WIRED BRAND LAB + DEEM 2021 TRAVEL TRENDS REPORT

THE TECHNOLOGY RESHAPING TRAVEL

PRODUCED BY
WIRED BRAND LAB AND CONDÉ NAST TRAVELER FOR DEEM

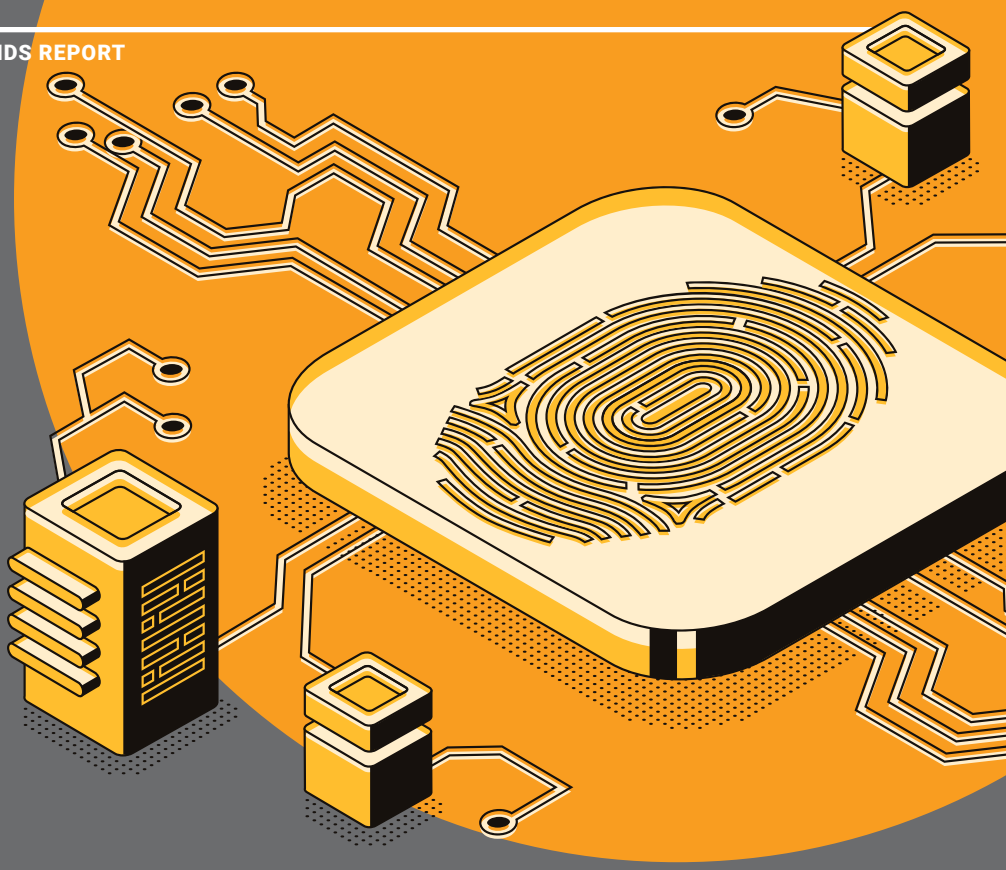
From seat-back airplane phones to robot concierges, the travel world has always been quick to adopt new technologies. But the rush to innovate is accelerating like never before as business and leisure travelers look to a post-COVID-19 world. Here are the top innovations in travel technology and what they mean for the future.

1 Biometric Identifiers

THE INNOVATION

In 2018, Atlanta's Hartsfield Jackson International became the first airport in the United States to enable passengers to pass from curb to gate using only biometric technology—machines that scan physical characteristics, such as irises or fingerprints, to digitally identify a person. Biometric identifiers have since taken off, in large part because they increase the speed of the security process. The United States' Travel Security Administration (TSA) and Customs and Border Protection agency are increasingly turning to facial-recognition systems to confirm who travelers are and to make the screening process more efficient. In 2019, the company Clear began offering face and iris scanning in select airports—streamlining travel for time-pressed corporate travelers.

Currently, these programs are opt-in, and usually fee based, so travelers need to sign up in advance. Yet because the technologies are far more accurate and efficient than scanning documents—and add space between security officials and travelers—they're sure to expand. One day they may even be mandatory, although security concerns about the government keeping databases of biometrics could slow adoption. Airlines such as Delta and JetBlue are already experimenting with biometrics to speed up bag check and boarding, and business travelers can expect to encounter the technologies at conferences and other events.

