

**WORLD
TRAVEL &
TOURISM
COUNCIL**

SEAMLESS TRAVELLER JOURNEY SITUATION REPORT

MARCH 2019

SEAMLESS TRAVELLER JOURNEY SITUATION REPORT

For more information, please contact:
HELENA BONONI | Industry Affairs Director
helena.bononi@wttc.org

WTTC MEMBERS HAVE IDENTIFIED SECURITY AND TRAVEL FACILITATION AS A TOP PRIORITY.

Travel & Tourism continues to grow faster than the world economy, with more people travelling than ever before. Travel & Tourism currently employs one in ten people on the planet, over 300 million people. By 2029, 100 million more jobs will depend on the sector, representing 1 in 9 jobs around the world. At the same time, according to IATA, the number of air travellers is expected to double from 4.4 billion in 2018 to 8.2 billion by 2037.

The need to increase capacity to fulfil this demand, and the absolute requirement for security processes to be as robust as possible means that a global, cross-industry solution which allows more people to travel more securely is urgently required in order to enable this economic opportunity.

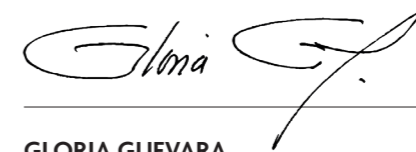
WTTC is addressing this challenge through our Seamless Traveller Journey Programme which is an ambitious initiative to bring together public and private sectors with technology providers to agree on models which are globally interoperable, technology agnostic and cover the end-to-end journey from booking, through air travel and incorporating cruise, hotel, car rental and other non-air products where necessary.

A solution can only be achieved by working collaboratively across national boundaries and in partnership between private companies and governments. Over the past year we have consulted with over 200 stakeholders in order to map existing initiatives and begin to develop a roadmap to take the initiative forward. What has become clear from our work so far is that there is no 'one size fits all' solution.

This briefing shares an update on the work done to date by WTTC and sets out an overview of the multiple initiatives which are already underway, so that stakeholders can better understand the current situation as it relates to the testing and implementation of elements of a Seamless Traveller Journey.

Input from all WTTC Members is needed to move faster to drive this mission forward, and I appreciate, in advance, your support.

Thank you,



GLORIA GUEVARA

President & CEO
World Travel & Tourism Council

CONTENTS

PART I: WTTC APPROACH

INTRODUCTION	1
THE SEAMLESS TRAVELLER JOURNEY	2
– PROGRESS IN 2018	
A COLLABORATIVE APPROACH	3
– WORKING WITH IATA	
– ENGAGING WITH GOVERNMENTS	
CURRENT STATUS	4
OVERVIEW OF EMERGING MODELS TO ADDRESS THE END-TO-END TRAVELLER JOURNEY	4
NEXT STEPS	5

PART II: TOWARDS A SEAMLESS TRAVELLER JOURNEY: CHALLENGES & OPPORTUNITES

KEY THEMES EMERGING	7
BUILDING ON CURRENT MOMENTUM: MOVING TO PHASE 2	9

PART III: EXAMPLES OF CURRENT INITIATIVES IN THE PUBLIC AND PRIVATE SECTORS

DOCUMENTS & DIGITAL IDENTITIES	10
GOVERNMENT PROGRAMMES / GLOBAL BORDERS	11
INTERNATIONAL ORGANISATIONS & INDUSTRY ASSOCIATIONS INITIATIVES	13
PRIVATE/PUBLIC SECTOR INITIATIVES	14



PART I: WTTC APPROACH

INTRODUCTION

Travel & Tourism is set to grow considerably over the coming years. However, current infrastructure, processes and systems are insufficient to meet this expected demand. Capacity gaps across countries and regions worldwide have been identified and, even with current improvements and plans underway, there is insufficient investment in new infrastructure required to address these gaps. In addition, ever-evolving geopolitical risks require improved security and border control capabilities and processes, which creates additional infrastructure and investment burdens on already strained systems and budgets.

Biometric technology is emerging as a solution to these challenges, providing efficiencies within the system which unlock capacity while ensuring security is at the heart of the travel process. We are already seeing some airlines and cruise lines boarding passengers with facial recognition only; there are many different initiatives underway or being trialled around the world. The opportunity now is to align these initiatives and technologies in such a way as the end-to-end journey, from booking to air travel to hotel, cruise and car rental, can be seamless as far as security and identification is concerned.

With the vast majority of travellers being low risk, this will allow the governments to maximise resources and focus on the small minority of high-risk travellers. This will enhance security across the whole system, ease capacity constraints, improve the traveller experience and ensure that the economic potential of Travel & Tourism to create jobs can be fully realised.

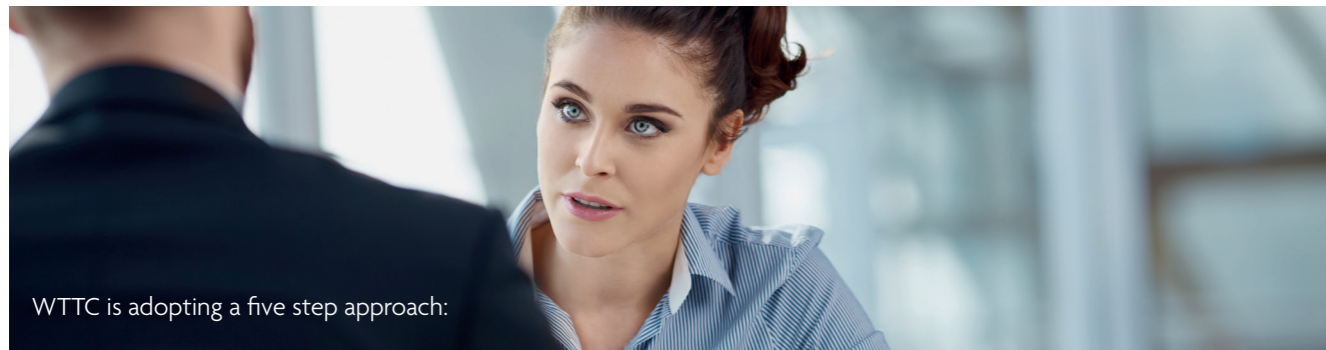
A Seamless Traveller Journey is one in which travellers will no longer have to repeatedly present travel documents, boarding passes and booking confirmations to multiple stakeholders at different stages of their journey. Instead they will be able to book transportation, check-in, proceed through security, cross borders, board aircraft, collect baggage, rent a car, check in and out of hotels, and access myriad destination services, simply by confirming their identity and booking data. By capturing and uploading biometric and biographic data prior to travel, border agencies will be able to check entitlement and pre-clear travellers electronically in advance of arrival, thus reducing cumbersome checks and queues at ports and airports.



