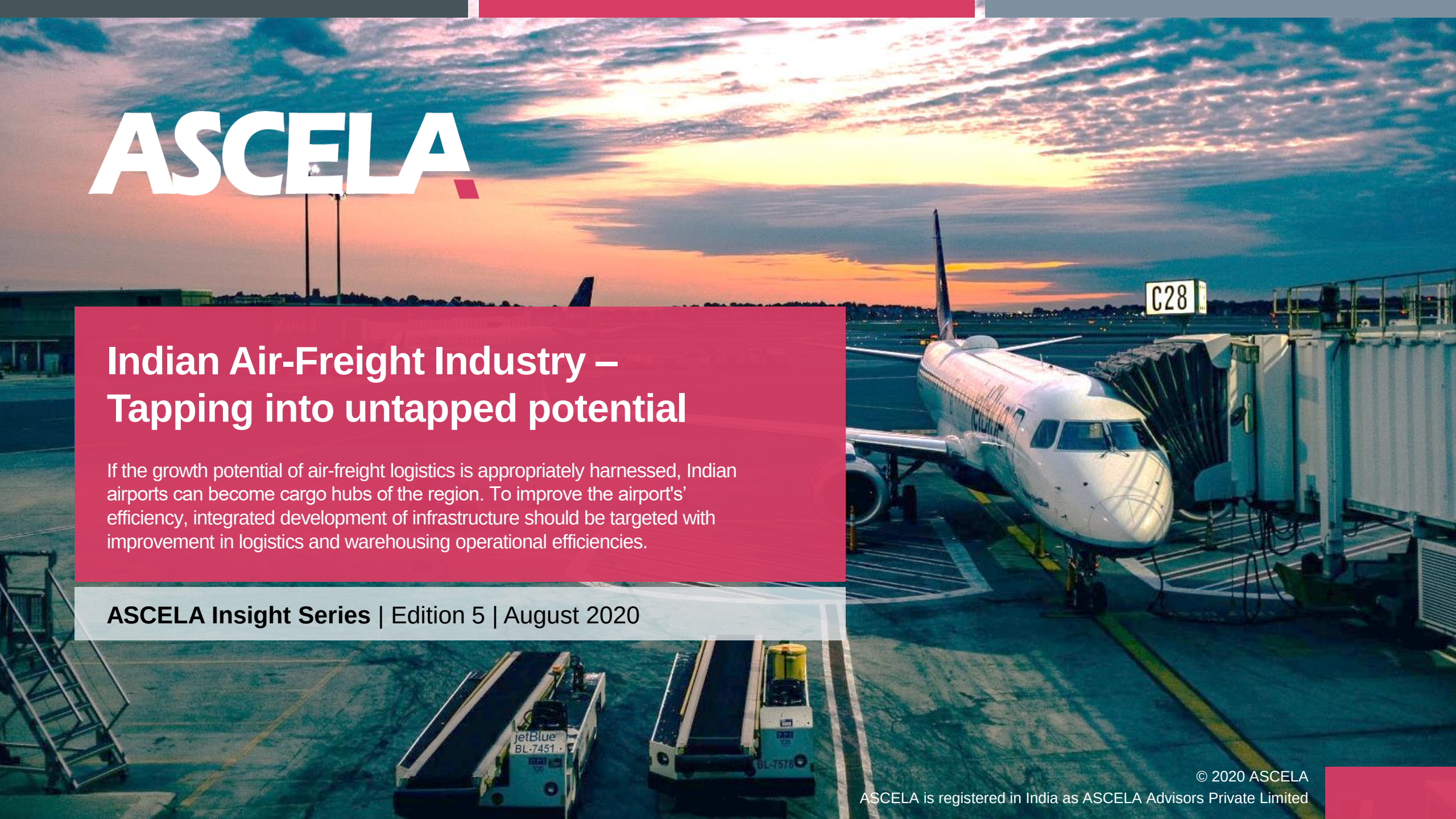

Indian Air-Freight Industry – Tapping into untapped potential

If the growth potential of air-freight logistics is appropriately harnessed, Indian airports can become cargo hubs of the region. To improve the airport's' efficiency, integrated development of infrastructure should be targeted with improvement in logistics and warehousing operational efficiencies.

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Air-cargo transport, despite being a costlier mode of transportation, is witnessing continuous growth with increasing demand for perishables, chemicals, and valuables.

ASCELA has been closely monitoring air freight industry and analysing challenges, bottlenecks, and business potential in the sector.

