The Future of Air Travel: Eight Disruptive Waves of Change

Faced with dramatic shifts in technology innovation, consumer preferences, global turbulence and competitive threats, airline and travel providers will need to undergo radical change to still be operating in 2025.
EXECUTIVE SUMMARY

Eight interconnected waves of change are set to profoundly impact air travelers and travel businesses between now and 2025:

1. **Macroeconomic turbulence**: Factors beyond the industry’s control, such as geopolitics and terrorism, can severely impact revenues. Companies with a ready plan to respond with agility and speed will gain competitive advantage.

2. **Disruptive new sources of travel services**: New entrants are poised to expand their services – and threaten traditional businesses.

3. **New business models**: Traditional providers will need to seek new ways to deliver value, such as subscription-based models, service bundling and cross-industry offers.

4. **Alternate modes of transport**: A new generation of travel options will fuel fierce competition while opening new opportunities in a hyper-connected world.

5. **Frictionless travel experiences**: Airport experiences will become more seamless and convenient, thanks to a network of IoT devices, cloud-based biometrics and risk-based screening.
6. **Next-generation travelers**: Travel providers will need to develop new offerings to meet the preferences and needs of emerging demographics.

7. **Immersive experiences**: Virtual and augmented reality will transform the way consumers plan, purchase and experience travel.

8. **The potency of hyper-personalization**: One-to-one segmentation and communication with travelers will soon be possible, raising data privacy questions.

These eight waves of change should be on the agenda of every travel industry CEO. As new digital technologies continue to re-shape travel experiences and business models, travel industry leaders and policy makers need to assess how growth or even survival can be achieved. Their challenge is to harness opportunities to develop captivating, meaningful experiences that keep travelers loyal and safe.

This white paper examines what the future will look like in 2025 and provides recommendations on how travel providers should prepare for and position their organization to ride each wave to success.
THE ROAD TO 2025

WAVE 1 MACROECONOMIC TURBULENCE

While travel and tourism is a powerful force in the world’s economy, the industry is also vulnerable to macroeconomic factors beyond its control. Geopolitics, regulatory issues, terrorism and climate change concerns pose significant risks for travel companies over the next decade.

Today’s unsettled world calls for travel companies to respond to events quickly. In addition to the protections afforded by strong balance sheets and cash reserves, companies need to offer diversified services in multiple markets. Success today requires more than a single line of business.

Travel businesses need to be sure their strategy includes contingencies for the following factors:

- **Geopolitical shifts.** Rewind world events 12 months, and few would have predicted such events as Brexit in the UK or the election of a protectionist U.S. president. Populism seems to be on the rise just as some parts of the world continue to open their arms through relaxed tourism visa rights. The geopolitical shifts add more complexity to travel businesses’ planning and long-term investment decisions.

- **Open or closed skies and borders.** While the Open Skies agreements will eventually result in greater connectivity and options for passengers, all has not gone smoothly for the air transport pact, which covers air travel between the U.S. and the European Union. Brexit doesn’t align with aviation liberalization, and U.S. airlines have made several attempts to revisit the agreement. As International Airlines Group (IAG) CEO Willie Walsh said of the agreement at the 2015 annual meeting of the International Air Transport Association (IATA), “It’s a huge elephant, and it’s going to be in every room.”

- **Terrorism and crisis management.** Terrorism-related travel disruptions have become an unfortunately regular event throughout major cities and regions worldwide. We see the alarming frequency of terrorist incidents forcing airline and travel companies to strengthen their crisis management and contingency planning strategies. In addition to building trust with the public regarding their security practices, more companies are developing plans to respond with speed and empathy to preserve their brands during major incidents.

- **Climate change and sustainable tourism.** As more consumers look to reduce their carbon footprint, worry over climate change will continue to impact the travel sector. The global aviation industry produces 2% of all human-induced carbon dioxide emissions, according to the Air Transport Action Group. While it’s a relatively small contribution compared with other industries, it attracts a great deal of negative media. In the face of growing concerns over climate change and possible penalties, more corporations may take steps to reduce their air travel, potentially affecting the lucrative business-travel segment. Governments, too, are showing interest. The UK, for instance, taxes passengers in accordance with their distance of travel and their seating class on the aircraft.

Green-minded movements beyond air quality also target the travel sector. For example, the role of carbon emissions in the Great Barrier Reef’s coral bleaching could fuel a global backlash and lead to more stringent regulations for air travel.

In the last few months, the airport industry’s adoption of cleaner technologies has started to accelerate, with interest increasing in autonomous vehicles around airports and also in electric takeoff, which similar to hybrid autos, allows aircraft to use an electric start before shifting to diesel.
The short-term answer to managing macroeconomic shocks is easier access to capital for infrastructure investment. But the travel sector’s typically low returns for investors limit available funding and, by extension, the speed at which organizations can transform.

The Takeaway: Immediate Actions
While travel organizations can’t prevent macroeconomic shocks, they can better prepare for change. We recommend the following steps to ensure travel providers are ready for the inevitable shifts in the macroeconomic order.

