

IN FOCUS

Digi Yatra - India's Domestic Air Travel App

Mr. Venkatesh Krishnamurthy, Advisor (Digital), DAKSHIN

Digi Yatra is an app that helps air passengers to obtain security clearance and navigate quickly in Indian airports, from entry to boarding the aircraft, using a contactless facial recognition technology. It was launched in 2022 in three airports in India, viz., New Delhi, Bangalore and Varanasi. It is owned and managed by Digi Yatra Foundation and is a part of India's successful Digital Public Infrastructure (DPI). At the moment it is available for domestic flights only and is operational at over 20 airports. Currently it has nine million active users and has facilitated more than 45 million journeys.

Indian civil aviation market is growing leaps and bounds. The domestic air passenger traffic in India was more than 150 million in 2024 and expected to grow about 10 percent a year. So, there is huge task of identity verification of passengers, with a variety of identity proofs and the consequential challenges. Digi Yatra has smoothened passenger management into and inside airports.

The strengths of the app are in its objectives, design and product management. It does not load India's citizen unique biometric-based identity system Aadhaar, for every flight a passenger may take. It was designed to be sufficiently private, fast and contactless. It has been designed to authenticate the passenger once and this authentication is used for subsequent flights. To achieve this, it uses secured distributed offline credentials. The app clearly does not collect data unnecessarily. Hence, it gives full control of data to corresponding passengers. Passengers can delete their records at any instance. Passengers can voluntarily add their boarding passes before flying and can also delete the boarding pass before flying or after completing their travel.

There were extensive trials conducted by Digi Yatra Foundation before the launch. Over a few releases, initial defects were ironed out. The uploading of boarding pass can be made in many ways such as scanning of the QR code on the boarding pass, uploading an image (jpeg format) or the file (pdf) of the boarding pass issued by the airline. Upon successful uploading of the boarding pass, the traveller can simply authenticate with facial recognition at the airport.

Digi Yatra is free of charge for passengers. It is a complete paperless solution for passengers and fellow travellers from their families to access airports, movement and for boarding. The United States has implemented Trusted Traveller Programme (TTP), for pre-screening of air travellers, in the US and a few partner countries, as well as for border-crossing of commercial truck drivers crossing US to Canada and Mexico. However, this is priced for different categories of travellers. The Heathrow airport in the United Kingdom has implemented biometric boarding for select flights. Digi Yatra is among the largest implementations in terms of scale of passengers, with the use planned to include all the airports in India.

As of now, Digi Yatra is only for domestic air travel of Indian nationals. This is not extended for the purpose of immigration or emigration. Digi Yatra is comparable only to the TTP of the US, "Face Express" system of Japan (implemented at Narita and Haneda airports) and "Seamless Flow" biometric boarding and bag drop at Schiphol Airport in The Netherlands.

A few countries have implemented nearly frictionless movement of travellers for immigration purpose only. Immigration and emigration apps serve entry / exit from the country. The frictionless immigration systems use automated facial recognition and / or automated fingerprint

recognition based immigration clearance / border control at airports. Such automated immigration DPI include the following -

1. Australia's Smartgates for immigration and emigration which reads ePassports
2. US Customs and Border Protection application which uses facial recognition for immigration and emigration
3. UK's eGates and Smart Tunnel which uses facial recognition for eligible passengers who hold biometric passports
4. Singapore Changi Airport facial recognition based immigration, security and boarding
5. UAE uses facial recognition and iris recognition based Smart Gates in Dubai airport
6. Biometric based immigration and emigration are at different stages of trials in other countries.

Digi Yatra is for smooth airport domestic terminal entry, check-in and boarding for Indian citizen passengers and not for immigration or emigration. So, the above apps are incomparable to Digi Yatra.

The goal is to make Digi Yatra operational at all airports in India. This horizontal scaling may pose a few challenges of scale but Digi Yatra's distributed architecture and offline authentication may already be up for this. Digi Yatra can be extended for international departures from India, with some enhancements to the app. There are features in the roadmap indicating that the app could be extended to rail travel as well as hotel and taxi bookings.

Digi Yatra can bring about similar benefits and more, to countries of the Global South. If India transfers Digi Yatra technologies to other developing countries, then air passenger security management in these countries can also be enabled by Digi Yatra. As India transfers its DPI technologies to such countries free of royalty and with source code, these countries can innovate further and perhaps monetize. To implement this, the countries need to implement unique facial identity system for their citizens first. If the software and training are offered to these countries free of charge, these countries need to invest in enabling facial recognition at their airports, Ethernet communication networks and cloud to store the data. As the data can be deleted periodically, the size of database can be manageable. It may be possible for those countries which have implemented unique facial identification of their citizens to implement this quickly.