

TRAVEL TECH INNOVATION: MARKET REPORT

EVALUATING TRAVELERS' APPETITE FOR ADOPTION



EXECUTIVE SUMMARY

Disruptive technologies are gaining momentum and promising to revolutionize the travel experience.

From artificial intelligence, biometrics and blockchain to supersonic planes and trains, the travel industry has entered a period of rapid change. With momentum accelerating – and new innovations and possibilities introduced to the market almost monthly – it's time for travel leaders to separate hype from reality and explore anticipated adoption.

OAG, the global leader in flight information, surveyed more than 2,000 U.S. travelers to gain insight into which future advancements will resonate. This report – part one of a two-part series on future travel tech innovation and disruption – looks at:

1. Improving the travel experience through biometrics
2. Traveler appetite for future innovation in travel, including blockchain, robotics and virtual reality
3. Popular applications for artificial intelligence
4. Early adoption estimates for future industry-changers, including autonomous vehicles and supersonic planes

The second part in OAG's series – to be published in Q2 2018 – will look at the future of travel booking, modern payment methods and the growing role of social media and non-travel consumer platforms in the industry.

Survey Demographics

Total respondents: **2,164**

Leisure travelers: **67 percent**

Business travelers: **33 percent**

Timing: **December 2017 – January 2018**

THE FUTURE TRAVEL EXPERIENCE: CONVENIENCE AND EFFICIENCY RULE

When evaluating what consumers crave in their day-to-day travel experiences, convenience and efficiency still rule.

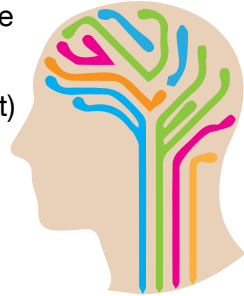
Case in point: OAG asked 2,164 travelers to identify which future development and innovations would improve the travel experience the most. The most popular answer: the use of biometrics to expedite check-in, boarding and security. Travelers ranked biometrics ahead of many other innovations currently in the works – from supersonic planes and AI-driven booking and itinerary management systems to blockchain.

Biometrics-based processes are not new – they have already been implemented at many airports and airlines across the globe. KLM Royal Dutch Airlines, for instance, is testing facial recognition software by scanning travelers' passports, boarding passes and faces, and then allowing boarding without any documents. Many international airports, such as Dubai International and London Gatwick, use biometric screening technologies for security and border control. At Boston Logan, JetBlue recently completed a trial that allowed travelers to board flights to Aruba hands-free, and is now exploring a similar process on flights from Boston to Santiago, Dominican Republic.

That said, U.S. travelers are seeking faster integration and wider deployment, all with the goal to streamline their travel experience. In fact, more than 75 percent of travelers would be willing to

use biometrics – such as fingerprints and facial recognition – if they could instantly and easily:

- Streamline customs and immigration (85 percent)
- Get through security without the use of other identification (85 percent)
- Check-in for their flights (84 percent)
- Pull up their itinerary (79 percent)
- Board a plane without a boarding pass (75 percent)



While travelers crave the efficiency and speed provided by biometrics, adoption in the U.S. has been comparatively slow to international peers, and may continue to lag until the Transportation Security Administration establishes industry standards for airlines and airports to follow.

KLM Royal Dutch Airlines, for instance, is testing facial recognition software by scanning travelers' passports, boarding passes and faces, and then allowing boarding without any documents

Beyond biometrics, the travelers surveyed by OAG identified several other advancements and innovations that would improve their travel experience:

- Supersonic high-speed planes and trains (48 percent of travelers believe this will improve the future travel experience)
- Blockchain-enabled booking sites that eliminate the middleman and let travelers book directly with suppliers (43 percent)
- Increased acceptance of modern payment methods like Apple Pay, Google Wallet, Venmo and WeChat Pay (37 percent)
- Artificially-intelligent travel booking and itinerary management systems (26 percent)
- In-flight or terminal-based virtual reality systems that allow travelers to preview destinations and local experiences before traveling (24 percent)
- Robots that automate the check-in, security, boarding and customer service process (21 percent).

The relatively low interest in virtual reality was surprising – especially as experience-based travel continues to grow in popularity. One reason for this may be current comfort levels outside of travel, which are still evolving. That said, the use of virtual reality could be a game-changer for the future – allowing travelers to preview everything from a hotel room and a specific seat on a plane to tourist destinations, all before they book.

While travel-specific uses for blockchain technology are still being explored, the security, trust and reliability of the platform indicates a possible role in travel booking, potentially impacting airlines,

Online Travel Agents (OTAs), the sharing economy and rental services like Airbnb and HomeAway. Airlines are also actively exploring the possibilities. Toward the end of 2017, Lufthansa announced plans to investigate a decentralized open-source travel distribution platform, and Air New Zealand said it would explore blockchain use cases around baggage, retail and loyalty.

Singapore's Changi airport has proven to be an early innovator and disruptor of many of these technologies. The airport has been actively working with startups to implement and test advanced products ranging from automation and robotics to leveraging IoT sensors for real-time information gathering on consumer behavior.

ARTIFICIAL INTELLIGENCE: PUNCTUALITY PREDICTABILITY. PRICING CERTAINTY.

Travel providers are also investing heavily in artificial intelligence and predictive analytics, a trend that shows no sign of slowing down.

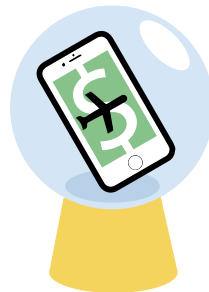
To gain a better understanding of where travelers see the most opportunity for AI in travel, OAG asked survey respondents to identify which applications of AI would positively impact and improve their travel experience.