- **Encourage cross-border movement.** Easy entry into countries has a direct impact on travel destinations. Travel industry players should lobby governments to address stringent travel visa requirements. E-visas, visas on arrival and visa waiver programs are key to encouraging travel.

- **Address security concerns.** Coordinated efforts by travel players would significantly advance so-called smart security and reduce security overhead. The IATA Checkpoint of the Future initiative aims to make airport security more effective and convenient by replacing one-size-fits-all passenger screening with a risk-based approach that factors in security outcomes, process improvement and technology.

- **Focus on sustainability and climate change.** The IATA and the United Nations World Tourism Organization (UNWTO) have declared 2017 the International Year of Sustainable Tourism for Development. Both organizations have put sustainability programs and targets in place. For their part, airlines can focus on three areas to address climate change: aircraft efficiency, operational efficiency and alternative fuels.

In the U.S., the Continuous Lower Energy, Emissions and Noise (CLEEN) program is the Federal Aviation Administration’s (FAA) principal environmental effort to accelerate development of new aircraft and engine technologies and advance sustainable alternative jet fuels. The 28-member airlines of the Sustainable Aviation Fuel Users Group (SAFUG) represent one third of commercial aviation fuel demand. They have adopted a set of environmental, economic and social sustainability criteria.

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Long-term keys to success are agility, resilience and scalability. Agility coupled with strategic partnerships can result in increased global scale, delivering economic advantages and some protection from regional highs and lows. Travel companies should accelerate their pursuit of strategic alliances, joint ventures and mergers to shield themselves from continuing macro disruptions and also to leverage network economics, mutual synergies and cost savings.

Another benefit of consolidation is greater access to funds for innovation. Within the airline sector, the International Airlines Group alliance is a useful example of how operational synergies and more fluid business dynamics can help industry players absorb macroeconomic threats.
WAVE 2 DISRUPTIVE NEW SOURCES OF TRAVEL SERVICES

Travel distribution has evolved into a complex network involving multiple players. While full-service carriers have depended on global distribution systems (GDS) as their primary distribution channel, online travel booking has led to transparent pricing - and set in motion the potential for GDSs to recede into an aggregation and distribution role.

At the same time, platforms through which travelers access content are gaining primacy. Millions of consumers interface daily with metasearch engines and gatekeepers such as Expedia, Ctrip and Facebook, which offer tailored content based on search history, profiles or conversations through messaging apps. Other major players - such as Apple and Amazon - are armed with an abundance of personal customer information. Without owning any inventory, sharing-economy stars such as Airbnb and Uber have emerged as formidable competitors.

All of these nontraditional competitors are poised to expand their services across the full travel experience. They form a very real, immediate threat to traditional intermediaries that perform only aggregation and distribution.

To compete, the establishment must build comparable customer data hubs that go beyond travel-only data. Partnering instead of competing with the new entrants may be a more fruitful strategy, but it requires sharing inventory and capabilities to offer complementary products.

The Takeaway: Immediate Actions

Under pressure from the ever-increasing direct-sales channel of airlines and hotel companies, traditional travel providers need to explore new ways of creating business value. Travelport’s ownership of eNett, a payment solutions provider, is one such example. The acquisition advances the UK-based company’s Beyond Air strategy, which accounts for the majority of its revenues, into a new revenue stream in payments.11

By 2025, options for intermediaries could range from serving as central repositories of rich customer data to acting as content aggregators and distributors.

Other options include investing in standards such as IATA’s New Distribution Capability (NDC). NDC creates a communications pool among airlines, travel agents and web-based travel service providers. It provides an excellent opportunity for enhanced customer experiences and greater product differentiation through the sale of ancillary products such as seat upgrades.12

Blockchain technology is also likely to have a major impact on payment architectures over the mid to long term.13 Incumbent players in payment settlement, such as Billing and Settlement Plan (BSP) and Airline Reporting Corporation (ARC), can’t afford to maintain the status quo and should invest in blockchain pilots for the travel industry.
Blockchain’s cryptography and auditable digital signatures can provide more secure verification for travel transactions. The technology’s shared infrastructure, enabled via a distributed ledger, could reduce fraud and eliminate payment processor intermediaries to create more cost-effective, frictionless ways of conducting business. To simplify border processes, SITA is evaluating blockchain for use as a single passenger token to secure biometric and personal data.\(^{14}\)

To stay competitive, distribution business models will need to evolve to encompass shared innovation, a culture of experimentation and cross-industry alliances. There is much that travel intermediaries can learn from the finance and retail sectors, where some companies have leveraged customer journey mapping and design thinking techniques\(^{15}\) to create more engaging customer experiences and relevant business-to-business services.

**Wave 3: Flight and Beyond: New Business Models**

The increasing speed of technology breakthroughs offers travel providers a big advantage: By applying new technologies to emerging markets, they can create and capture value much more cost-effectively than in the past. For example, influenced by the success of ride-sharing in ground transportation, complementary startups are emerging in the airline space. New online services, such as Jettly, Fresh Jets and JetSuite, connect prospective passengers with empty seats on privately owned aircraft.

