In a bid to increase passenger throughput without added pressure or stresses, we explore how airports and technology pioneers can work together to create a more enjoyable end-to-end passenger experience.
India’s answer to a capacity problem: Digi Yatra

As passenger numbers continue to rise, airports are developing solutions to pressure points. In India, the use of Digi Yatra has ensured that despite the increase in passengers, efficiency and reliability have not been compromised. This can only continue to aid terminal operations and create a more seamless journey for passengers as the density of airports increase. Suresh Khadakbhani, General Manager of the Innovation Lab at Bangalore International Airport Ltd, reveals how the project took flight.

Background: BIAL and its Loyalty Programme
Bangalore International Airport Limited (BIAL) is a public limited company under the Companies Act formed to build, own and operate the Kempegowda International Airport (KIA). Private promoters hold 74 per cent while the Government holds the remaining 26 per cent. BIAL is responsible for the KIA’s operations, commercial activities and infrastructure development in line with growing demand.

KIA was originally planned to accommodate 12 million passengers a year, but based on the unprecedented traffic trends, the airport was redesigned to handle 20 million passengers per year. The redesign resulted in an increase in the size of the terminal, number of aircraft stands, new taxiway layouts and supporting infrastructure.

Passenger traffic has continued to grow at KIA, and the airport handled approximately 32 million passengers in 2018, officially making it the fastest growing airport in the world that year. With this growth expected to continue in the foreseeable future, BIAL has already begun further expansion projects which will result in airport capacity reaching more than 65 million passengers per annum. This will all be possible with the addition of a second runway (expected to be completed by October 2019) and a second terminal, Terminal 2 (T2), that is expected to be ready by March 2021.

The Digi Yatra (Digital Journey) concept was initiated during a brainstorming session held for the design of T2.
As the airport continues to grow at this rapid pace, BIAL is continually seeking to drive value creation at KIA, by undertaking strategic initiatives and a major digital transformation to increase operational efficiency, generate additional sources of revenue and most importantly, to enhance customer experience.

The Digi Yatra (Digital Journey) concept was initiated during a brainstorming session held for the design of T2. Multiple BIAL internal discussions, ideas to enhance the passenger experience at KIA were raised. We proposed a passenger process based on DVLQJOHELRPHWULFWRNHQXVLQJIDFLDOELRPHWULFV. Our mantra was ‘my face is my boarding pass’. The intent was to give passengers a seamless, paperless and hassle-free journey, using facial biometrics.

Once the end-to-end process was conceptualised, we selected a global vendor to carry out a proof of concept and started passenger trials on live passes at the airport. The Innovation Lab at BIAL then began to develop the concept further and started interactions with some of the leading biometric service providers of fingerprint, iris and facial biometric identification solutions.

Once the end-to-end process was conceptualised, we selected a global vendor to carry out a proof of concept and started passenger trials on live flights in January 2017.

Passengers loved the simplicity and convenience of the biometric process, especially getting rid of some of the bottlenecks at certain points of the airport, such as showing multiple documents (identity, e-TKT/ boarding pass, etc.) at multiple checkpoints inside the terminal.

We immediately realised the potential of this process and began discussions with authorities. BIAL demonstrated the new passenger process to the officials from the Ministry of Civil Aviation (MoCA), the Bureau of Civil Aviation and Security (BCAS), Central Industrial Security Force (CISF) and other sovereign agencies, who were all impressed.

KIA was originally planned to accommodate 12 million passengers a year, but based on the unprecedented traffic trends, the airport was redesigned to handle 20 million passengers per year.
with the simplicity, speed and the convenience that this new process offered to the passengers, while enhancing security at the airport.

Drafting the Digi Yatra Policy

After numerous meetings and workshops, MoCA decided that a national framework needs to be created to draft the Digi Yatra policy.

The Framework for Digi Yatra has the following constituents:

- At the apex is the Secretary of Ministry of Civil aviation
- A Steering committee (Digital Cell) comprising CEOs of major Indian Public Private Partnership (PPP) airports, (including the MD and CEO of BIAL), Airports Authority of India (AAI), BCAS and CISF
- A technical working committee (TWC) which comprises subject matter experts from airports, including members from BIAL, and the BIAL Innovation Lab.

The TWC conducted a series of workshops with all stakeholders including airlines, online travel agents, regulatory bodies, airports and the Unique ID Authority of India (UIDAI), to explain the concept of Digi Yatra and gather consensus among all stakeholders.