SEAMLESS TRAVELLER JOURNEY: THE VISION

WTTC's Seamless Traveller Journey Programme will, through broad consultation across stakeholders, align the industry around the models which will allow biometrics to be captured following recommended processes at the early stages of travel and shared across industry and government entities as necessary to ensure a seamless end-to-end journey which enhances security and improves the traveller experience.

Many different stakeholders are set to benefit from a Seamless Traveller Journey. The Travel & Tourism sector will be able to maximise capacity through efficiency, resulting in more travellers. Governments will achieve increased security. Travellers will enjoy an improved experience.



Progress in 2018

WTTC launched the Seamless Traveller Journey (STJ) programme in 2018. Our process is based on collaboration and, as the representative body for the global Travel & Tourism private sector, including all industries and geographies, with more than 170 leading companies in the world as Members, WTTC is in a unique position to establish a unified voice to engage with governments around the world.

In 2018, WTTC brought together more than 200 travel industry, technology, and government leaders in a series of workshops to drive forward this initiative. Efforts have been focused on understanding, documenting and finding solutions across the sector to implement biometrics and other processes or technologies to facilitate seamless travel.

WTTC is committed to working with the existing initiatives – much work has been done and there are many initiatives being tested in this area to encourage the use of biometric technology and digital identity throughout the wider Travel & Tourism sector.

We have identified 53 implementations and trials around the world in 6 regions.

A COLLABORATIVE APPROACH

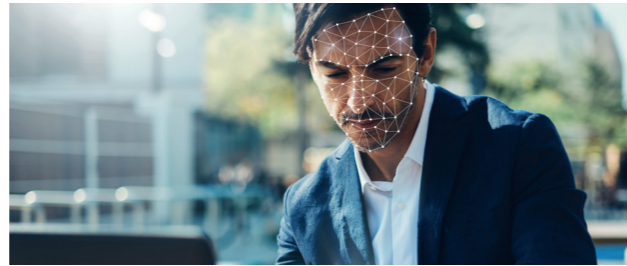
The STJ programme builds on the efforts underway with organisations such as the International Air Transport Association (IATA), the International Border Management and Technologies Association (IBMATA), International Civil Aviation Organization (ICAO), Airports Council International (ACI), Cruise Lines International Association (CLIA) and the World Economic Forum (WEF) as well as independent efforts by airlines, airports and governments, such as the United States Customs and Border Protection (CBP) with whom we have announced a partnership.

Working with IATA

WTTC and IATA agreed to work together for Seamless Passenger and better Traveller Experience. IATA, on behalf of its member airlines, is promoting the One ID initiative. IATA's vision of an "end-to-end passenger experience that is secure, seamless, and efficient" which aims at offering passengers a frictionless airport process allowing the possibility to walk through the airport without breaking stride while WTTC expands the concept to the entire traveller journey. Both organisations are facilitating progress through representation and integration of industry stakeholders, strong relationships with technology partners and connections with governments to advocate for regulatory and legislative changes as well as develop standards required for interoperability.

Engaging with governments

WTTC has engaged with Australia, China, Canada, the United Kingdom, Aruba, the European Commission and the United States on the potential job creation which technologies, such as biometrics will generate. The focus continues on top countries and regions.



CURRENT STATUS

There are approximately 53 biometrics related initiatives identified to date, that can be defined by three categories: those which are government driven (13), those which are government and private sector driven (26) and those which are private sector driven (14).

There are mainly two biometrics matching types, which fulfil two distinct functions, identification and authentication.

Identification answers the question “Who are you?”. In this case, the person is identified as one among a group of others (1:N matching). Example: U.S. CBP Traveller Verification Service (TVS).

Authentication answers the question: “Are you really who you say you are?”. In this case, biometrics allows the identity of a person to be certified by comparing the data that they provide with pre-recorded data for the person they claim to be (1:1 matching).

OVERVIEW OF EMERGING MODELS TO ADDRESS THE END-TO-END TRAVELLER JOURNEY

There are two concepts for data storage: This digital identity lives indefinitely or for the life of a travel document (e.g. passport) and contains traveller data which is verified in multiple trips (Per Life) or the traveller creates a single journey token, which only lasts for the duration of a journey and may contain key biographic and biometric data (Per Trip).

The research, consultations and workshops have identified three emerging models which, if adopted according to which is most suitable to local requirements and legislation, can begin to provide a path forward to address these challenges. They are:

1. Government Facilitated:

The government collects and verifies facial and finger biometric data as required by law and stores this data in central databases indefinitely. This example requires no enrolment on the part of the traveller. The government acts as an identity management service provider by providing an Identity as a Service (IDaaS) platform for travel providers. U.S. Custom and Border Protection’s Traveller Verification Service (TVS) best exemplifies this concept, as seen through its pilots with various airlines and airports, including Delta Air Lines (Biometric Terminal at Hartsfield-Jackson Atlanta International Airport), Los Angeles International Airport, and others. The UAE also has a model in which traveller finger and iris biometrics are captured in advance by the government and used to facilitate travellers at border control journey points.

2. Per Trip:

The traveller creates a single journey token in advance of travel via a mobile device or in person at check-in. This token only lasts for the duration of a journey and contains key biographic and biometric data. An orchestration platform houses and maintains this token for the duration of the journey. Aruba Happy Flow and Heathrow Airport are prime examples of this concept, in which a single journey token created at the beginning of a journey can be used by a traveller at multiple touchpoints across the airport ecosystem.

3. Per Life:

The traveller enrolls once to create a digital identity using an identity management app on their mobile device. This digital identity lives indefinitely or for the life of a travel document (e.g. passport) and contains any data a traveller chooses, which is verified using mobile eVerification or in person verification. A traveller pushes data on a “need to know” or “authorised to know” basis to a given stakeholder in advance of travel, through a technology like a distributed ledger. While this example demonstrates private sector



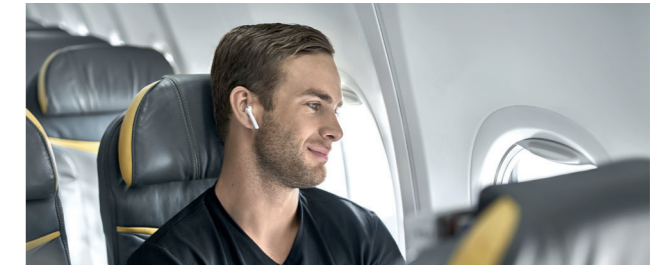
driven efforts, it still supports interfacing to government-specific touchpoints and requires use of government-issued documents. AirAsia’s Fast Airport Clearance Experience System (FACES) exemplifies this concept, with a current emphasis on facial recognition for boarding (though FACES stores the traveller’s digital identity in a cloud solution for multiple trips, until a traveller has to renew their passport).