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Federal regulators are still playing catch-up with the sharing economy. While the FAA currently prohibits flight-sharing, citing safety and liability concerns, the European Aviation Safety Agency has granted permission for flight-sharing start-up operations.

Given that the two agencies regulate 50% and 30% of the world’s aviation activity, respectively,\(^{16}\) it’s unknown how their differing stances will play out. Perhaps it’s just a matter of time before an influential new entrant creates a fleet of hybrid electric and aviation fuel aircraft or drones to create a new mass-market air taxi service.

We believe the FAA will likely approve flight-sharing by 2025, along with strict security and compliance regulations. In response, many private pilots are likely to up-skill to attain commercial licenses.

Consumers accustomed to the sharing economy’s financial and environmental advantages are likely to drive strong growth in these services. While the sharing economy might grow saturated when it comes to car rental and lodging services, it should gain traction in air travel, fueled by younger millennial and Generation Z travelers.
Subscription-Based Aviation

The emergence of start-ups Surf Air and Airly signals the advent of subscription-based travel business models (see Figure 1). Frequent business travelers are the main target audience for these services, which charge monthly or annual fees for unlimited flights. California-based Surf Air opened several European routes in 2016, and Australian-based Airly (expected to launch this year) plans flight routes between Sydney and Melbourne.17

The advantages are obvious: While commercial carriers typically don’t know if a flight is going to be profitable until the airplane door closes, subscription-based services offer recurring revenue. “Because of subscriptions, we know exactly how much revenue we’re going to generate at the beginning of every month,” says Mac Kern, formerly vice-president of commercial planning at Surf Air. “So we can scale our operation effectively, because we know exactly how much flying we’re able to execute.” 18

Community building and networking among the frequent flyers who are subscription aviation’s primary target market could lead to new business models. Consumers might subscribe to “mobility packages” that allow them to, say, mix transportation modes, from road to air taxis, to flights and even hotel stays.

Component-centric travel purchasing will be obsolete by 2025. In its place, customers will expect personalized plans that combine air and surface travel, accommodations, food services and destination experiences. Airlines are increasingly exploring ownership of the entire travel journey, from booking travel tickets, to hotels, to destination activities. Will they emerge as new leaders in “mobility subscription”? Or will the new model be left to emerging businesses or partnerships?

Subscription Flying Services Take Off

<table>
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<th>Company</th>
<th>Launched</th>
<th>Own Aircraft?</th>
<th>Aircraft Type</th>
<th>Initial Sign-up Fee</th>
<th>Ongoing Subscription Fee (monthly)</th>
<th>Main Routes</th>
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<td>No</td>
<td>King Air 350 turboprop (8-seater)</td>
<td>$1,000</td>
<td>$2,550</td>
<td>Sydney (Bankstown). Melbourne (Essendon) and Canberra</td>
</tr>
</tbody>
</table>

Figure 1
In 2025, subscription-based air travel will likely outpace the sharing model. With subscription models, aviation retains the operational advantages of the standard commercial scenario and regulatory environment.

The Takeaway: Immediate Actions

Industry players will need to carefully monitor the impact of emerging business models by doing the following:

• **Monetize excess capacity.** Traditional travel businesses need to leverage the sharing economy with operating models that identify idle and excess capacity across networks. Is it possible to introduce last-day cash or reward-bidding for available seats? Is it feasible to allow social groups of friends to “share” available seats if someone in the group needs to cancel?

• **Explore the operational advantages of subscription travel.** In 2025, subscription-based air travel will likely outpace the sharing model. With subscription models, aviation retains the operational advantages of the standard commercial scenario and regulatory environment.

• **Consider bundles, a new twist on subscription models.** By 2025, subscription travel will likely extend to the entire travel journey. Annual bundles might offer, say, two all-inclusive holiday packages per year anywhere on the U.S. West Coast, including all transportation, lodging and entertainment needs. For incumbent carriers, subscription packages on busy routes could be an important market draw.

• **Develop cross-industry offers.** The travel sector is a natural to provide tour operator-like services. “Super packaging” could offer a new means of distribution and address issues such as commoditization, brand loyalty, service trust and convenience, while making “club rewards” increasingly important. Access to inventory and the ability to create unique customer services will be the keys to differentiation. Airlines are currently taking the lead in this area, but we envision the hotel sector will also offer end-to-end packages as the fight for owning the customer journey intensifies.

For incumbent carriers, subscription packages on busy routes could be an important market draw.
Companies around the world are developing technologies that will herald a new generation of multimodal transport networks, potentially changing the very nature of air travel as we know it. Ten years from now, we’re likely to see fierce competition across the transport system as a result of new travel entrants.

For example, Hyperloop is a proposed mode of passenger and freight transportation that would propel a pod-like vehicle through a reduced-pressure tube at speeds faster than air travel. Hyperloop can collapse large “air bridges” in much the same manner as high-speed rail. Its potential for covering long distances in a fraction of the time it takes today will make it a viable option for long-distance travel.

