs and achieve greater mobility equity and our vision for the future.

Expanding to Broader Geographies

Beyond affordability, there will be a natural evolution of comfort in an autonomous eVTOL aircraft, just as there is for any new technology. While proving safety and the general increase in openness that comes with seeing more people use a technology, the infrastructure will need to expand beyond urban environments.

As more suburban and rural vertiports are integrated into local transportation patterns, a whole new world of accessibility will be available to those all across America, giving people greater flexibility in the major life decisions around where to live and how to balance space with access to amenities.

7. Boeing AERO MEDA Investigation Process, https://www.boeing.com/commercial/aeromagazine/articles/qtr_2_07/AERO_Q207_article3.pdf

5

Summary

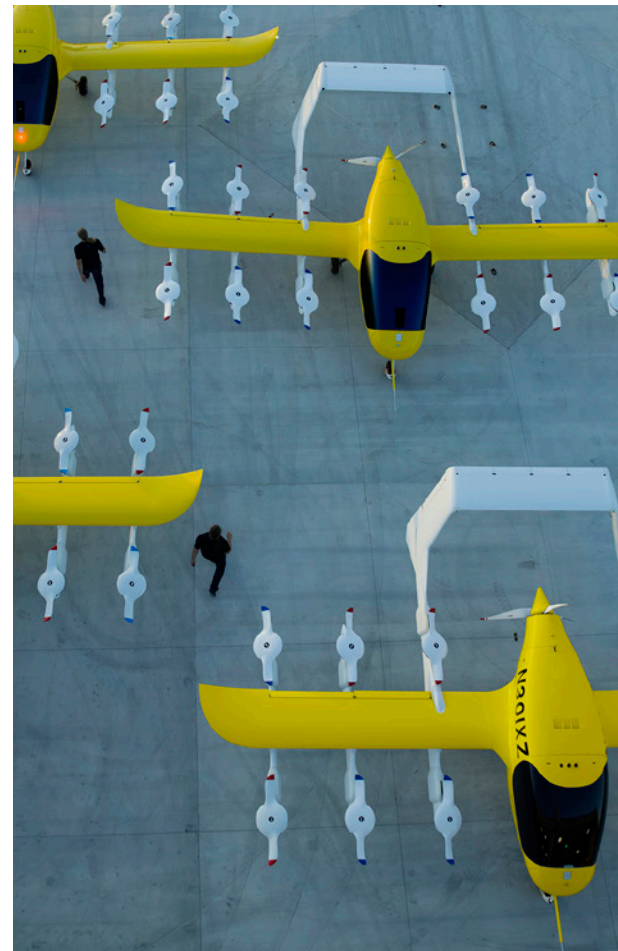


Taking Flight

It is clear consumers carry significant frustrations with the current state of transportation and, as our data highlights, autonomous eVTOL air taxis offer an attractive holistic solution, opening up a world of possibilities for local-level mobility.

Consumers showed high interest and intent to use the service concept like the one being developed by Wisk, trusting regulatory agencies to ensure a safe experience for all. They are especially excited for increased reliability in their commute while gaining more usable time in their day, all while using an emissions-free transportation solution that helps alleviate the overburdened ground transportation infrastructure.

As mobility companies race to the sky to deliver the best air taxi experience at an affordable rate, consumer excitement will continue to build as future ways of life are re-imagined and accessibility truly reaches new heights.



Abstract

This paper sets out to provide a detailed overview of the autonomous, all-electric, vertical takeoff and landing (eVTOL) air taxi landscape within the U.S. The goal of this paper is to:

- Understand why air taxi services will be adopted
- Demonstrate the already-existent interest from consumers
- Examine expectations
- Highlight key considerations for manufacturers, riders, and the community

Understanding the new, major paradigm shift toward everyday local flight is critical to so many aspects of future planning. The adoption of new transportation modes have far reaching effects on the ways consumers view and interact with the world around them, having implications for city and urban planners, residential communities, business districts, and even personal relationships. As Morgan Stanley notes in its 2018 Urban Air Mobility (UAM) research report, “The markets that are relevant to the UAM ecosystem represent just shy of \$1.5tn of potential global economic value in our base case.”

This paper summarizes key market research insights on consumer sentiment toward autonomous air taxi services to guide understanding of and development towards this emerging-but-in-evitable transportation landscape in the U.S.



RESEARCH OVERVIEW

Wisk commissioned Hypothesis Group, an independent insights, design, and strategy agency to execute the Urban Air Mobility (UAM) consumer research in the U.S.

The research and this subsequent paper focus on the consumer-derived insights across the top 30 Designated Market Areas (DMAs) in the U.S. to help provide an informative view into the autonomous eVTOL and air taxi landscape and what the future holds.

One-hour virtual in-depth interviews were conducted in August 2020 followed by a two-hour online focus group.

Following the qualitative exploratory research, a 30-minute, mobile-optimized quantitative survey was conducted online. Data collection ran for one month starting in early October.

In order to qualify for the research, all participants had to meet the following requirements:

- Age 21-65
- Live and/or commute into top 30 U.S. market DMAs
- Currently employed with an income of \$75k+/year
- Commute at least once a week, 30+ minutes each way
- Using at least one form of transportation for commute
- Take 1+ flights per year
- Value technology solutions, among the first to try new technology
- Positive attitudes towards electric and autonomous vehicle
- Open to autonomous planes and helicopters
- Non-negative economic mindset around COVID-19
- Not employed in a competitive or adjacent industry

Consumers who met these requirements in the quantitative phase came from the 30 largest DMAs in the United States, especially the biggest metropolitan areas ("tier 1").