One of the initial challenges was the fact that we could not use the Aadhaar validation process due to regulatory issues that were raised by the Government of India. Aadhaar is a 12-digit number issued by the UIDAI to the residents of India once they have satisfied a verification process laid down by the Authority. Although being unable to use the process was a setback, we decided to continue our journey with the facial recognition-based process.

A decision was taken to form a not-for-profit joint venture company (JVC), with shareholders comprised of the AAI and other PPP airport operators across India.

This JVC was tasked to create an ‘on-the-cloud pan-India, Identity-as-a-Service’ platform called the ‘Digi Yatra Central Identity Management Platform (DYCIMP)’. This was envisaged to be the world's first, truly scalable national level trusted-traveller programme based on a single-token biometric identity.

This platform would serve all airports across India for the identification and validation of passengers.

Objectives

The objective was to ensure that every passenger (both Indian citizens and foreigners) would become a ‘Digi Yatri’ and would be able to enjoy the privileges and benefits of the Digi Yatra programme. The main objectives of the programme were:

- To enhance the passenger experience and provide a simple experience to all air travellers
  - Deliver a seamless, paperless and hassle-free experience
- Achieve better throughput via existing infrastructure using a digital framework
  - Walk-through process facilitated by advanced facial biometric solutions
- Result in lower-cost operations
  - Remove redundancies at checkpoints and improve enhance resource utilisation
- Digitise current manual processes and bring better efficiencies
  - Get real-time notifications about congestion and delays to have greater visibility throughout the journey
- Navigate seamlessly through the airport using digital guidance systems, interactive kiosks and augmented reality
- Enhance security standards and improve current system performance
  - Enhance security at Indian airports using Digi Yatra ID-based verification and identification with real-time facial biometrics, validation of boarding pass or e-tickets with the airline system in real-time.

Goals

The goals of the project were twofold. Firstly, to set the standards/standard operating procedures for digital transformation of the Indian aviation industry. And secondly to create the DYCIMP with ‘Digital Identities’ like Aadhaar, passports and other forms of official ID, enabling biometric boarding process for all airports across India.
SEAMLESS EXPERIENCES FOR THE CONNECTED TRAVELLER

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IN 2018, LATAM Airlines made history in its home region; launching 27 new routes and adding a new continent to the network. Costa Rica, Las Vegas, Boston, Rome, Lisbon, and Tel Aviv are among the new destinations that were added. Technology is constantly changing, and this has driven the airline group to continuously improve the travel experience for its customers. LATAM Airlines currently has more than 1,000 self-service kiosks at airports, where passengers check in, print boarding passes and tag their hold baggage, avoiding queues and making the process quicker and more enjoyable.

Adapt and change: How LATAM Airlines is revolutionising travel

LATAM Airlines is Latin America’s leading airline group, with one of the largest route networks in the world, offering services to 143 destinations in 26 countries, including six domestic markets in Latin America. Javier Macias, General Manager and LATAM Airlines Group, reveals how the passenger experience is key to their success.

Facial recognition
One of the latest and most ground-breaking technological developments that LATAM has tested – together with Carrasco International Airport in Montevideo, Uruguay – is biometric boarding. LATAM was invited by the airport to implement this pilot project and today is the only airline group in South America that has is utilising a facial recognition system for boarding, which decreases boarding time by up to 50 per cent. It is estimated that 13-14 passengers can board per minute when assisted with the facial recognition technology; twice that expected during manual boarding.

For biometric boarding, LATAM appointed the adaptation of Vision-Box and SITA systems.

Javier Macias, General Manager and LATAM Airlines Group, reveals how the passenger experience is key to their success.
JAVIER MACIAS has worked for LATAM Airlines Group in various roles since 2005. His first role for the group was based in Rosario, Argentina, as Regional Manager, he then progressed to Sales Manager, based in Buenos Aires. In this role he coordinated the sales, marketing and operations teams. Javier moved to a Commercial Manager role in the Ecuador office in 2012, where he took on responsibility for customer experience in addition to sales and marketing. He is currently General Manager of the LATAM Airlines Group, based in Uruguay.

Augmented reality

Aside from its biometric credentials, LATAM was also the first airline in South America to launch an augmented reality tool that allows passengers to measure their hand luggage virtually. With the tool, passengers can superimpose a virtual box over their carry-on bag to determine whether it is within the permitted dimensions and will therefore know whether the luggage will need to be checked-in and paid for before they arrive at the airport.

In addition, the airline group is working on a luggage tracking app, which will allow real-time notifications to be sent to customers, among other advances.