Hyperloop could cause a sharp drop-off in demand for short-haul flights. For example, while air travel time from Stockholm to Helsinki is 3.5 hours, advocates of Hyperloop say the tube-and-pod system could cover the same route by tunnel under the Baltic Sea in 28 minutes.

The hotel sector could experience a similar drop in demand as Hyperloop’s fast travel times eliminate the need for overnight stays.

**Aircraft: From Supersonic to Lightweight Hybrids**

Technology breakthroughs in aircraft are also changing how we fly. Colorado startup Boom is working closely with Virgin Group on a full production model of a supersonic jet it expects to have ready for passengers by 2020. Boom claims its plane will fly from New York to London in 3.5 hours - half the current average flight time. While ticket prices for British Airways’ Concorde topped out at $20,000 before BA retired the supersonic passenger jet in 2003, Boom says its carbon fiber technology allows up to 30% greater fuel efficiency than the Concorde and will keep its fares on par with current business class airfares.

If the cost of construction and ownership make it a viable, more competitive service, supersonic travel could become the airlines’ weapon against innovations such as Hyperloop. It’s unclear whether the fast aircraft will receive greater global acceptance than previous endeavors. The Airbus A380 was hailed as the future when it came into service but has struggled. It tops out at 560 mph and can cross the Atlantic in about seven hours, compared with the Concorde’s three. The question is whether a collective critical mass will come together to make this new supersonic platform work.

Another development is the emergence of super-fuel-efficient, ultra-long-haul aircrafts. Boeing and Airbus expect their extended-range aircrafts, the Airbus A350-900ULR and Boeing 777-8, will be available by 2020. Both wide-body jets appear capable of flying non-stop commercial flights for as long as 20 hours.
Companies around the world are developing technologies that will herald a new generation of multi-modal transport networks, potentially changing the very nature of air travel as we know it.
At the other end of the scale will be new-generation, light electric and hybrid planes that carry four to eight people. Airbus has demonstrated a two-seater electric aircraft, and larger prototypes are under development. With the acceptance of subscription and sharing models, these electric planes could potentially open a new market for air taxis to fly to and from small airfields.

**The Takeaway: Immediate Actions**

Travel companies must closely monitor these new modes of transport and respond swiftly. We suggest considering the following:

- **Consider whether to compete or complement.** Will incumbents challenge alternate modes of transport with direct competition, or partner with them in some way? The decision requires travel players to reassess their core competencies and target markets. A long-haul carrier that primarily flies transatlantic routes might prefer the economics of offering a service that complements Hyperloop’s shorter haul markets. On the other hand, a short-haul airline might conclude that going toe-to-toe with Hyperloop is the only feasible option. Partnership with Hyperloop service providers could involve providing feeder traffic to Hyperloop connections across water bodies.

- **Invest in technology upgrades.** Fleet and technology enhancements can help airlines challenge competing modes of transport. Ultra-long-range and supersonic aircraft adoption might provide a reliable defense against emerging modes of transport.

- **Revisit operational structures.** Some incumbents will require new hub-and-spoke strategies and network optimization. For example, ultra-long-haul aircraft have the potential to impact the Middle East as a connecting hub. As a result, airlines dependent on the hub-based models will need to rethink future network building. Airlines will have to set up new markets, routes and connections or enhance their network structure and own more hubs.

With the acceptance of subscription and sharing models, electric planes could potentially open a new market for air taxis to fly to and from small airfields.
Technology is a key enabler in reducing travel stress, from minimizing instances of lost luggage to speeding flight-delay response times. The emergence of new technologies such as Internet of Things (IoT) and identity tokens are set to reduce friction during the travel experience.

Come 2025, we envision travelers moving more easily through airports, making their way through speedy, hassle-free check-in and security processes to the departure gate.

IT investment is key. Airport CIOs’ top investment priorities are passenger processing (59%) and security (50%), according to the 2016 Airport IT Trends Survey. Fifty-eight percent of CIOs expect 2017 budgets to be higher than 2016.27

Emerging technologies are being adopted at a fast pace. Recognizing the need to improve security without compromising customer experience, more than half of airports (52%) expect to pilot biometric token identity management over the next 10 years to eliminate manual identity checks.

Automated Checkpoints
We envision airport checkpoints of 2025 to be fully automated, requiring minimal staff. Powered by intelligent and connected devices, the IoT will form a digital ecosystem that reshapes the traveler’s experience and offers new services.

London City Airport plans pioneering uses for IoT, including the installation of sensors and camera networks to monitor passenger volume and flow patterns within the airport terminal.28 The airport also uses custom GPS-, 3G- and Wi-Fi-enabled tracking devices to monitor the position and movement of equipment used to service flights, with the goal of speeding aircraft turnaround time.

London City is also using IoT for location-based passenger services, such as flight alerts and the ability to pre-order retail purchases and food and beverage services prior to airport arrival.