Despite the significant and impactful progress demonstrated by these examples, WTTC has identified several challenges that will need to be reconciled to create an interoperable, technology agnostic end-to-end traveller journey, including:

1. Infeasibility of supporting only one of the above example categories due to variations in regulatory and implementation requirements by geography.
2. Lack of integration currently to stakeholders outside the “air ecosystem” – these examples primarily exhibit collaboration between airlines, airports, border agencies, security officials, and technology partners

Nonetheless, following several interactions with STJ Stakeholders, WTTC has identified and received consensus on a number of next steps that will support the realisation of key STJ objectives – interoperable, end-to-end examples that can be integrated across geographies – including:

1. Identifying opportunities to integrate the government driven example with the other two categories of examples.
2. Continuation of close collaboration with industry partners already undertaking biometric data and passenger facilitation initiatives (including IATA’s OneID initiative) to identify opportunities to integrate other providers across the end-to-end journey – including car rental, hotel and cruise – with current industry efforts.



NEXT STEPS

WTTC’s work continues in 2019 with a special Advisory Council established to support the STJ, technical working groups, and potential pilots to advance the development of the programme. We will further develop an updated perspective on proposed end-to-end examples and collaborate with stakeholders and partners – including IATA – to identify opportunities to pilot specific parts of the finalised proposed models.

The opportunities also include the concept for travel communications to be interactive, real time and highly personalised, starting at booking and continuing throughout the end-to-end journey including air, cruise, car, hotel and potentially rail. Notifications across providers could occur if passengers provide consent for selected subscriptions in their chosen application.

Through our work with Members and partners we are uncovering and exploring potential end-to-end emerging models. Through discussion groups and expert validation from 3 perspectives: technology, data privacy and border management, WTTC will identify best approaches for the industry, and report its findings in a recommendation report with a set of guidelines and best practices, as well as proof of concept. Supported data will be used to engage governments towards faster and more effective implementation.

WTTC’s vision of a Seamless Traveller Journey can only be achieved by working collaboratively across national boundaries and in partnership. It is crucial for leaders to assign a team member to work with us on the Seamless Traveller Journey Programme, in order to prove the concept and to quantify the benefits of the harmonised approach for the end-to-end process and data flow.

PART 2: TOWARDS A SEAMLESS TRAVELLER JOURNEY

CHALLENGES & OPPORTUNITIES

1. KEY THEMES EMERGING

Over the course of 2018, consultations and workshops were held around the world including over 200 stakeholders. The key themes emerging were as follows:

Technology/solution coverage and investment: To date, most biometric solutions have been spearheaded independently or in partnerships between technology companies, airlines and airports. While these efforts have produced biometric solutions ranging from biometric bag drop to eGate solutions, many efforts are still in a pilot phase or provide overlapping capabilities. New initiatives have showcased more integrated experiences within airport environments impacting several steps within the airport experience, and in some cases broad deployment across an airport terminal.

Other industry segments are progressing at a slower pace: hotels and car rentals have currently deployed limited use cases for biometric solutions. Cruise lines depend on border agencies to deliver biometric initiatives, and other segments (e.g. travel companies, OTAs, retail) have yet to fully explore the potential of biometric solutions.

WTTC's consultations show that while the technology exists to enable biometric capabilities at touchpoints across the traveller journey, regulatory and legislative constraints across geographies and the lack of a sufficient trust framework among travel providers and governments are two key inhibitors to enabling broad adoption and effective deployment of biometric solutions.

Data capture, authentication and reuse: While traveller identification, document verification & authentication still occur upon arrival at a travel port or first physical touch point outside aviation, capturing data at early stages such as advanced check-in processes or pre-registration alternatives have emerged as an important consideration to expand the boundaries outside of the physical travel infrastructure. Biometric traveller identification has become increasingly prevalent at touchpoints across the traveller journey such as at baggage drop, boarding, kiosk and eGates for immigration control or even access to airport lounges. Smartphone APPs are enabling travellers to manage their identity and the sharing of data with travel providers throughout the journey.

Although traveller adoption of biometric solutions remains a moderate challenge, increased education and awareness will engender interest for travellers as well as comfort amongst providers in using biometric technology.

Data management: Recent developments in data privacy legislation, particularly the advent of the General Data Protection Regulation (GDPR) in the European Union (EU), are overwhelmingly shaping data management approaches and pose important implementation considerations for global biometric initiatives and solutions. An emerging opportunity is on decentralising data storage and ensuring data is stored on a "per trip" basis except for specific use cases (e.g. biometrics tied to "frequent flier" programs).

In implementing biometric technology, it will be necessary to ensure "privacy by design" as well as proper management of traveller data that adheres to the principles for data privacy under GDPR. As such, data sharing is now focusing on an emerging notion of data exchange on a "need to know" or "authorised to know" basis. One method focuses on governments / other central stakeholders providing mandated traveller data to travel providers. Another method takes a more decentralised approach, in which the traveller dictates which travel providers are permitted to have access to their data (unless mandated by government). In this case, the digital wallet concept is emerging as a potential method to share a traveller's documents, data, and biometrics in a secure, decentralised manner.

Two main challenges continue to limit further abilities to share data more broadly across the traveller journey. First, disparate data and document requirements by geography and other regulatory constraints remain key inhibitors to the further sharing and reuse of data. Second, travel providers "downstream" in the traveller journey (e.g. hotels, car rental) underscored the

ongoing challenge of accessing traveller data in advance due to the current non-existent data sharing frameworks between “upstream” and “downstream” travel providers; a digital wallet concept could help address this gap in creating a seamless traveller journey.