Providing the best experience to our customers motivates the group to permanently work on enhancing its value proposition. This idea of seamless and enjoyable travel extends further than the airport itself. For example, LATAM has pledged to renew its aircraft cabins, and the first 200 to get the makeover have arrived at Lima, Peru. The aircraft now features LATAM’s business cabin with the highest worldwide standards of comfort and a revamped economy cabin that is equipped with LATAM+ Seats, which offer increased space, a dedicated overhead bin and premium services such as priority boarding. The experience continues in the sky too, with LATAM offering a Wi-Fi service aboard domestic flights in Brazil, and this service will soon be available throughout the network.

2018 and will be implemented in 2019 for all LATAM flights at Carrasco Airport.

The biometric system uses the passenger’s face for the boarding pass validation process. It thus collects information from travel documents, such as passports or identity cards, which are stored on the chip of all electronic documents, and the boarding card that were captured in the migratory process. After verifying that the person agrees with the data, it is not necessary to show documents during the boarding process. The process is fast and secure, as it identifies the passenger in a unique way. In achieving this, LATAM and its technology partners are putting the passenger at the centre of innovation, in a bid to ease and facilitate their boarding process.

During the traditional process, different airport and airline staff members with alternative roles would ask the passenger for the same information. With the use of biometric boarding, the information is digitalised and then shared. This benefits the passenger, as they no longer need to go through such a repetitive and often time-consuming process. But also benefits the airline, as passenger processing is expedited.

Uruguay is an excellent market for LATAM to test this technology, since it has more than eight daily international flights departing from Montevideo to Santiago de Chile, Lima, São Paulo and Rio de Janeiro, through which we embark between 800 and 1,000 passengers per day. Our purpose is to excite the rest of the airports in the region to jointly implement biometric boarding and thus provide a comprehensive proposal for facilitation and security to our customers.

LATAM is the only airline group in South America to fully utilise biometric boarding.
The seamless journey: What does the future hold for airports?

According to the latest ICAO statistics\(^1\), 4.3 billion passengers were transported in 2018. These statistics have been steadily increasing for years and are set to double by 2030. However, while travelling should be synonymous with relaxing, the passenger experience at airports often falls short. Never-ending queues at airport checkpoints make this experience a difficult one to appreciate. Franck Maurin, Product and Solutions Director for Passenger Facilitation and Border Control at IDEMIA, reveals how things are looking up and brand-new technological innovations have sprung up in several airports and points of entry.

The seamless journey
A few years ago, navigating around an airport without having to pull out your passport or boarding pass at every checkpoint would have been considered a sweet dream. Today, it is a reality in several airports around the world, where biometrics and identity management systems are used as allies to allow travellers to enjoy seamless journeys.

Changi Airport in Singapore stands out as a great example of an airport able to reinvent itself and provide its travellers with an enjoyable journey. Together with IDEMIA, the Changi Airport Group has managed to cut wait times, improve the overall passenger experience and shine on the international stage as the ‘world’s best airport’ for the seventh consecutive year, in the annual Skytrax awards\(^2\). The advantages are evident to the passengers, the airports and the airlines.

For airlines, IDEMIA’s high-tech solution means loyal, happy passengers and fewer delays, as it speeds up passenger processing at boarding.

However, private stakeholders must be aware of the risks involved concerning the processing of passengers’ data.

Security and privacy
A passenger’s biometrics constitute private and sensitive data that airports and airlines have to treat with utmost security. The 2018 data leaks of two leading actors in the social networking sector impacted more than 90 million users. Such breaches can have devastating effects on a business’ reputation, notwithstanding the dramatic economic downhill it can cause. For passengers, having their data breached could lead to fraud and potential identity theft.

Yet, 65 per cent of passengers are willing to share additional personal information (address of destination, picture, etc.) to speed up processing at airports, 45 per cent of air travellers choose biometric identification as a replacement of their passports, and 56 per cent would like to be able to track their baggage\(^3\).

If numbers never lie, these show that there is a necessity for expansion of a seamless journey. Changi Airport’s partnership with IDEMIA has proved that technology is fundamental in making passengers’ lives as stress-free as possible, while providing private stakeholders and travellers with the security and peace of mind they deserve.

Time to get onboard and let the seamless journey take us where we need to go.

Advantages on every front
For travellers, their airport journey will be stress-free, smoother and faster. No bottlenecks, no downtime and no pulling out your boarding credentials every three minutes. Instead, IDEMIA’s ground-breaking technology will capture the passenger’s biometrics (face, iris, fingerprints) and retrieve it at every checkpoint (security, self-bag drop, boarding, lounge area etc.).

For airports, a smooth journey allows staff to locate passengers, which reduces processing times at departure and arrival, improving aircraft turnarounds. It also increases the quality of service and security as well as the airports’ ranking.