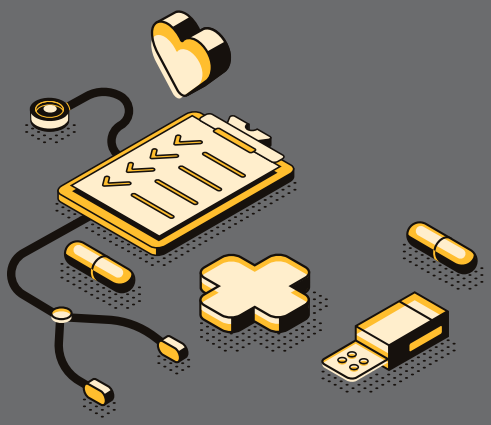


WHAT IT MEANS FOR THE FUTURE

- Full rollout of biometric technologies in airports will take years, but the global facial-recognition market is forecast to be worth $6.5 billion in 2021, and grow at an annual rate near 20 percent. The tech will expand fast enough that soon you may no longer need a hard-copy ID when traveling.
- As the technologies improve, there'll be a shift to in-motion biometrics, which can identify travelers without requiring the use of physical gates or security checkpoints. Similar to express toll systems on highways, they'll provide faster and more frictionless airport screening.
- Looking ahead, the main hang-up isn't the technology but the privacy concerns surrounding it. To use biometric identifiers as a form of ID, the government and private companies will need to retain some quantity of personal information, which could be exposed in a data breach or otherwise used for unauthorized purposes. If employees travel for work and biometric data is required to fly, their employer may need that info to book flights, too, adding another layer of complication. Needless to say, these are fraught issues with no simple solutions. But as the details get worked out, the technology will become commonplace.

2 Health Certificates

THE INNOVATION



In 2011, TSA launched PreCheck, which, in addition to streamlining security, enabled travelers to automatically notify airlines of preexisting medical conditions. Now, in the wake of COVID-19, countries are taking it further by requiring travelers to show proof of immunization or a recent negative test. A few companies, including the United Kingdom's VST Enterprises and CommonPass, are making the process more efficient by offering digital certificates (VST calls its version the V-Health Passport). Currently, there's no standard fit-to-fly certificate, so travelers can expect to continue filling out forms in most cases. But with the technology moving quickly and destinations anxious to figure out new ways to welcome visitors, that could change rapidly.

WHAT IT MEANS FOR THE FUTURE

- Travel overseas requires a passport and, for many countries, proof of a negative COVID-19 test. As vaccines roll out, many will also mandate some form of digital certification ensuring travelers have been vaccinated. In the future, this could expand to include immunization and disease records—a proposition discussed by some countries since the beginning of the pandemic. The certificates would serve as a digital health history that immigration officials and governments could use to accept or reject travelers and more closely monitor outbreaks.

- In 2020, Clear launched its Health Pass, which enables companies to check the well-being of employees—for instance, using screening machines at office entrances to scan for symptoms like high temperature. The process is also being offered in the service industry—restaurants, hotels, event centers. Due to the pandemic, health checkpoints may become common, especially while traveling.

- As with biometric data, a major issue with health passes concerns privacy, and that will need to be addressed before officials can require more than a COVID-19 test result or vaccination forms.

3

Robot Concierges

THE INNOVATION

In 2018, FRAnny, a robot concierge capable of speaking 35 languages, was installed in Germany's Frankfurt Airport to help passengers navigate the terminals. Supported by artificial intelligence and a cloud-based voice user interface, FRAnny led the way for smart robots to aid and assist travelers—a trend that will continue. Now hotel chains are exploring using robots to clean rooms, answer questions, and check-in guests. The Sheraton Los Angeles San Gabriel is already using robotic carts to carry guests' bags to their rooms and deliver room service.

WHAT IT MEANS FOR THE FUTURE

- After COVID-19, hotel chains will strive to make checking in as seamless and contact-free as possible. In the short term, that may mean doing so via a touchscreen. In the future, things could get more Jetsons-like: A robot scans your face to confirm your reservation, collects your bags, and checks you into your room in one fell swoop.