Documents & Digital Identities:

Since the introduction of its Traveller Identification Programme (TRIP), the International Civil Aviation Organization (ICAO) has expanded its mandate to ensure a more holistic and coordinated approach to traveller identification across the entire document and border control management system. To realise this strategy, ICAO has continued to advance the ePassport – which contains an added layer of security by embedding an electronic chip in the passport that stores biometric information – as a key means to facilitate a higher level of traveller identification and verification. In addition, ICAO is developing policies and standards for a “Digital Travel Credential” (DTC), a form of digital identity that can be derived from existing government credentials, such as the ePassport.

At the same time, governments worldwide are rapidly evolving national identity documents and driver’s licences to have functionality to allow for stronger document verification and traveller authentication: hard copies increasingly contain microprocessors and store biometric information, and national eID programmes allow for mobile-based identity management and biometric storage.

Government & Global Borders:

In recent years, governments worldwide have been actively deploying biometric technologies to enhance security and to allow for seamless traveller facilitation at their borders. Many countries have implemented programmes that leverage risk-based differentiation to facilitate low risk travellers and allocate resources to higher threats – such as, Global Entry in the US and EasyPass in Germany.

Advances in facial recognition technology have enabled border agencies to match live images to passports and government databases with high accuracy and a low level of intrusion. This has led to an explosion of eGates and kiosks around the world for specified traveller segments including “own nationals”, “low risk nationals”, and “registered travellers”. The introduction of the “electronic travel authority”, the “e visa” and the “digital travel credential” present border agencies with significant opportunities to enhance seamless travel on entry and exit for even more traveller segments, without compromising security.

International Organisations, Industry Associations & Public-Private Collaboration:

International organisations, governments, and private sector companies have made considerable strides in recent years to advocate for, invest in, and pilot biometric and other seamless travel initiatives across the traveller journey.

- ICAO’s Traveller Identification Programme (TRIP), through the specifications developed for ePassports and the ICAO model developed for the Digital Travel Credential (DTC), provide the governance basis for identification management, earlier traveller identity validation and controlled distribution to stakeholders on a “need to know” or “authorised to know” basis in line with its mandate. ICAO and the International Organization for Standardization (ISO), are currently developing specifications for the DTC model. The DTC model and corresponding specifications will support industry initiatives such as the IATA’s OneID initiative aiming at significantly transform the international traveller experience by leveraging off the technologies provided by the ePassport.
- The World Economic Forum’s Known Traveller Digital Identity (KTDI) initiative focuses on leveraging a decentralised, interoperable and secure platform that allows travellers to be stewards of their own identity information, while enabling government officials and law enforcement authorities to request accurate and verified information about travellers far enough in advance to make more efficient decisions about admissibility and security risk.
- Airports Council International (ACI) and IATA’s New Experience Travel Technologies (NEXTT) examines opportunities for advanced processing technology and data usage to improve operations and the traveller experience throughout the traveller journey.

Public and private sector collaborations have also taken hold around the world. Collaborative efforts between Aruba, Aruba International Airport, the Netherlands, KLM and the Schiphol Group created Aruba Happy Flow which resulted in streamlined traveller processing, a pre-clearance border control process between the Americas and the EU-Schengen area, and ultimately an improved traveller experience. Airline efforts have ranged from AirAsia’s Fast Airport Clearance Experience System (FACES) for expedited boarding for pre-registered travellers through Senai International Airport in Malaysia; British Airways implementation and testing of biometric boarding gates across the US; and Emirates’ “biometric path” at Dubai International Airport, an integrated biometric experience across all airport touchpoints.

Similarly, leading airports have pursued and implemented a number of unique biometric-related initiatives aimed to streamline airport operations, increase security across all touchpoints, and better facilitate and service travellers. For instance, Delta Air Lines created the first “biometric terminal” at Hartsfield-Jackson Atlanta International Airport (ATL), in which travellers are seamlessly recognised at key touchpoints within ATL’s Concourse F using their facial biometrics. London Heathrow Airport (LHR) has made investments to expand facial biometric recognition technology beyond current airport touchpoints. Airports including Los Angeles International Airport (LAX) and Dallas Fort Worth International Airport (DFW) are heavily investing in more gates that leverage US Customs and Border Protection (CBP) Traveller Verification Service (TVS) to verify travellers during boarding.

2. BUILDING ON CURRENT MOMENTUM: MOVING TO PHASE 2

Biometrics are taking hold in the airport and airline environment driven originally by the need to improve safety, security, and facilitation. Initial efforts have required government and border protection agency involvement, and technology solutions and processes for verification and authentication have therefore heavily involved governments. Airlines have further built on these government efforts by partnering with airports and government agencies to develop biometrics initiatives that are within the airport envelope, such as bag drop and aircraft boarding.

Current efforts are being designed and developed with airport and airline requirements and needs in mind, with most traveller involvement occurring primarily within the airport environment including registration and deployment of biometrics technologies.

With this context in mind, several questions emerge for STJ Phase 2:

1. How do non-airport travel providers interested in leveraging biometrics gain access to traveller information that already exists without duplicating efforts and adding further burden on travellers?
2. In order to streamline the further development and deployment of biometrics throughout the travel journey and enable cross-industry interoperability, what minimum data and document requirements are required by journey stakeholders?
3. How can travellers gain ownership and control of their digital identity and choose with whom and when to share it across their travels (including providers outside the airport ecosystem)? What are the best solutions to store the traveller biometrics data and for how long?
4. How can current efforts be leveraged to take the friction out of the travel experience across the entire journey? What opportunities are there to connect various regional models and initiatives in order to create cross-border, traveller journey collaboration, which are data privacy compliant and trusted?

WTTC’s STJ Programme builds on the innovative initiatives that already exist, and which continue to be further developed, by ensuring that all travel providers and their data and business requirements are incorporated and addressed.