For airlines, IDEMIA’s high-tech solution means loyal, happy passengers and fewer delays, as it speeds up passenger processing at boarding.

Facial recognition is just one area of biometrics that IDEMIA has utilised in the airport space.

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idemia.com
internationalairportreview.com
ID2Travel
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In December 2018, Delta – in partnership with U.S. Customs and Border Protection (CBP), Hartsfield-Jackson Atlanta International Airport and the Transportation Security Administration – unveiled the first biometric terminal in the United States. In a growing world that’s getting increasingly complicated, airports and airlines are turning to technology to streamline processes and Delta’s breakthrough is a shining example.

The Terminal – at Maynard H. Jackson International Terminal (Terminal F) in Atlanta – enables customers flying direct to an international destination on Delta, Aeromexico, Air France, KLM or Virgin Atlantic Airways to use facial recognition technology from kerb to gate, including to:

- Check in at the self-service kiosks in the international lobby
- Drop checked baggage at the counters in the international lobby
- Serve as identification at the TSA checkpoint
- Board a flight at any gate in Terminal F
- And, go through CBP processing for international travellers arriving into the U.S.
Touch points throughout the terminal started coming online in mid-October. Travellers have an opt-out option, but to date nearly all the 25,000 customers who travel through Terminal F each week are choosing the facial recognition process, with just two per cent opting out.

Popular with passengers but also proving its worth, based on initial data the facial recognition option is saving an average of two seconds per passenger at boarding, or nine minutes when boarding a wide-body aircraft.

“Delta’s successful launch of the first biometric terminal in the U.S. at the world’s busiest airport means we are designing the airport biometric experience blueprint for the industry,” said Gil West, Delta’s COO. “We’re removing the need for a customer checking a bag to present their passport up to four times per departure – which means we’re giving customers the option of moving through the airport with one less thing to worry about, while empowering our employees with more time for meaningful interactions with customers.”

On the heels of Atlanta’s successful rollout, Delta – in partnership with CBP and the Wayne County Airport Authority – expanded the facial recognition boarding test which had been running since July 2018, to all 14 international gates at McNamara Terminal in the Detroit Metropolitan Airport (DTW). With this move, any customer flying direct to an international destination from DTW will also have the option of using facial recognition technology at boarding. This year, Delta will be rolling out the facial recognition technology at DTW from kerb to gate.

“It is a great honour for Detroit Metropolitan Airport to become one of the nation’s first biometric terminals,” said Chad Newton, Wayne County Airport Authority’s Interim CEO. “We are continuously seeking ways to enhance the customer travel experience, as a world-class airport. We look forward to partnering with Delta, CBP and TSA to provide passengers with the option to utilise facial recognition throughout their entire travel process.”

The expansion of the facial recognition option with Delta Biometrics is a natural next step following CBP and Delta’s optional facial recognition boarding tests at ATL, DTW and John F. Kennedy International Airport over the past several years. In addition, Delta recently tested a self-service biometric bag drop at Minneapolis-Saint Paul International Airport for international customers. Delta has also tested biometric boarding at Ronald Reagan Washington.
National Airport, and has launched optional biometric check-in for all domestic Delta Sky Clubs, facilitated by Delta Biometrics.

**Innovative heritage**
Delta’s biometric credentials first came into the fore back in May 2017, when the airline introduced a biometric boarding pass at Reagan Washington National Airport. The pass experience enabled eligible Delta SkyMiles Members to forego a paper or mobile boarding pass and hard copy ID in favour of fingerprints as proof of identity before checking in a bag or boarding a flight. At the time, West commented: “We’re rapidly moving toward a day when your fingerprint, iris or face will become the only ID you’ll need for any number of transactions throughout a given day.”

The success of the pass was soon followed by the introduction of self-service bag drop machines at Minneapolis-St Paul International Airport in June 2017, following the airline’s pledge to transform the travel easy and enjoyable. The $600,000 investment in self-bag drop enabled passengers to securely and easily check their own bags, eliminating friction points and empowering the passenger.

These initial breakthroughs, which are joined today by many airports around the world who are embracing the use of biometric technology to expedite passenger flow and enhance passenger experience, were followed back in 2017 by the launch of next-generation biometric CBP eGates in Hartsfield-Jackson Atlanta and New York-JFK airports.

Just one month later, in July 2017, Delta was proud to become the first airline to launch biometric boarding at Reagan Washington National Airport.