- Business travelers attending conferences can expect to see increased rollout of disinfecting robots like those from UVD Robots. The company offers a self-driving machine that emits a high-intensity ultraviolet light to kill airborne pathogens. (Imagine an oversize Roomba with vertical tube lights protruding from its base.) It was designed with hospitals in mind, but Key West International Airport already has one roaming its terminal. And the robots will likely become more popular with airports, hotels, and conference centers as a quicker, more effective way to sanitize spaces. In the future, these machines may be deployed in offices, stores, subway stations, and other high-traffic areas with elevated risk of virus transmission.

- At the 2019 Consumer Electronics Show, Misty Robotics debuted a concierge template for its Misty II, a toylike robot based on open-source code that can be programmed for various tasks. The template offers a starting point for hotels or convention centers, for example, to use Misty II to welcome visitors and answer basic questions. The robot can also be programmed to handle reservations, operate a point-of-sale system, or call for assistance. Other companies have developed similar robots, and as capabilities increase, travelers will almost certainly encounter them more frequently.

4 Wearables

THE INNOVATION

Currently, wearable technology ranges from smartwatches and fitness trackers to clothes embedded with hardware that can recharge a cell phone, monitor health, or play music. This is set to become a massive industry, with the market expected to increase from $27 billion in 2019 to $64 billion by 2024. In recent years, the travel industry has capitalized on these innovations in novel ways. In 2014, the Westin hotel chain partnered with tech company Lark to bring its Heavenly sleep system to hotels. Guests put on Lark's watches, had their sleep patterns examined overnight, and awoke to gentle vibrations and a summary of their habits, all intended to help them sleep more soundly—like getting advice from a virtual sleep coach. Disney Resorts has experimented with wristbands instead of hotel room keys to open doors, serve as passes for rides in its theme parks, and provide an easy way to pay for food and merchandise. Meanwhile, smartwatches have become nearly as advanced as smartphones, opening up all sorts of possibilities.

In the wake of COVID-19, these innovations are being harnessed in new ways. For example, wearable Bluetooth and GPS-enabled devices that are popular at conferences for navigating convention floors are being used to monitor health vitals, alert people if others come too close while social-distancing restrictions are in effect, and automatically open doors at hotels, helping to limit the spread of pathogens.

WHAT IT MEANS FOR THE FUTURE

- As travel returns in 2021, many countries are considering mandates for international visitors to use wearables to help contain the spread of COVID-19. Hong Kong and South Korea issued wristbands to track travelers' movements to ensure quarantine compliance, and other destinations including Hawaii are considering similar devices. BioIntelliSense has even developed a quarter-size BioButton that adheres to a person's chest to transmit data like temperature and heart and respiratory rate—key metrics when monitoring for possible COVID-19 symptoms. The device was designed primarily for work and school settings, but something similar could show up at hotels and conferences soon.

- Beyond just transmitting information, wearables tracking health stats will one day store medical records that can be accessed while traveling. Records could be automatically called up as you navigate security, board your flight, and check into your hotel. They can even share information with ride-hailing services like Lyft, ensuring that drivers and passengers alike remain healthy by barring entry to those with symptoms. As always, privacy and security concerns may delay (or even scuttle) rollout of some of these innovations, but many of them are feasible now.

- Already, some hotels are offering wristbands that guests can use as room keys and to pay for drinks or dinner. Among corporate travelers, these same wristbands may become commonplace at conferences, letting attendees enter events, pay bills, and seamlessly share contact information with a quick sync of the bands. The tech has already been used by some event organizers, like Northstar Meeting Group, to help attendees maintain social distance—reminding people with a little buzz if they wander too close to one another.

5 Smartphones

THE INNOVATION

Hotels, airlines, and other travel companies have long piggybacked on smartphone technology to offer better service—most famously the mobile boarding pass. And today, with smartphones as central to travelers as luggage, the innovations will only accelerate. In the hotel world, Marriot and Virgin already allow guests to check in and unlock their rooms via smartphone apps. Peninsula Hotels has a PenChat e-concierge service with 24-hour instant messaging, so you can connect directly to the hotel's staff to reserve a table for dinner or request a wake-up call just by texting. Apps like Venmo allow travelers to pay bills and track business expenses. And LoungeBuddy can tell you which lounges you can access at specific airports. There's almost nothing a smartphone can't do for you on the road. But many of the most novel things will be the simplest, like serving as your key for everything from your hotel room to your rental car.