PART 3: EXAMPLES OF CURRENT INITIATIVES IN THE PUBLIC AND PRIVATE SECTORS

DOCUMENTS & DIGITAL IDENTITIES

Electronic Passports (ePassports)	<ul style="list-style-type: none"> The ePassport chip contains a country specific digital security feature allowing border control authorities to confirm: <ol style="list-style-type: none"> The ePassport held by the traveller was issued by the right country. The biographic and biometric information endorsed in the document at issuance has not been altered. The electronic information on the chip is not a copy (i.e. a clone). Digital security features (digital signatures) are unique to each country and can be verified using their respective certificates. ICAO created the Public Key Directory (PKD) to facilitate the sharing of information between ICAO Member States. The ICAO PKD is a centralised directory that offers an independent, organised, secure and cost-effective online source for up-to-date information from participating ICAO Member States. Some facts on ICAO PKD: <ul style="list-style-type: none"> There are 800M+ ePassports (approximately 90% of all passports) in circulation. There are 62 countries that participate in the ICAO PKD. 114 out of 192 ICAO Member States issue ePassports.
National Identity Documents and Driver's Licence	<ul style="list-style-type: none"> National identity documents and other documents, like driver's licence, have undergone a huge transformation, from simple paper documents to electronic identity cards that contain a microprocessor for stronger document verification and online authentication and signature. A number of these new electronic national identity documents also store biometric information and adhere to ICAO standards, including data structures that can be read in some countries using Automated Border Control (ABC) gates. New national eID programmes (including card & mobile-based schemes) have increased in prevalence, many of which include biometrics, primarily through fingerprints. According to Acuity Market Intelligence, there are over 130 countries worldwide with national eID programmes, with the number of eID cards in circulation expected to reach 3.6 billion by 2021. <ul style="list-style-type: none"> India: In 2016, India's Aadhaar biometric identity system surpassed the 1 billion user mark. The government announced an initiative called Digi Yatra, which aims to minimise paperwork for air travel through a digital system which will process a passenger's Aadhar number & allow travellers to use their cell phone to board their flight. France: In early 2018, France announced its national eID scheme for a fall 2019 launch. Canada: Canada is progressing with its federal digital identity scheme, Pan-Canadian Trust Framework, piloted by the Digital Identity & Authentication Council of Canada.
Standards for Digital Identity	<ul style="list-style-type: none"> The ICAO 9303 New Technology Working Group (NTWG) is defining policies and standards for a "digital travel credential" (DTC) that could be derived from an already issued government credential, such as the electronic passport.

GOVERNMENT PROGRAMMES

Governments around the world have adopted biometric systems, particularly for border entry – aiming to increase security while speeding up entry for frequent and low risk travellers.

Examples:	<ul style="list-style-type: none"> Global Entry (USA) SENTRI (USA) Nexus (USA, Canada) EasyPass (Germany) Registered Traveller Service (UK) Smartgate (Australia) Smartgate (United Arab Emirates) APEC Business Travel Card Viajero Confiable (Mexico) Singapore US Travel Agreement Privium / Flux (Netherlands) Smart Departure (Hong Kong SAR, China)
-----------	---

GLOBAL BORDERS

United States of America (US)	<ul style="list-style-type: none"> US citizens are not required to provide biometrics at the US Border, only a valid passport with a digital photograph. US citizens may choose to enrol in a "registered traveller" program (e.g. Global Entry) which enables faster passage using kiosks to scan a traveller's fingerprints and capture their facial image. "Non-visa" visitors require an ESTA to travel to the US and must register fingerprints and facial image on first arrival. Returning ESTA holders may enter via kiosks and experience a more cursory inspection. "Visa nationals" must present to a US visa enrolment centre prior to travel, to register fingerprints and facial image. Biometrics are verified on arrival. US Office of Biometric Identity Management (OBIM) has amassed a database of over 800 million biometrics (mainly face and finger) and US Customer and Border Protection (CBP) is now testing facial matching systems at exit control against a subset of the government library to deliver biometric exit at airports. To increase security, the US Congress passed legislation that added biometric requirements for tracking travellers. In June 2018, CBP announced a biometric entry-exit system using facial recognition technology at Orlando International Airport, Florida's busiest airport. Facial biometric capture cameras have been installed at departure gates without altering airport physical infrastructure. The facial recognition verification process takes less than two seconds, has a 99% matching rate, and seamlessly integrates into the airport boarding process. In November 2018, Delta Air Lines launched the first biometric terminal in the United States at the Maynard H. Jackson International Terminal in Atlanta (Terminal F), deployed in partnership with the CBP, Hartsfield-Jackson Atlanta International Airport and TSA. TSA Facial recognition technology has been deployed throughout Terminal F to provide customers flying directly to international destinations on Delta, Aeromexico, Air France, KLM or Virgin Atlantic Airways with a seamless curb-to-gate travel experience. Customers have the option to use facial recognition to check in at self-service kiosks, drop off checked baggage, serve as identification at a TSA checkpoint, board their flight at any gate in the terminal, and, for international travellers arriving in the US to be processed by CBP.
-------------------------------	---

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">European Union (EU)</p>	<ul style="list-style-type: none"> The EU contains within its external borders and internal “free movement zone” known as “Schengen”. The EU “Schengen Zone” comprises a group of EU countries who require examination only at the point of entry and exit to the zone. Schengen has its own visa system (VIS) for third country (non-EU) visa visitors. EU countries not in the Schengen Zone (e.g. the UK and Ireland) still require border checks on EU nationals but leave to enter is not required; third country nationals (TCN's) require leave to enter. EU nationals entering and leaving the EU do not require visas or ETA and may use eGates if they are over the age of 12 and hold a biometric passport. “Non-visa” visitors currently do not require an ETA to enter the EU, but this will change in 2021 with the introduction of the European Travel Information and Authorization System (ETIAS). Latest indicators suggest that ETIAS holders will be required to register biometrics (face and finger) on first entry to the Schengen Zone (similar to US travellers). Visa nationals will need to present to an EU enrolment station to pre-register biometrics (face and finger) prior to travel. The EU is introducing a biometric entry / exit system for TCNs in 2020, using face and finger.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Australia</p>	<ul style="list-style-type: none"> Australia has a universal ETA / visa requirement for all TCNs (other than NZ) which requires registration prior to travel. Biometrics (face and finger) are registered in advance (for visa nationals) or on arrival (for non-visa nationals). Australia is testing “seamless traveller” first for “own nationals” by uploading its library of Australian passport photos to the cloud, for access by facial matching upon entry and exit. Australia intends to broaden the scope of “seamless travellers” to up to 90% of international travellers by 2020.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Dubai</p>	<ul style="list-style-type: none"> Dubai / UAE offers smart gate access to nationals and residents of the UAE. Passage on arrival is delivered by presenting passport or identity card to a smart gate and using finger scan technology to match the traveller to the card. Dubai is also testing a seamless traveller tunnel for selected pre-registered travellers. Passengers pass through a tunnel displaying moving images (such as fish), which capture the traveller’s attention. A series of 3D cameras embedded in the tunnel capture live images of the passenger’s face for comparison with the digital library without any need to stop and show a passport to an officer or a kiosk.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">UK</p>	<ul style="list-style-type: none"> The UK moves more passengers through eGates than any other country in the world. Currently “UK citizens” and “EU / EEA” nationals over the age of 12 who hold biometric passports may use UK eGates on arrival at the UK Border. The UK now allows frequent travellers of over forty “non-visa” countries to register to use eGates. Visa nationals must present to a UK visa enrolment station prior to travel to register biometrics. Fingerprints are verified on arrival. In December 2018 the UK government published an immigration white paper announcing that after the UK leaves the EU all passengers apart from UK and Irish citizens will require a “digital permission” to enter the UK.