Contents

- Global Overview and Trends
- Indian Freight Economics
- Issues and Challenges
- Dwell Time Assessment
- Incentives and Policy Support
- ASCELA's Viewpoint

The sector is expected to grow due to the strong demand for manufacturing exports and increased penetration of technologies in the value chain.

Contributors

Nivesh Chaudhary

Director- Transport and Logistics
ASCELA

nivesh.chaudhary@ascelaadvisors.com

Nivesh is co-founder of ASCELA and is an Infrastructure professional with more than 12 years of progressive experience in consulting landscape, across multiple transportation sub-sectors, including Ports and Shipping, Logistics, and Supply Chain.

Shikha Kosta

Consultant- Transport and Logistics
ASCELA

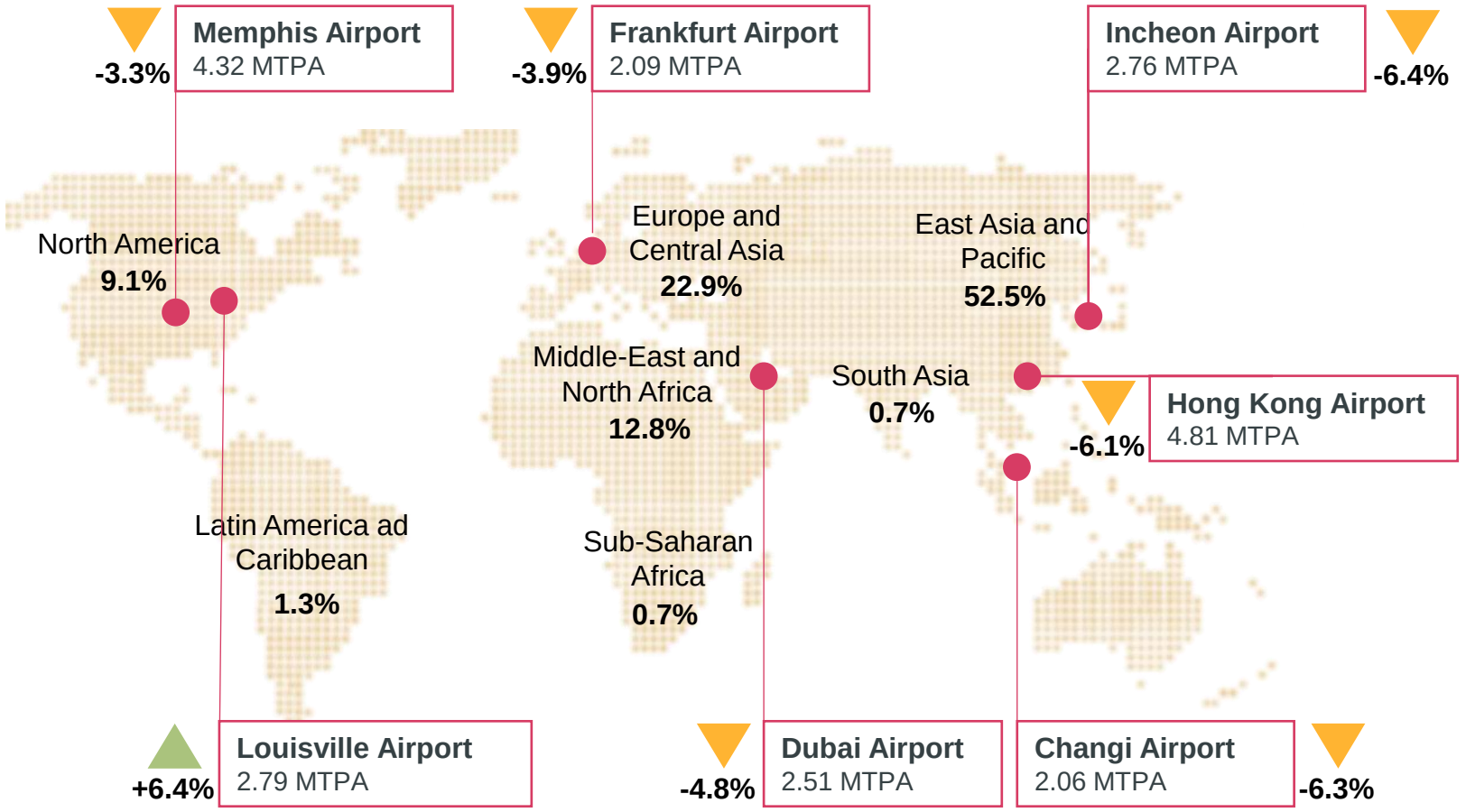
shikha.kosta@ascelaadvisors.com

Shikha is an Infrastructure Consultant with knowledge of Urban Infrastructure Development and holds specific experience in transportation and logistics planning, including urban transportation and supply chain.