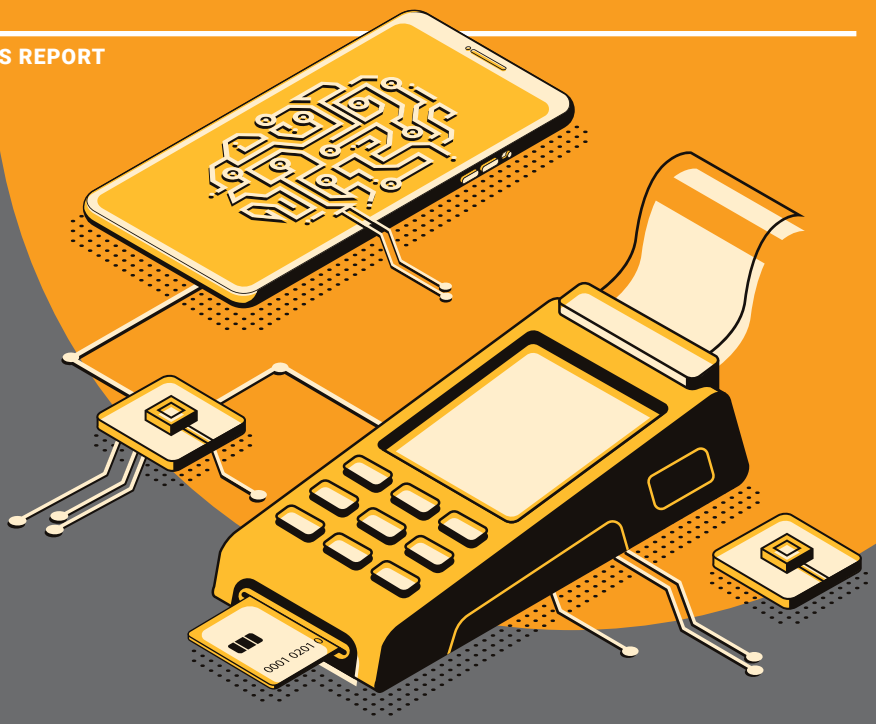
WHAT IT MEANS FOR THE FUTURE

- Instead of hotel key cards, you'll use your phone to unlock your room. Paired with Internet of Things (IoT) technology, which embeds connectivity in everyday devices, your phone will connect to and control everything from the lights to the air-conditioning, and even set the coffee machine for the morning.

- Car rental companies, from Enterprise Rent-A-Car to National Car Rental, already have mobile apps that streamline booking and pickup. Soon you'll be able to use the app to find your car, unlock the doors, and start the engine. Tech-forward rental companies like Virtuo and the peer-to-peer MoboKey already offer these features, and it won't be long before bigger players incorporate them, too.

- Immigration agencies across the globe are testing so-called mobile passports, which enable travelers to speed through the customs process by holding their phone to a screen, bypassing the need for paper forms. In the U.S., Airside Mobile's passport app and the CLEAR Pass for CBP Mobile Passport Control app are accepted at more than two dozen airports. In the near future, the process could be fully optimized for travel, with a simple phone scan expediting arrival abroad or back home, making laminated passports a thing of the past.