INTERNATIONAL ORGANISATIONS & INDUSTRY ASSOCIATIONS INITIATIVES

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">ICAO Traveller Identification Programme (TRIP)</p>	<ul style="list-style-type: none"> ICAO’s TRIP Strategy, which aims to achieve a holistic, coherent, coordinated approach to traveller identification management, integrates: Evidence of identity: Credible evidence of identity, involving the tracing, linkage and verification of identity against breeder documents to ensure the authenticity of identity. Machine Readable Travel Documents (MRTDs): The design and manufacture of standardised MRTDs, including ePassports, that comply with ICAO specifications. Document issuance and control: Processes and protocols for document issuance by appropriate authorities to authorised holders, and controls to prevent theft, tampering and loss. Inspection systems and tools: Inspection systems and tools for the efficient and secure reading and verification of MRTDs, including use of the ICAO PKD. Interoperable applications: Globally interoperable applications and protocols that provide for timely, secure and reliable linkage of MRTDs and their holders to available and relevant data in the course of inspection operations.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">World Economic Forum – Known Traveller Digital Identity (KTDI)</p>	<ul style="list-style-type: none"> The Known Traveller Digital Identity (KTDI) is a multi-stakeholder initiative bringing together the public and private sector. The KTDI details the opportunity for all stakeholders to reform the way in which they securely and seamlessly facilitate travellers across international borders. It aims to enable government officials and law enforcement authorities to access accurate and verified information about travellers far enough in advance so that they can make more efficient and better decisions about admissibility and security risk. The KTDI concept relies on a decentralised, interoperable and highly secure platform which enables travellers to be the stewards of their own identities, deciding when and where they share which information and with whom. Through an opt-in system, travellers can prove their identities faster, earlier and with far greater certainty than is possible with current means. While the platform is enabled by advanced technologies, including cryptography, biometrics and distributed ledger, it is the new forms of governance and public-private collaboration that will ultimately determine the success of the KTDI. When aviation security and border security officials receive a more detailed, verified picture of travellers who are entering their country, they are able to make individualised risks assessments, and process the large majority of passengers that are considered low-risk far more quickly, through expedited channels. This provides officials with far more time to focus on identifying and mitigating higher risks. Utilising the same detailed, verified information about the traveller will allow airlines, airports and all other participating industry partners to better personalise the journey for their customers, while improving security in their operations too.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">International Air Transport Association (IATA) – One ID</p>	<ul style="list-style-type: none"> IATA’s One ID initiative seeks to introduce a collaborative identity management solution that spans all process steps and stakeholders in the journey related to air travel: from booking to arrival at the destination and back, while ensuring the traveller remains at the centre of the experience. The concept relies on early validation of the passenger’s identity and controlled access to this information by the various public and private stakeholders on an authorised-to-know basis. The passenger can then be biometrically recognised and attended to in the most efficient way. One ID brings airlines, airports, governments, service providers and other partners together to establish a common vision and roadmap for robust and efficient identity management across the end-to-end traveller journey related to air travel. The main objective is to achieve harmonisation and interoperability, while ensuring the concept delivers a more secure, seamless and efficient experience.

New Experience Travel Technologies (Nextt)	<ul style="list-style-type: none"> Airports Council International (ACI) and the International Air Transport Association (IATA) launched a joint initiative known as the New Experience Travel Technologies (NEXTT), which focuses on advanced processing technologies (tracking, identification, robotics & automation) and the use of data for predictive modelling and AI for real time decision-making. This initiative focuses on: <ul style="list-style-type: none"> Luggage: Convenient and hassle-free handling and tracking of baggage for passengers Passengers: A seamless, secure and efficient walking pace journey that is highly personalised throughout. Cargo: Efficient operations and modern technologies to support easier, faster and smarter movement of cargo. Operations: New processes and technologies for aircraft turnaround, including delivery of services and supplies to the aircraft, apron and taxiway management.
---	---

PRIVATE/PUBLIC SECTOR INITIATIVES

Aruba Happy Flow	<ul style="list-style-type: none"> Developed as a collaborative effort between Aruba, the Aruba International Airport, the Netherlands, KLM, the Schiphol Group and Vision-Box™, Aruba Happy Flow has been piloted at Aruba International Airport for the past two years, with the objective of streamlining traveller processing and improve the traveller experience; while testing the first pre-clearance border control process from the Americas to the EU-Schengen area. This full end-to-end solution consists of a streamlined sequence of user-centric self-service touchpoints, from check-in to boarding the aircraft. With the Happy Flow, passengers are only required to show their passport once, at check-in, when they enrol their biometric data. After that, at all touchpoints, the traveller’s facial image is the identification token. This initiative required redesign of check-in, enrolment, bag drop, IASA Border, Aruba Airport security, administrative processes and staff training. These changes have achieved a 94% retention of Happy Flow users, with 70% of passengers per flight using Happy Flow. The initiative has led to efficiency gains at security, bag drop, border and boarding processes.
Airasia	<ul style="list-style-type: none"> Fully owned and operated by AirAsia, FACES is Malaysia’s first airport facial recognition system with self-boarding gates. The system uses facial recognition technology to identify enrolled travellers as they approach the automated boarding gates, allowing them to board their flight without having to present any travel documents. FACES is available at Senai International Airport, Johor Bahru. To date, about 73,000 travellers have enrolled in FACES. Enrolment increased by an average of 8,000 travellers per month between its launch in February 2018 and June 2018, to about 12,000 travellers per month. AirAsia is now working on further developing and refining the technology for implementation across all airports in Malaysia.
British Airways	<ul style="list-style-type: none"> British Airways has been expanding its biometric boarding gate tests in the US. Travellers are no longer required to produce their boarding pass and their passport at self-service boarding gates; instead, they simply look into a camera, wait for their biometric data to be checked against their passport, visa, or immigration photos, and then walk onto the plane once their identity has been verified. The self-service gates are being tested in Los Angeles, Orlando (for travellers flying to Gatwick), New York’s JFK airport, and Miami (for travellers flying to Heathrow). Passengers still produce their boarding pass and passport when going through check-in and security, but the biometric boarding gates eliminate the need to use the documents when boarding. British Airways indicates that in LA the gates have allowed 400 passengers to board in 22 minutes, enabling savings.