Stress-Free Travel, Tight Security
Security is the single greatest pain point in the airport processes, often leaving passengers feeling hassled, exposed and anxious. By 2025, security screenings will be seamless. The following new technologies will help airports create a stress-free experience for travelers while maintaining security standards.
• **Identity management.** As part of its Simplifying the Business (StB) program, IATA has launched several projects to transform and simplify the passenger journey.\(^{29}\) Its One Identity program lets passengers assert their identities online or in person and then secure the information, eliminating the need to provide the same data again at physical identity checkpoints. Single-travel tokens based on biometrics and stored using blockchain technology are another potential solution for identity management. Single tokens rely on two high-level concepts: The token can be validated and trusted, and is interoperable across borders. We anticipate increased security concerns around the world to fuel the growing acceptance of data sharing.

• **Facial recognition.** Advances in facial technology will help streamline security checks. London’s Gatwick Airport, for example, already uses the technology to keep security queue times below five minutes. Airport authorities combine facial data with expected traffic patterns to proactively open and close security lanes.\(^{30}\) The technology could also analyze facial expressions and body movements that suggest contraband or other security risks. London Heathrow and Amsterdam’s Schiphol are trialing self-service biometric passport gates that use facial recognition technology. By 2025, we believe facial recognition will eliminate the need for security queues and identity verification. Passengers will walk directly through terminals to the departure gates.

• **Molecular scanning.** Passenger screening processes could also be in for a makeover. U.S.-based Genia Photonics is developing a laser molecular scanner that it hopes will detect traces of explosives or drugs through clothing and other organic materials. The technology scans multiple people at once and works from a distance of 50 meters.\(^{31}\)

• **Robotics.** We envision robotics will power airport customer assistance by 2025, including 3-D multilingual hologram guides that answer travelers’ security and navigation questions. KLM, Japan Airlines, Glasgow Airport and Haneda Airport are investing in robots that can interact with customers.\(^{32}\)

Taiwanese airline EVA Air has introduced robotic customer service agents at Songshan and Taoyuan international airports. The robot scans boarding passes, provides destination weather updates and promotes duty-free offers. By 2025, more advanced artificial intelligence (AI) technologies will enable robots to scan and identify passengers based on online data. AI will also allow passengers’ health vitals to be scanned, predicting potential onboard health incidents. It is likely that AI-enabled robots will be able to recognize human emotions and respond accordingly, for example, noting anxious flyers.
Automation: New Efficiency for Operations

With automation set to transform the passenger experience, airport operations will undergo major changes. The role of ground staff will shift dramatically. Not only will reduced manual work require fewer staff, but the nature of the work will also transition from customer service to process administration. Staff roles will involve monitoring processes and systems to ensure optimal operation. Reskilling or hiring new personnel with relevant talent will be a must. The change management regarding new technologies and systems will affect all ground personnel, from check-in staff to TSA agents.

Increasingly, we see airports transforming from factory-like organizations, where passengers move from one process to the next, to destination models, where processes are quick and hassle-free, shifting the focus to elevating the guest experience. The new emphasis includes opportunities for personalized entertainment, shopping and dining. The airport-as-a-destination model can only succeed if the staff is adequately trained and processes are aligned to deliver personalized, seamless travel experiences.

The effect of faster check-in will also impact airport design. With fewer passengers on average at check-in bays, the areas can be redesigned as comfortable, hotel-like lobbies and lounges. Energy-efficient advances will reduce operational costs.

Finally, improved passenger management will likely lead to reduced bay fees by enabling airlines to more accurately predict flight and turnaround times, as well as aircraft bay time.

The Takeaway: Immediate Actions

How can organizations prepare for frictionless travel?

- **Team up.** Travel companies, airlines and airports must work together and invest jointly. Travel providers can more easily achieve cost efficiency and customer delight by collaborating to better understand emerging technologies such as IoT, biometric-based identity management, laser molecular passenger screening and robotic process automation. Etihad’s work with Abu Dhabi Airport Authority to build the new Midfield Terminal serves as a model for airline partnerships.33

- **Partner on data-sharing platforms:** Travel providers should create platforms that allow all airport players to plug in, share and consume data to provide superior customer experiences. The most comprehensive platforms will include retailers, hotels, security agencies, ground transportation and
parking services. The platforms will integrate with terminals and lanes for autonomous vehicles, as well as smart stores that dynamically interact with passengers on the ground or in the air.

- **Collaboration across borders:** To achieve the common goal of improving passenger experience and security, the aviation industry will need to partner with governments to develop synergy for cross-border security requirements and industry processes.

- **Train staff to better serve customers:** Airport automation will require redesigned service models and reskilled workers. Manual intervention will augment automated processes to ensure optimal service delivery and to manage situations that require human attention.

### Wave 6: Next-Generation Travel Customers

Managing customer demographics and attitudinal shifts will be a real challenge for travel providers in 2025, as well as creating the right products for each segment. Travel organizations need to be ready for several emerging groups:

- **Global citizens:** Globalization and hyper-connectivity continue to shape a new order in which mass movements form quickly. Borderless social networks make it easy for new pressure groups to assemble. By 2025, “globalisters” will be mainstream across all travel markets. They’re drawn to trusted brands with ethical purposes. Keeping people safe and protecting personal data is paramount to them. Engaging them will be essential for travel organizations.