Global trade war and elevated uncertainty has affected industry-wide air freight demand in the year 2019, which worsened further due to COVID-19 pandemic.

Regional traffic share, and cargo handled at major international airports and y-o-y percentage change in 2019

Source: Airports Council International (ACI); World Bank Data Bank, 2019



Global performance

Asia Pacific region contributes almost half of the air freight supply across the globe. This is followed by Europe and Central Asia region, accounting to 22.9% share of air-cargo traffic. Sub-Saharan Africa and South Asia contribute less than 2% cumulatively, mostly due to lack in efficient airport infrastructure.

-3.3%

Global air-freight demand y-o-y growth 2019

+2.1%

Global air-freight capacity y-o-y growth 2019

1. Weakness in international trade impacted most of the **Asia Pacific region**, one of the world's leading manufacturing and distribution hubs. Its air freight volumes fell by nearly 6% year-on-year in 2019.

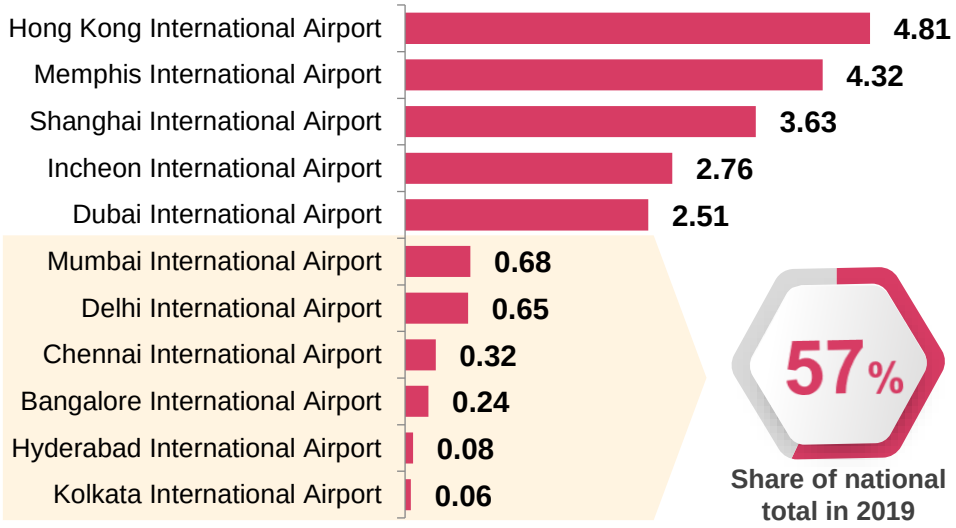
2. **Africa** was the strongest performer in air cargo volumes in 2019, witnessing a y-o-y growth of 7.4% in the air-cargo demand.

If the growth potential of air-freight logistics is appropriately harnessed, Indian airports can become cargo hubs of the region.

India outlook

Cargo handled by Indian International Airports (in MTPA), compared to leading global counterparts (2019)

Source: Airports Council International (ACI)



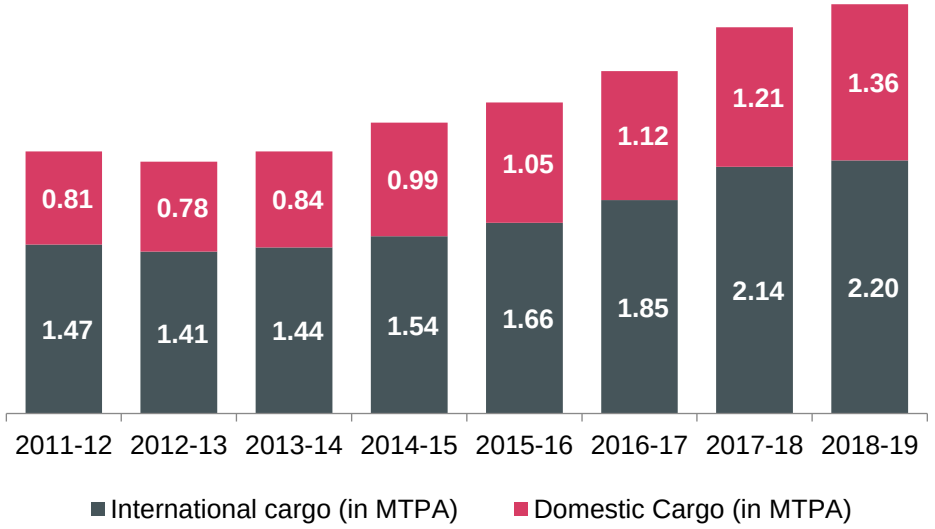
There is a significant untapped potential for air-cargo in India. The total air-cargo volume of 3.56 MTPA handled in 2019 by all Indian airports put together is less than that handled by individual airports like Hong Kong, Memphis, and Shanghai. In India, the highest quantum of cargo throughput is handled at Mumbai airport, accounting to 31% of the total cargo volume share of the nation in 2019.