Emirates	<ul style="list-style-type: none"> Since 2015, Emirates has been developing the “biometric path” at its Dubai International Airport hub. “Biometric path” leverages facial and iris recognition technologies to enable a traveller to seamlessly pass through airport checkpoints – specifically check-in, immigrations, lounge access and boarding. As of October 2018, the “biometric path” is in advanced stages of biometric technology implementation at key touchpoints, with the programme testing already in “live status” and trials beginning for the Smart Tunnel immigration touchpoint. The Smart Tunnel is the world’s first immigration control tunnel, in which travellers are processed by immigration authorities – without human intervention or the need for a passport stamp – as they walk through the tunnel. Travellers wishing to participate in the trial must consent and submit their iris and facial biometrics to the General Directorate of Residence and Foreigners Affairs in Dubai (GDRFA).
Dallas Fort Worth International Airport (DFW)	<ul style="list-style-type: none"> Dallas Fort Worth International (DFW) Airport has placed significant emphasis on the integration of personal touchpoints through technology to enhance the customer experience, working with airline partners, concessionaires and government agencies. As part of the immigration & customs process, DFW has developed a strong relationship with US CBP which has facilitated many opportunities to innovate arrivals and departures immigration processes, including the introduction of Automated Passport Control in the Arrivals Hall. DFW and CBP are currently in the testing phase for new facial recognition technology in DFW’s primary international terminal. DFW is also planning to integrate as many as 75 gates with facial recognition hardware. DFW is taking the international exit scanners one step further in collaboration with CBP, by installing new systems and reconfiguring the Arrivals Hall to provide the best customer experience possible. DFW is currently working with British Airways, Japan Airlines and CBP to integrate the two-step process of checking boarding passes and passport verification.
Sydney Airport (SYD)	<ul style="list-style-type: none"> Sydney airport is conducting a facial recognition processing trial at its international terminal T1, which will allow the airport to further improve the traveller experience. The touchpoints being trialed include check-in, bag drop, lounge entry and boarding. The ultimate vision is for a true couch-to-gate experience that includes mobile check-in and passport control, which would reduce the need for physical infrastructure and enable a more seamless and convenient experience.
Los Angeles International Airport (LAX)	<ul style="list-style-type: none"> In late 2017, LAX partnered with Vision-Box to implement self-boarding eGates for travellers departing for international destinations. Like other US airports with eGates, Vision-Box’s solution leverages CBP’s Traveller Verification Service (TVS) to provide the verification match of a traveller’s facial image captured at the eGate. Throughout 2018, several airlines including British Airways and Lufthansa have leveraged this infrastructure for their customers departing to international destinations. In December 2018, American Airlines announced a biometric boarding pilot at Terminal 4, using facial biometric recognition technology provided by its partner, Gemalto, and leveraging CBP’s TVS for traveller verification. LAX has partnered with TSA to test facial recognition at security touchpoints for international travellers, using CBP’s systems and technology to verify identity and reduce the need for physical documents.

Delta Air Lines & Hartsfield-Jackson Atlanta International Airport (ATL)	<ul style="list-style-type: none"> • Since October 2018, Delta Air Lines has been building the first “biometric terminal” at Concourse F of its Hartsfield-Jackson Atlanta International Airport hub. As of December 2018, Delta passengers have been able to use facial recognition technology from “curb to gate”. • To enable this experience, Delta has partnered with CBP to leverage CBP’s TVS in creating photo galleries of Delta travellers based on flight manifests for international flights departing from Concourse F. These galleries are used to compare against a traveller’s facial image captured at any touchpoint and verify the traveller – with the captured facial image sent securely in an encrypted, sanitised manner. From a customer experience perspective, participating travellers can approach key touchpoints – check-in kiosks, check-in counters, TSA security, and boarding gates – have their facial images captured and near instantaneously receive verification and indication to proceed. • Delta has observed opt-in and participation from 98% of its passengers travelling through Concourse F each week. Furthermore, Delta estimates that these biometric capabilities save on average two seconds at boarding per traveller or approximately nine minutes when boarding a wide body aircraft.
London Heathrow (LHR)	<ul style="list-style-type: none"> • In 2018, London Heathrow Airport embarked on an initiative to expand its current facial recognition technologies for biometric verification beyond current touchpoints – domestic boarding gates and border control – to the broader end-to-end airport ecosystem including bag drop, security and international boarding gates. Heathrow has been operating a biometric system for approximately 10 years and with the airline community has been trialling the expansion of this system to new touchpoints throughout 2018 and plans for a wider roll out during 2019. This is part of a £50m investment in biometric technology and Heathrow plans to have one of the world’s largest deployment of biometrically enabled products. Heathrow estimates end-to-end time savings of up to a third and IATA estimates that roughly two-thirds of travellers would be willing to share biometric data in exchange for a more seamless journey.

Participating Organisations

- | | | |
|---|--|--|
| 1. Acuant Inc. | 21. Hilton Worldwide | 42. Transportation Security Administration |
| 2. AirAsia | 22. Hotel Beds Group | 43. Travel Daily China |
| 3. Airports Council International | 23. Hyatt Hotels Corporation | 44. Travel Leaders |
| 4. Amadeus IT Group | 24. International Air Transport Association | 45. Travelport International |
| 5. American Airlines | 25. IBM | 46. Turkish Airlines |
| 6. American Express Global Business Travel | 26. Idemia | 47. Unisys |
| 7. Avis Budget Group | 27. International Federation for IT and Travel & Tourism | 48. United Airlines |
| 8. Carlson Wagonlit Travel | 28. International Airlines Group | 49. US Customs and Border Protection |
| 9. Carnival Corporation | 29. JetBlue | 50. Value Retail |
| 10. Clear | 30. Journera | 51. VFS Global |
| 11. Cruise Lines International Association | 31. KLM Royal Dutch Airlines | 52. Virtuoso |
| 12. Dallas Fort Worth International Airport | 32. Mastercard | 53. Visa |
| 13. Denver Airport | 33. MSC Cruises | 54. Vision Box |
| 14. Dufry AG | 34. NH Hotel Group | 55. World Economic Forum |
| 15. Emirates Group | 35. Open Travel Alliance | 56. World Tourism Organization |
| 16. Etihad Aviation Group | 36. Rajah Travel Corporation | 57. WorldReach Software Corporation |
| 17. Europamundo Vacaciones | 37. Royal Caribbean Cruises Ltd. | |
| 18. Google Inc. | 38. Sabre Corporation | |
| 19. Greater Toronto Airport Authority | 39. SITA | |
| 20. Heathrow Airport | 40. The Hertz Corporation | |
| | 41. The Travel Corporation | |