- **Customers from new regions and demographics:** Asia will be a new battleground for airlines and other travel companies. While the global middle class is projected to increase to 3.2 billion by 2020

**Asia Rising**

Additional million on-demand passengers per year by 2034.

![Figure 2](source: IATA/Tourism Economics “Air Passenger Forecasts”)
and 4.9 billion by 2030, Asia will supply the majority of the growth, accounting for an astonishing 66% of the global middle class and 59% of middle-class consumption by 2030.\textsuperscript{34}

China, India and Indonesia will be among the top five passenger markets in terms of growth in 2034, IATA predicts (see Figure 2, previous page).\textsuperscript{35} And by 2025, China’s outbound travel spend will reach $255.4 billion, or nearly twice that of the U.S., according to a survey by Visa and Oxford Economics.\textsuperscript{36} Asia will become the next driver for global travel and will become increasingly difficult for travel brands to ignore.

The 2025 timeframe will also see the emergence of Generation Z travelers. Born in the mid-1990s through the early 2000s, these digital natives have grown up with access to data and information. They’re proficient in online research, and they rely on user-generated content to make decisions.\textsuperscript{37} For Gen Z, travel will be a life experience: A time to learn, socialize, discover and shape their identity.

With the ever decreasing attention spans that some attribute to rampant smartphone use,\textsuperscript{38} the basic requirements for persuading Gen Z travelers to book tours and travel experiences will be concise, spot-on initiatives, including visual marketing, personalized recommendations and speedy online booking systems.

• **Sustainability minded travelers**: By 2025, more travelers will be interested in the impact of their actions on the environment and in providers’ ability to conduct business in a sustainable manner. The sustainability segment’s willingness to pay a premium for environmentally-friendly options can open new revenue streams for travel providers, such as initiatives to offset carbon footprints (see Figure 3).
The Takeaway: Immediate Actions

The battle to own the customer relationship and build it on a global scale will result in few remaining megabrands by 2025. Consolidation in the airline and travel intermediary sector is on the rise as large brands acquire smaller competitors to achieve the agility and scale needed for global competition.

We recommend travel companies prepare now by doing the following:

- **Recognize the speed of technology development cycles.** Already adept users of technology, Gen Z and travelers from Asia will adopt new digital tools and services faster than ever. To attract their attention, travel companies must speed their technology development cycles and continuously invent new marketing strategies, channels and messages.

- **Fine-tune customer segmentation strategies.** Providers need to develop the ability to accurately identify new customer segments and implement closed-loop marketing technology to connect with and service them.

- **Encourage sustainability-minded travelers.** Travel businesses should proactively reach out to environmentally conscious travelers. For example, schools are increasingly organizing social responsibility trips to remote locations around the globe, and such trips are often the first short- or long-haul travel experience for this young segment. Businesses can work to create customized offerings to cultivate life-long relationships with these groups.

- **Develop and refine the organization’s Asia strategy.** The travel ecosystem must create well-defined, long-term business strategies for Asian travelers – or risk being displaced by indigenous competitors. Protectionism and regulatory structures in these geographies may prove challenging. A strategy of partnerships and joint ventures with local incumbents could be the best way forward.

- **Amp up the business’s social presence.** Gen Z and Asian travelers are among the largest users of social media. Businesses should use social media-centered marketing tools and techniques to appeal to them.

- **Update the organization’s CRM strategies.** Travel businesses should use demographic profiling to recognize new cohorts and create/adjust their persona-based customer relationship management strategy.

**WAVE 7 IMMERSIVE EXPERIENCES**

Virtual reality (VR) and augmented reality (AR) technologies will revamp the way we plan, purchase and experience travel. Airlines and travel industry players are already beginning to offer immersive, try-before-you-buy shopping experiences. Offering similarly engaging experiences across the Travel Ribbon™ can boost conversions and allow travel brands to interact with customers in new ways that drive brand loyalty.

VR is likely to completely disrupt travel planning and shopping in 2025, transporting customers virtually to any location in the world. The hospitality sector has already begun adopting VR technologies. Prospective guests at Best Western Hotels & Resorts can virtually view each property’s rooms, lobbies
and amenities. With Marriott’s Teleporter program, travelers step into a booth, slip on an Oculus Rift headset and enjoy a 4-D experience that promotes other locations.

Receptivity among Gen Z travelers to VR technology is another motivator for travel brands. Among 10- to 17-year-olds surveyed, two-thirds (64%) named a visit to another country as one of the activities they’d most like to do on a VR headset. The same number said they’d like to explore a place they could not go to in reality, according to a poll by Touchstone Research. By 2025, this customer segment is likely to make VR a mainstream shopping experience.

**Redefining Travel Planning and Research**

VR is likely to drastically redefine travel planning and research. We expect the purpose of physical travel outlets to shift from points of sale to VR-enabled “experience centers” that serve as destinations in themselves. High-definition displays and next-generation human-computer interfaces will offer rich, digital experiences for products and destinations.

