

Face scans, robot baggage handlers—airports of the future

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Credit: Petr Kratochvil/public domain

Passengers' baggage is collected by robots, they relax in a luxurious waiting area complete with an indoor garden before getting a face scan and swiftly passing through security and immigration—this could be the

airport of the future.

It's a vision that planners hope will become reality as [new technology](#) is rolled out, transforming the exhausting experience of getting stuck in lengthy queues in ageing, overcrowded terminals into something far more pleasant.

The Asia-Pacific has been leading the way but faces fierce competition from the Middle East as major hubs compete to attract the growing number of long-haul travellers who can choose how to route their journey.

The regions "are the two leading pockets of technology growth because they are really competing to be the global hubs for air transportation," Seth Young, director of the Center for Aviation Studies at Ohio State University, told AFP.

"If I'm going to fly from New York to Bangalore, do I transfer through Abu Dhabi or Dubai or do I transfer through Hong Kong? That's a huge, huge market."

But the changes also represent major challenges that could upend decades-old business models at major airports, with analysts warning operators may face a hit to their revenues to the tune of billions of dollars.

Facial scanning in particular is generating a lot of buzz. Changi in the affluent city-state of Singapore, regarded as among the world's best airports, is set to roll out this biometric technology at a new terminal to open later this year.

Passengers will have their faces scanned when they first check in and at subsequent stages, theoretically allowing them to go through the whole

boarding process quickly without encountering another human.

Australia announced in July an investment of Aus\$22.5 million (\$17.5 million) to introduce [face recognition technology](#) at all the country's international airports, while Dubai Airport is also trialling it.

Robot baggage handlers

Robots are appearing at some major hubs, including at Seoul's Incheon airport, where they carry out tasks including cleaning and carrying luggage, while Changi's new terminal will have robotic cleaners complete with butlers' uniforms.

Self-service check-in and printing of boarding passes is already common, with many people printing their passes at home or at airport kiosks, and some hubs are now introducing self-service baggage drop points.

The service, which allows passengers to print and tag their baggage and then send it off on the conveyor belt, is available at airports including Australian hubs, Hong Kong, London Heathrow and Amsterdam's Schiphol.

Airports are also trying to overhaul their image as dreary places that must be endured in order to get from A to B, to somewhere travellers can enjoy spending time.

Changi is building a new terminal complex called Jewel, a 10-storey development filled with shops and restaurants whose centrepiece will be a 40-metre (130-foot) indoor waterfall surrounded by an indoor garden.

The complex will make the airport look more like a shopping mall than a traditional hub, and is aimed at cashing in on transitting passengers.

"They are looking at retail, non-aeronautical profits," said Shukor Yusof, an aviation analyst from Endau Analytics.

But while hubs in Asia-Pacific and the Middle East surge ahead, airports in the United States and Europe are being left behind.

"Europe and the US were the leading aviation markets for the last 75 to 100 years, and it's very difficult to revolutionise your infrastructure when you are on a foundation that is 75 years old," said Young of the Center for Aviation Studies.

He added it was also a matter of "political will", as emerging economies see building cutting-edge airports as a way of raising their status globally.

Ageing hubs

Some US and European airports are nevertheless trying to up their game.

New York's ageing airports have long been criticised as old-fashioned, cramped and dirty but JFK, the main international hub serving the city, hopes to shed its dire reputation with a proposed \$10 billion redevelopment.

Amsterdam's Schiphol is aiming to become the world's leading digital airport by 2019, and has been testing hand luggage scanners that allow passengers to keep liquids and laptops in their bags. It is also looking at biometric technology.

Despite the buzz surrounding new technology, there are concerns that rapid innovation could threaten long-held ways of doing business.

A report from consultancy Roland Berger warned that airport revenues

from retail and parking could fall by between two and four billion dollars due to the new innovations.

Automated, more predictable check-in procedures threaten retail outlets as passengers are likely to reduce the "buffer" they build in to trips to the [airport](#), meaning less shopping time, while developments such as ride-hailing apps could undercut parking revenues, it said.

Still, the landscape may not transform so quickly as many airports face difficulties in introducing new technology, from resistance to change to availability of financing, said Xavier Aymonod, a transport expert at Roland Berger and lead author of the report.

"It's really challenging for airports to launch this digital transformation," he told AFP.

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