



Airport Of The Future

ASIA PACIFIC

leading the way

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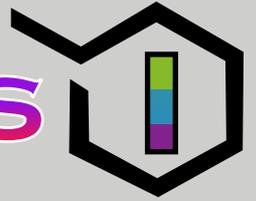
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AIRPORT OF THE FUTURE:
ASIA PACIFIC LEADING THE WAY

According to the latest edition of IATA's 20-Year Air Passenger Forecast, Asia Pacific will be the biggest driver of demand from 2015 to 2035 with more than half of the new passenger traffic coming from the region¹. Passenger growth forecast shows that China (Figure 1)² will replace the US by around 2024 as the world's largest aviation market (defined by traffic to, from and within the country) and India will displace the UK to reach third place. Furthermore, Indonesia and Vietnam are expected to be of the five fastest-growing markets over the forecast period, indicating that four of them will come from Asia in terms among additional passengers per year.

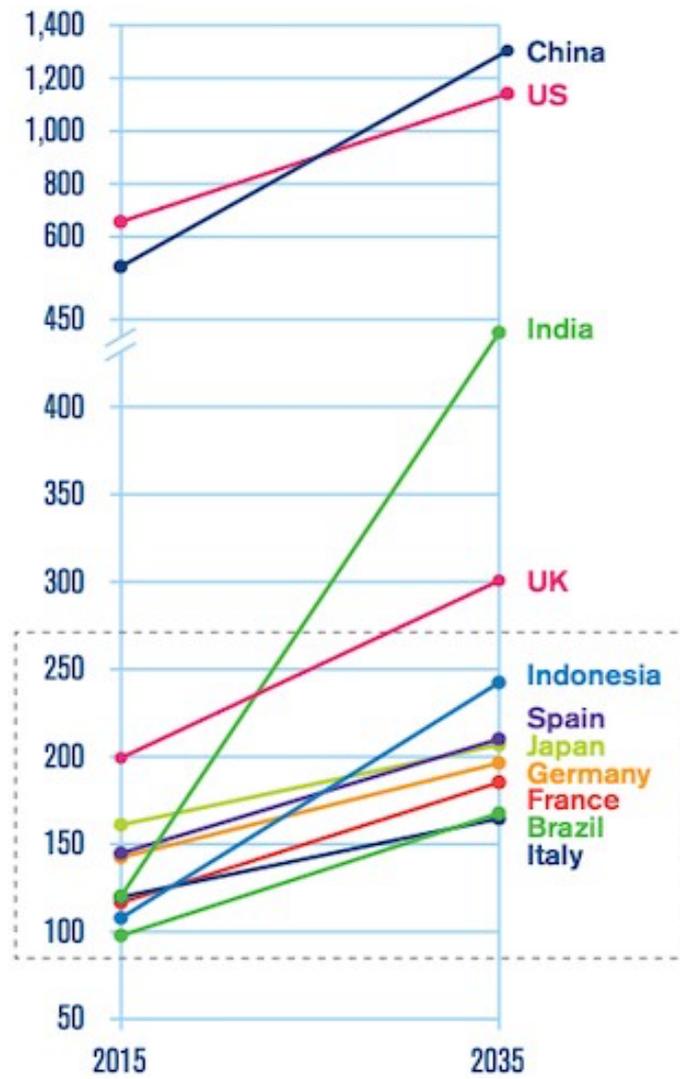


Fig 1. Passenger growth forecast shows that China International Air Transport Association (IATA). (2016). IATA Forecasts Passenger Demand to Double Over 20 Years.



In addition to increasing air passenger traffic, advanced technology forces airport authorities to sign up for smart airport technology. Since 2010, the demand for industrial robots has increased significantly as a result of the ongoing move towards automation and continued technological innovations in industrial robots. Airport robotics is a *new-age concept* that has been implemented at several airports to assist travelers along the way. The era of robotics aims to change the way airports will be designed in the future, making it easier and much more enjoyable to travel.