Travel companies and tour operators are already working to revitalize retail portfolios by combining online and VR-based in-store experiences. Thomas Cook is launching “discovery” stores in which consumers can take VR tours of destinations, resorts and aircrafts. TUI Group’s Holiday Design Stores offer a digital experience that lets consumers elaborate on research conducted online.

VR may be a blessing in disguise for travel retailers. Travel agents can leverage their physical presence to create 4-D experience centers - and boost sales.

**We expect the purpose of physical travel outlets to shift from points of sale to VR-enabled “experience centers” that serve as destinations in themselves. High-definition displays and next-generation human-computer interfaces will offer rich, digital experiences for products and destinations.**
AI and bots will complement the VR experience. Powered with the knowledge of individual travelers’ likes and dislikes, AI-driven customer service representatives will deliver personalized content.
As VR goes mainstream, we see great potential for it to couple with other technologies. By pairing with AI and big data, for example, VR will enhance travel search with a palette of personalized samples. Because adding the fourth dimension to immersive content will enhance the shopping experience, VR makes a likely partner for “haptic technology,” which allows users to experience touch effects on digital devices. Prospective travelers might not only see the sights of being on a cruise-ship deck, but also feel the breeze and touch the railings.

AI and bots will similarly complement the VR experience. Powered with the knowledge of individual travelers’ likes and dislikes, AI-driven customer service representatives will deliver personalized content. Travel companies such as Skyscanner are already experimenting with AI and conversational bots.45

**VR at Every Stage of the Travel Journey**

VR will also go beyond destination content to offer details on airport lounges and even ground transportation so travelers can make the right choice for their needs.

Airlines have also started to test VR for in-flight entertainment. Passengers aboard flights for Dutch airline Transavia will soon be able to choose from a variety of virtual content, including cockpit tours and hang-glider rides.

AR is also gaining traction among consumers. Nearly two-thirds (61%) of consumers prefer to shop at stores that offer it, and four out of 10 would pay more for a product they could experience first through AR.46

Several travel companies are experimenting with AR apps that act as digital travel guides. Some apps offer “time travel” features that enable viewers to experience locations as they appeared in the past. By 2025, AR-enabled advertising is expected to grow into an important marketing channel for travel companies, with AR users potentially viewing destinations on, say, beach billboards that transmit details on travel and hotel options. Booking.com has introduced a pop-up feature that offers personalized recommendations for nearby attractions and ticket purchase options.

**Impact on People and Processes**

Within the existing customer engagement framework, VR adoption will require staff training and change management. The changes may challenge established operating models. For example, as VR-enabled customers gain access to more information, travel agents’ roles may shift from advisors to content curators who suggest personalized content for travelers.

Similarly, airport customer service and in-flight staff may need training in VR-based assistance, such as “VR therapy” for anxious fliers. No amount of infrastructure planning will successfully deliver immersive experiences unless staff is trained in and confident about VR’s role.

Like all content, VR apps will need to be created, curated and distributed. Travel companies will eventually need to choose whether to develop content in-house or to acquire it from producers. Current marketplaces for VR content include Veeah and VR app store WEARVR.

**Several travel companies are experimenting with AR apps that act as digital travel guides.**
Getting Your Organization Ready for VR/AR

Here are a few ways organizations can prepare for the changes immersive shopping will bring:

- **Identify the competitive advantages.** VR/AR technologies can improve conversion rates and marketing campaigns, as well as reduce long-term costs and increase the quality of operational training. It is incumbent on companies to identify the best-fit business cases for their organization and invest wisely. (For more on VR/AR, read our white paper “Disrupting Reality: Taking Virtual and Augmented Reality to the Enterprise.”)

- **Develop quick prototypes.** One of the keys to successful VR/AR adoption is to develop a small-scale implementation or prototype and test its impact. Businesses should identify a few use cases across business areas and then measure success before proceeding with a larger implementation.

- **Prepare for a smooth transition.** Even if VR/AR technologies aren’t on a travel business’s immediate horizon, it’s not too early to develop plans for how and where to integrate existing technologies with VR/AR. It will be crucial to inventory the types of training and reskilling employees will need to make the most of VR/AR.

- **Build out the physical infrastructure.** Travel brands will need to invest in building 4-D VR experience theaters, the physical establishments that would offer the immersive shopping experience. Omnichannel capabilities will be required to ensure consistency and continuity across online and offline experiences.

- **Choose a sourcing model for content.** A key decision for travel businesses will be whether to create, syndicate and distribute VR content in-house, or partner with third-party services to source 4-D content for immersive experiences.

### Wave 8: The Potency of Hyper-Personalization

At first glance, hyper-personalization is the most obvious disruptive wave. Digital capabilities make one-to-one communication possible, and travel is a highly personal business. Beneath the surface, however, the hyper-personalization trend raises much broader questions regarding data privacy, monetization and ownership. The questions will grow even more complex with the rise of online personal assistants.