Not surprisingly, the most popular application of AI is predicting flight pricing during the booking process, identified by 73 percent of all travelers and 89 percent of millennials. Many travel leaders are already investing heavily in price predictions, including Google, Hopper and Kayak.

Given consumer demand for predictive pricing services, and mixed opinions as to its current effectiveness, it will be interesting to watch how the market shakes out – specifically around consumer confidence and prediction accuracy. While a lot of work still needs to be done, it's fair to assume that once a provider figures out a more reliable model, they will protect it all costs – or risk the rest of the market instantly copying the formula.

Artificial Intelligence also promises to play a big role in predicting flight cancellations and delays: 60 percent of travelers, and 72 percent of millennials, said using AI to predict flight cancellations and delays on the day-of-travel would be valuable. Another 50 percent of travelers want to see AI-driven predictions on delays and cancellations during the booking process.

With travelers paying more attention to on-time performance than ever before, airlines are investing heavily to improve performance. OAG expects more OTAs and meta search engines to make and integrate predictions – based on historical data, route and carrier performance, weather predictions, aviation congestion and more – into the booking process. Tech and mobile providers are also getting involved: flightsayer, an app from Resilient Ops, identifies delay patterns across millions of flights and assigns delay risks so travelers can make more informed booking decisions.



Looking at the future of predictive analytics collectively – including delays, cancellations and pricing – the travel providers that get it right will hold a significant advantage over competitors. With most travelers booking primarily based on price and convenience, and similar deals available across many booking sites, winning market share and building brand loyalty ultimately comes down to adding extra value, and travelers have made it clear that predictive analytics is a priority – today and in the future.

Operationally, the more actionable data airlines and airports have at their disposal – from sources like predictive analytics, flight information, schedules and IoT sensors that track passenger patterns – the more equipped they will be to create seamless customer experiences and make informed decisions around implementing new processes and testing new technologies.

THE FUTURE: FASTER. AUTONOMOUS. AND UNCERTAIN.

Travel innovation and industry disruption certainly doesn't stop with AI and biometrics. Investors, tech companies and travel providers are looking well beyond today, exploring possibilities ranging from supersonic planes to autonomous vehicles and aircrafts.

While supersonic planes are still far off – likely 5-7 years – developers and investors need to explore the price to value ratio. OAG asked travelers how much extra they would pay (compared to typical flight prices) for a cross-country or international ticket on a supersonic jet that could get them to their destination nearly twice as fast as planes today. The big finding: 67 percent of travelers would be willing to pay more. Specifically:

- 48 percent of travelers are willing to pay up to 25 percent more
- 7 percent are willing to pay up to 40 percent more
- 9 percent are willing to pay up to 50 percent more
- 2 percent said they would pay up to 100 percent more

Not surprisingly, business travelers were willing to pay more, on average, than the general population.

Another innovation seeing significant investment

and research is autonomous vehicles – especially from companies like Uber, Lyft, Waymo, Google and more.

According to OAG's survey, 27 percent of travelers would be comfortable with an autonomous vehicle picking them up or dropping them off at the airport today. Another 41 percent said they would be willing to try it, but not without hesitations or uncertainty.



While this development is promising for technology companies and ride-hailing services like Lyft and Uber, it may also present logistical challenges for airports, which initially struggled to manage the new demand around the explosive growth of ride sharing. On the other hand, forward-thinking cities and airports may see it as a commercial opportunity, capitalizing on new capabilities for shuttle and transportation services.

OAG'S TAKE

While the global travel industry is ripe for disruption and innovation, it's important to consider the competitive dynamics at play in North America. In North America, years of market consolidation have left consumers with less choice, and reduced the urgency for providers to innovate.

In fact, generally speaking, the international travel community is ahead of the U.S. when it comes to innovation, and further along with their deployment of biometrics and artificial intelligence. For example, Dubai International just announced a new robot that can spot and report suspicious travelers. The UK government is looking to leverage machine learning to improve airport security and make checkpoints easier on passengers. Changi Airport, mentioned earlier in this report, is considering self-driving vehicles to transfer passengers between terminals. Heathrow installed 36 biometric-enabled self-service boarding gates. Gatwick launched augmented reality wayfinding. The list of new innovations could go on.

And the airports aren't the only players driving change. Several carriers are pushing the boundaries on tech innovation. In 2017, a handful of U.S. carriers, specifically Delta and JetBlue, began testing and trialing fingerprint and facial recognition technology. French budget airline, XL Airways, launched in-flight virtual reality entertainment. A number of airlines, including Wow Air, Emirates, JetBlue and Lufthansa, are actively partnering with startups and incubators to explore future collaboration. And nearly every airline is investing to create more personalized travel experiences for their customers through data.

Generally speaking, the international travel community is ahead of the U.S. when it comes to innovation, and further along with their deployment of biometrics and artificial intelligence

While U.S. airlines and airports may lag behind their international peers for tech innovation, the drumbeat for change in the U.S., and across the globe, remains constant. Travelers are demanding a faster, more informed and convenient experience – from search and booking to the airport, in-flight and in-trip experience. As that drumbeat gets louder, and startup and tech innovations continue to push the boundaries on what's possible, the airlines, airports and travel providers that take the lead – and get it right – will have the upper hand in the market.

The bottom line: the market continues to rapidly evolve. To thrive today and in the future, travel providers need to invest in a well-connected ecosystem built primarily on incredible data, deep analytics, partnerships with innovative tech companies and incubators, and an incredible pulse on the evolving needs of today's traveler.

UP NEXT

Stay tuned for part two of OAG's travel innovation and disruption series – which will look at the future of travel booking, modern payment methods and the growing role of social media and non-travel consumer platforms in the industry. The report is due out soon.

TAKE THE NEXT STEP

Let us advise you

For more information, visit www.oag.com
or email us on contactus@oag.com

oag.com