**Industry-leading solutions**
Over the past several years, Delta has led the industry on a number of customer solutions aimed at making the journey through the airport more efficient and enjoyable. These include the following:

**RFID baggage handling and bag tracking**
Delta implemented an RFID bag tracking solution on a global scale to further improve its reliability for checked bags. A recent IATA study showed that an industry-wide global RFID solution could reduce the number of mishandled bags by up to 25 per cent by 2022. With the Delta solution, push notifications as part of the Fly Delta app integrate inform a passenger when their bag has been successful loaded on to an aircraft, which carousel it will arrive at for pick-up, and more.

**Automatic check-in**
This has been added to the Fly Delta app to streamline the check-in experience for customers to take the guesswork out of accessing a boarding pass. The functionality automatically checks in eligible customers 24 hours prior to their scheduled departure. Customers receive an alert via email or push notifications then open the app, acknowledge the Federal Government mandate for restricted items, and their boarding pass appears. Eligibility is generally available to customers with domestic-only itineraries who already have a seat assignment or are auto-assigned a seat at check-in.

“Our customers have told us Delta can eliminate some of their stress associated with upcoming travel if they know their boarding pass is ready and can see their seat assignment,” said Rhonda Crawford, Vice President – Global Distribution & Digital Strategy. “Auto check-in provides that peace of mind in a simple, automated solution that also saves valuable time.”

The Fly Delta mobile app – the common connection between these advancements – is a cross-industry alliance that Delta believes will empower customers with a seamless in-cabin connectivity experience, more efficient and high-tech automated screening lanes, and will help Delta pilots avoid turbulence for a more comfortable flight.
As part of our Seamless Travel In-Depth Focus, International Airport Review asked this panel:

How has the passenger journey been enhanced through seamless travel?

**BU** If you break down the idea of a seamless flow through an airport, you are left with lots of small steps, and it’s these that create a seamless passenger experience. If you think about the passenger, they will fly regardless of innovation because they want to see and experience new places. But eventually delays will become too much for airports, airlines and passengers.

Delays happen because the processing of passengers takes too long. Take self-service bag drop for example; automation has helped to reimagine the way luggage can be handled and that has empowered the passenger and gone some way to reducing queues. But small details like how a bag tag is presented to the customer make a huge difference. eezeetags’ product range enhances the passenger experience and adds to the seamless journey, by making that one step easier and quicker.

More and more passengers are starting to get used to our magic adhesive as the standard way to tag their bag, and every time they use the system, their process speeds up. Over the last year we have added more airports and airlines to our portfolio, with a few major ones in some of the fast-growing regions, such as Asia Pacific and India. So we are extending the reach of eezeetags and it’s an exciting time for us. But our product has been made with the passenger in mind and focus on self-service, therefore we rely on the investment of the airport or airline into a self-service solution.

The ‘passenger experience’ is a fast-growing market in the aviation industry and ‘seamless travel’ is an ideal. The technologies already exist, yet many airports around the world are still processing passengers manually. Investment and stakeholder collaboration will help to change this, and that is when we will see the real innovation taking off.

**ML** The IATA 2018 Global Passenger Survey shows that in 2012, 21 per cent of travellers were prepared to queue for 10–20 minutes. In 2015, only seven per cent were prepared to wait that long. The same report states that passengers expect to go through security/immigration in less than 10 minutes.

Today, Vision-Box is a pioneer in reducing waiting times and promoting passenger happiness. Vision-Box delivers a streamlined travel experience relying on the use of biometric technology to offer a seamless passenger flow. Since 2015, Aruba International Airport - equipped with Vision-Box’s Happy Flow™ - has been boarding one passenger every three seconds using facial recognition: half of the document-based processing time. At Los Angeles International Airport, 500,000 passengers have already used a similar biometric solution, with boarding times ranging up to 494 passengers in just 18 minutes, again, more than half the normal time.

At Sydney Airport, an ongoing trial of a biometric-based contactless journey from kerb-to-gate, has run run since June 2018. Qantas travellers use their face as a token to check-in, drop bags, access lounge and board the plane. To date, over 4,000 passengers have experienced this frictionless journey, enjoying significantly reduced processing times.

Saving time is just one of the many advantages of Seamless Flow, which was designed to fulfil passengers’ expectations for comfort, respect, control and enjoyment. The success and consequent rollout of seamless experiences across the world is shifting the vision of a journey from point-by-point to a fully connected one.

By relieving queues in favour of more time at the duty free, Seamless Flow is turning wasted minutes into valuable non-aviation revenue gains. The ideal airport journey should start when the passenger is sitting on their couch, and later move on to a stress-free journey to and beyond the boarding gate.

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"Passenger experience’ is a fast-growing market in the aviation industry and ‘seamless travel’ is an ideal."
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