**Digital Personal Assistants: On Every Smart Device**

With the billions of dollars invested, AI personal assistants will advance from nice-to-have smartphone features to essential roles for every smart device. They will also transition travelers from the current use of multiple websites and apps to a single point of contact backed by large amounts of customer data.

By 2025, digital personal assistants will be full-blown travel companions. Powered by advances in AI, the assistants will aggregate data from multiple touchpoints. They’ll conceptualize, create and execute everything from inspiration marketing and trip planning to post-purchase interactions. They’ll also be fully cognizant of customers’ Code Halos, the swirl of data created by digital transactions and interactions involving people, processes, devices and organizations.
In 2025, brands will be able to identify, analyze and predict individual customer needs. No two consumers will be offered the same product.

The best personal assistants will be able to construct customers’ travel experiences with minimal customer input. Headed to the airport? Your personal assistant will let you know how much time to allow for the drive, which security lanes are moving fastest and the best cafe to grab a coffee. It will also alert you to who in your network is in town and events that might be of interest. Encounter a disruption on your trip? Your personal assistant will respond in real time by booking you at your favorite hotel.

“I Tweet, Therefore I Am”

In 2025, brands will be able to identify, analyze and predict individual customer needs. No two consumers will be offered the same product. This laser-like focus requires sophisticated use of big data analytics. Worth $122 billion in 2015, the market for big data analytics will grow to $187 billion by 2019, according to IDC. At the same time, new data virtualization technologies will reduce data use and storage costs and also combine with blockchain to enable greater audit of records.

Let’s Get Personal: Trust and Data Privacy

Ownership of data has become a subject of hot debate. With the heightened awareness of the value of personal data, companies are eager to obtain it – and consumers increasingly reluctant to trust companies with it and to donate it for free.

Who owns consumer data? Plenty of consumers say they do. Google Cross Media Panel and social networking app Raptr attempted to capitalize on the trend by rewarding customers with incentives in return for access to their browsing habits. Personal data marketplaces take a different approach. They encourage consumers to control use of their data – and suggest what to get in exchange for it. Start-ups include CTRLio in the UK and U.S.-based Datacoup.

But the cash-for-data model raises issues. Monetization could lead to hidden data, on either the consumer or retailer side, which could lead to negative behaviors and legal complications. For example, consumers could be restricted to accessing certain discounts or required to pay more for goods because they didn’t furnish their personal data.
Data Privacy and the Impact of Europe’s GDPR

For consumers, the conflict is escalating between their desire for personalization and their privacy concerns. The European Union is addressing the issue with wide-ranging new data privacy regulations that go into effect May 2018. At the heart of the new policy, called the General Data Protection Regulation (GDPR), is the concept of permission-based, two-way conversation and data exchange between a company and its consumers. All data is to be secure and used only by the company for its intended purpose.

Data currently makes many stops along the travel journey. Consider a simple business trip. A corporate travel management company might book the travel. Flight changes might be made through an outsourced call center, referencing the traveler’s corporate credit card. Hotel upgrades are secured using loyalty points.

Multiple organizations touch the data. Whom do they share it with? What level of personal data do they hold? Who is responsible for data that’s stolen or misused?

The GDPR applies to any company that provides services to or employs EU citizens and impacts all major global travel providers.

The Takeaway: Immediate Actions

Hyper-personalization and the growing monetization of consumer data will require travel service providers to develop AI capabilities, as well as the ecosystems that connect partners and suppliers.

It will require access to customer Code Halos and the ability to generate relevant insights and the natural language processing (NLP) capabilities found in AI systems such as Apple's Siri, Amazon’s Echo (Alexa) and Google’s Home.

Here are steps travel organizations can take:

- **Aggregate and analyze Code Halos.** Meeting travelers’ 2025 expectations for hyper-personalized travel will require companies to analyze consumers’ digital footprints and predict their needs. The key will be to create virtual customer personas through data aggregation from travel partners and other customer data repositories such as financial institutions and telecom service providers.

- **Develop a privacy strategy and viewpoint.** It's important to address privacy concerns in tandem with personalization initiatives. While permission-based personalization requires a data strategy and architecture, it also requires travel companies to adhere to legislation such as GDPR.

- **Expand data-related leadership.** By 2025, the roles of chief data officers and scientists will have evolved from generating real-time consumer insights to auditing data-use compliance and serving as custodians of consumer trust. Compliance requires organizations to be highly proficient in customer data management. To remain on the right side of the law, they need a 360-degree view of customer data as well as explicit agreements with consumers on how the data is used.
FOOTNOTES

13. As a distributed public ledger system, blockchain records and validates every transaction made, which makes it secure and reliable. All transactions are authorized by miners, which makes the transactions immutable and safe from hacking. Blockchain technology discards the need for a third-party or central authority for peer-to-peer transactions.


31. Ibid.


39. Travel Ribbon®: A tool to assist airlines and other industry players in broadening their thinking about when and how to engage with customers. We define eight essential stages of the overall travel experience: inspiration, planning, booking, purchase, pre-trip, departure, in-flight and post-trip.


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