The market for airport robots is projected to register a Compound Annual Growth Rate (CAGR) of more than 15 percent over the forecast period 2019-2024. Airport robots are becoming increasingly visible worldwide and the various applications of robots at airports are: valet parking robots, airport security, boarding pass scanning, passenger guidance and baggage handling systems at the airport.

In light of these developments, Asia is now seen to be the largest robot market in the world. Of all newly-implemented robots in 2018, around two-thirds (67 percent) were deployed in Asia.



In 2013, in China, the much-discussed Belt and Road Initiative (BRI) seems to have begun to induce higher growth in air traffic to and from China in some of the countries linked to the initiative. Some estimates list the Belt and Road Initiative as one of the largest infrastructural and investment projects in history, covering more than 68 countries, including 65 percent of the world's population and 30 percent of the global GDP as of 2017, with this scale it is likely the initiative will stimulate further aviation growth³.

The Belt and Road Initiative (BRI) is a global development initiative implemented by the Chinese Government, involving infrastructure construction and investment in 152 countries. The aim of the China Belt and Road Initiative is to link Asia, Africa, the Middle East and Europe to a broad transport and logistics network, as illustrated in Figure 2⁴.

In 2018, there was a mixed picture for the three largest Asian markets due to the upcoming Olympics in Japan 2020: Installations in China (154,032 units; -1 percent) and the Republic of Korea (37,807 units; -5 percent) declined, while installations in Japan (55,240 units; + 21 percent) increased considerably.

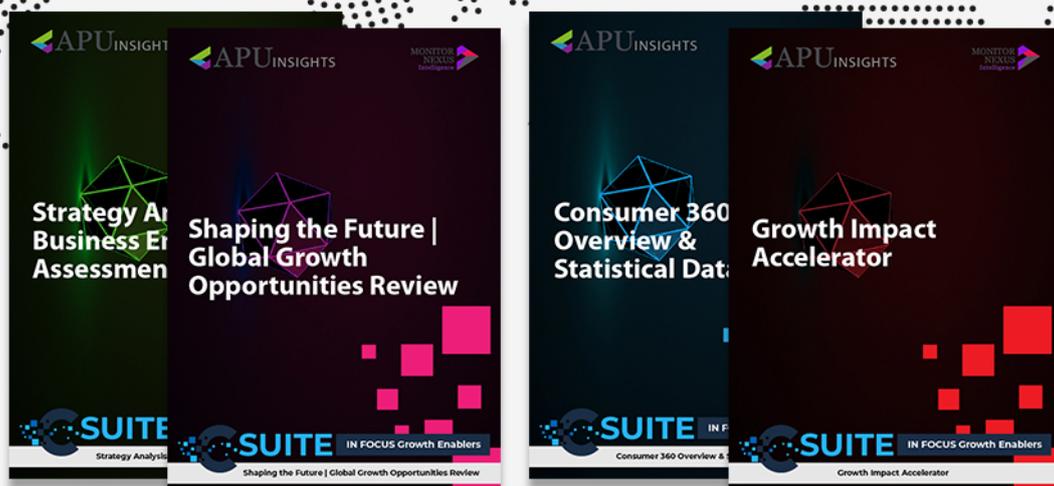
It is no coincidence that robots are being increasingly deployed at Japanese airports. Tokyo's Haneda Airport (Japan) is a bustling gateway, representing the fifth fastest-growing airport worldwide for the 2018, with 86.9 million passengers. It is accelerating preparations for the use of robots due to the upcoming 2020 Tokyo Olympics and Paralympics, where the number of tourists is expected to rise.

Japan Airport Terminal Co. Ltd. established the Haneda Robotics Lab in 2016 to conduct demonstration experiments of robotic products (including prototypes) at Haneda Airport with the aim of verifying robot technologies². It has selected seventeen types of robots for new service at the airport.

Of the seventeen robots tested, ten are currently undergoing design improvements and potential implementation trials. The laboratory hired a number of participants and agreed on the different categories in which robots would be used during the tests. Haneda Airport is the perfect environment for conducting the trials, as multitudes of people, demands, and desires intermingle at this international hub⁵.

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