ACKNOWLEDGEMENTS

WTTC would like to acknowledge these individuals for their contribution to this report

JUERGEN KEITEL, Global Affairs & Development - AirAsia
SHASHA RIDZAM, Global Affairs and Policy - AirAsia
HARVEY TATE, Adam Rouncivell, Digital Business Transformation - International Airlines Group
JEAN-SEBASTIEN PARD, Manager, Facilitation and IT - Airports Council International (ACI)
ISABELLE MOELLER, Chief Executive at Biometrics Institute - Biometrics Institute
MANUEL CANINO, Senior Manager, Security Policy - Carnival Cruises
HOWARD KASS, SVP Corporate Affairs - CLEAR
MICHAEL HARDIN, Director, Entry/Exit Policy and Planning, Office of Field Operations - Customs and Border Protection
JULIO BADIN, Senior Vice President, Customer Experience - Dallas Fort Worth International Airport
ROB BROERE, VP – ORE – Industry Change | Industry Change | Operations Research & Effectiveness - Emirates
ANNET STEENBERGEN, Advisor Happy Flow & Pre-clearance - Government of Aruba
JONAS NEIHARDT, Senior Vice President, Government Affairs at Hilton - Hilton
AMANDINE THOMAS, Project Manager, OneID - International Air Transport Association (IATA)
TONY SMITH, Chairman - International Border Management and Technologies Association (IBMATA)
NARJESS ABDENNEBI, Chief Facilitation Section - International Civil Aviation Organization (ICAO)
RICK OPDAM, Information Manager - KLM
SIMON WILCOX, Programme Manager Automation - London Heathrow Airport (LHR)
JUSTIN ERBACCI, Chief Innovation & Commercial Strategy Officer - Los Angeles International Airport (LAX)
HEIDRUN HOLIN, Programme Manager - Lufthansa
DAN JOHNSON, VP Digital Identity, Cyber & Intelligence Solutions - Mastercard
CHARLES WALTON, SVP Digital Identity, Enterprise Security Solutions - Mastercard
FRANCISCO JAVIER MARMOL, VP Experience and Quality, Marketing Dept - NH Hotels
SHERRY STEIN, Technology Strategy, Americas - SITA
LISA AIRTH, Project Manager, Terminal Design and Planning - Sydney Airport (SYD)
RICHARD CAMMAN, Vice-president Business Innovation - Vision Box
LAUREN UPPINK, Head of Aviation, Travel and Tourism Industries - World Economic Forum (WEF)
GORDON WILSON, President - WorldReach Software



WTTC is the body which represents the Travel & Tourism private sector globally. Members consist of CEOs of the world's Travel & Tourism companies, destinations, and industry organisations engaging with Travel & Tourism. WTTC has a history of 25 years of research to quantify the economic impact of the sector in 185 countries. Travel & Tourism is a key driver for investment and economic growth globally. The sector contributes US\$8.3 trillion or 10.4% of global GDP, and accounts for 313 million jobs or one in ten of all jobs on the planet.

For over 25 years, WTTC has been the voice of this industry globally. Members are the Chairs, Presidents and Chief Executives of the world's leading, private sector Travel & Tourism businesses, who bring specialist knowledge to guide government policy and decision-making and raise awareness of the importance of the sector.



Oliver Wyman works with the world's leading travel and leisure companies, including hotels, airlines, passenger rail and bus operators, theme parks, cruise operators, gaming and lottery companies, tour operators and travel agencies, travel technology companies, airports, rail stations, and concessionaires, as well as private equity firms. The firm has more than 4,700 professionals around the world and draws on deep industry expertise and specialized capabilities to develop growth strategies and operational excellence initiatives with its clients to transform their business. Oliver Wyman is a trusted advisor to the World Travel and Tourism Council advising on its growth strategy, and has been directly supporting the development of the Seamless Traveller Journey programme. Oliver Wyman is a wholly owned subsidiary of Marsh & McLennan Companies [NYSE: MMC].



The International Border Management and Technologies Association's (IBMATA) is an independent not for profit non-government organisation whose aim is to support the facilitation of safe and secure movement of people and goods - and to prevent the non-compliant and harmful movement of people and goods - across international borders. Its membership comprises of Passport, Immigration and Border Agencies; Document, immigration and border technology providers; academics; and representatives from the travel industry including ports and airports. IBMATA promotes best practice in border management principles and the intelligent use of new and emerging technology; and is proud to partner with WTTC and the Seamless Traveller Journey concept.



THE AUTHORITY ON WORLD TRAVEL & TOURISM

WORLD TRAVEL & TOURISM COUNCIL (WTTTC), The Harlequin Building, 65 Southwark Street, London SE1 0HR, United Kingdom
Tel: +44 (0) 207 481 8007 | Email: enquiries@wttc.org | www.wttc.org

© World Travel & Tourism Council: Seamless Traveller Journey Situation Report - March 2019. All rights reserved.

The copyright laws of the United Kingdom allow certain uses of this content without our (i.e. the copyright owner's) permission. You are permitted to use limited extracts of this content, provided such use is fair and when such use is for non-commercial research, private study, review or news reporting. The following acknowledgment must also be used, whenever our content is used relying on this "fair dealing" exception:
"Source: World Travel & Tourism Council: Seamless Traveller Journey Situation Report - March 2019. All rights reserved."

If your use of the content would not fall under the "fair dealing" exception described above, you are permitted to use this content in whole or in part for non-commercial or commercial use provided you comply with the Attribution, Non-Commercial 4.0 International Creative Commons Licence. In particular, the content is not amended and the following acknowledgment is used, whenever our content is used:
"Source: World Travel & Tourism Council: Seamless Traveller Journey Situation Report - March 2019. All rights reserved. Licensed under the Attribution, Non-Commercial 4.0 International Creative Commons Licence."



You may not apply legal terms or technological measures that legally restrict others from doing anything this license permits.