6 Digital Payment & Cashless Transactions



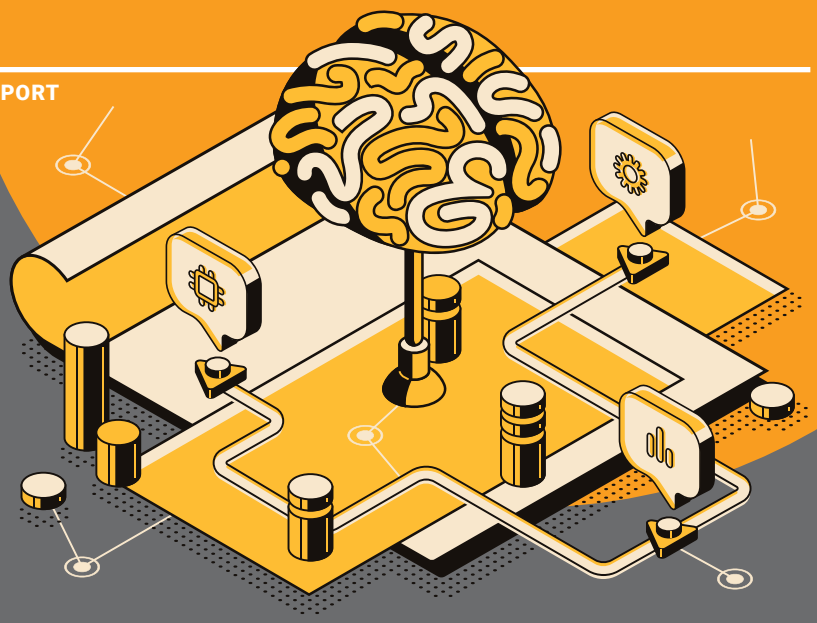
THE INNOVATION

Cashless payment has been part of the travel world since the inception of credit cards. But now, the rush is on for better digital payment methods and adoption of digital currencies, especially in the corporate travel world. One contactless method that's becoming increasingly popular is virtual cards. They enable company travel managers to place a specific amount of money in a onetime account on an employee's smartphone. The digital receipts go back to the company in real-time, allowing it to track an employee's spending and set limits on food and drink. In April, Visa's payment network started providing this type of service to a number of its customers through payments vendor Conferma Pay. And as cryptocurrencies become more widely adopted, payment apps will arise to support these transactions, bypassing the need for currency exchange when traveling abroad.

WHAT IT MEANS FOR THE FUTURE

- For corporate travelers, smartphones are now the preferred way for companies and employees to keep track of expenses, with apps that automatically categorize expense details when receipts are scanned—instead of travelers having to handle, store, and submit paper reports.
- As mobile payments become more ubiquitous through services like Apple Pay and Venmo, companies will be able to track and reimburse employees' travel expenses in real-time.
- Virtual expense cards are also becoming extremely popular with companies and travel managers. The cards, like those provided by Conferma Pay, can be generated automatically when a travel manager books a business trip, with specific limitations built in. For example, if a traveler books a flight from Los Angeles to Paris with an overnight layover in New York, the system can recognize the stay and automatically generate an allowance specific to those cities, transferring funds directly to the traveler's mobile device.
- Last year, Expedia launched a partnership with Travala.com, a cryptocurrency-friendly accommodation-booking platform, to offer payment via 30 forms of cryptocurrency to more than 700,000 of Expedia Group's hotels. Travala.com enables flight booking via cryptocurrency, too. And as crypto becomes more popular, travelers could soon use it for meals, car rentals, and even tours.

7 Big Data & Artificial Intelligence



THE INNOVATION

With the rise of AI, the travel industry—from airlines and hotels to destinations' visitors' bureaus—is increasingly using data to anticipate boom and bust cycles. As travelers use mobile devices to book trips, find and unlock rental cars, and access hotel rooms, hospitality companies are deploying AI to parse the influx of data, find new ways to improve customer experience, and boost efficiency. This will enable them to make seamless back-end adjustments, such as maintaining staff levels, while offering travelers last-minute deals and other incentives during slow periods. Dynamic pricing can also be a money saver for hotels, travelers, and companies.

When it comes to business travelers and other frequent fliers, companies will soon be able to adjust a client's preferences without asking or even entering anything manually. The computer will simply ascertain that a client, say, prefers street views from their room and book accordingly, making the entire process more personalized and efficient. These advances will get a boost as more data is put to use by AI-powered systems.

WHAT IT MEANS FOR THE FUTURE

- Hotel companies will increasingly use chat bots, powered by AI, to help customers with reservations and check-in. Holiday Inn is working with Bespoke, a customer engagement platform for the travel and hospitality industry that can communicate in near real-time and learn to provide better service as it goes. As the technology improves and is paired with other advances, such as robots and facial-recognition programs, the industry may soon see robotic bellhops that can check in guests and make restaurant reservations simply by asking them. Many booking companies have developed chat bots that can answer a range of questions: *What's the baggage allowance for my flight? Where is the nearest business lounge? How long will it take to get to the airport?*

- Predictive-analytics companies will also save travelers money. Hopper, which uses this type of data science to help leisure travelers find the cheapest flights, is a good example. It may suggest waiting to book a flight or reconsidering a travel date. In the future, these services could be used for hotel reservations.

- As more data gets fed into AI-powered machines, programs will increasingly predict—and solve—travel disruptions. One example is the 4site platform, an automated trip-management tool built by Cornerstone Information Systems that offers optimized disruption management. If there's a snowstorm at your destination, and all flights are redirected while in the air, a smart assistant could automatically book a later flight to your destination. With previous data from the user, it could also reserve a hotel room, should an overnight stay be required, based on preferences. Then it can book another flight for the morning—all before everyone else knows their travel plans are about to be disrupted.