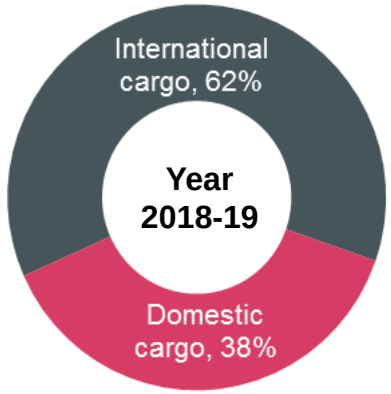
A significant potential lies for the Indian airports for transforming to transshipment hub. Given its geographic location, India is well placed to capitalize on this opportunity. With the neighboring countries of India, particularly Bangladesh and Sri Lanka, having sizeable international trade with Europe and US, India has an opportunity to emerge as the preferred transshipment hub for these neighboring countries.

Trade Agreements concluded by India with Asian countries like Bangladesh, Nepal, Japan, Malaysia and South Korea, and the India-EU FTA are expected to give a big boost to improve trade between these regions and develop a transshipment hubs FAEZC.

Growth in International and Domestic air-cargo handled at India airports over years

Source: Airports Authority of India (AAI)





Air cargo infrastructure in India is seldom planned for medium and long term requirements and thus is arguably inadequate and overloaded.

Key challenges

Aviation logistics in the country today is confronted with multitude of serious issues like inordinate dwell times, lengthy cargo processing times at cargo terminals, missing cargo, damaged cargo, etc. Comparison of performance standards for some of the key parameters of Indian Air Cargo Industry with other countries shows substantial gaps in the existing supply chain.

1 Lack of integrated infrastructure development

There has been a lack of planned and integrated infrastructure development of airports to cater to the needs of cargo business. This includes shortage of landside truck docks, vehicle holding area, airside operational space, and specialized storage and handling facilities for hazardous and valuable cargo.

2 Inadequate cold-chain storage

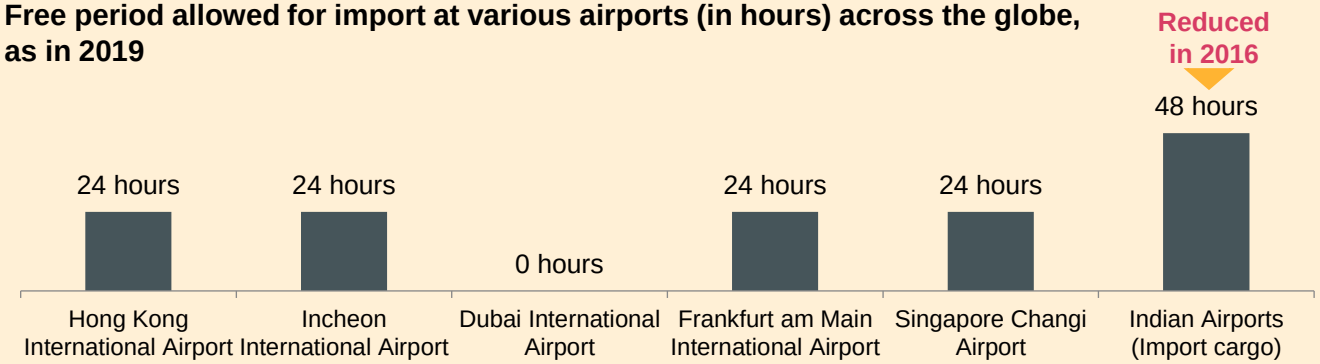
There have been inadequate investments in cold chain infrastructure (temperature-controlled warehouses, trucks). Often, cold-storages are located within the city, far from airports.

3 Globally uncompetitive warehousing infrastructure

Compared to the global airports, Indian airports are lacking significantly in terms of warehousing infrastructure.

Free period at Indian airports, compared to global airports

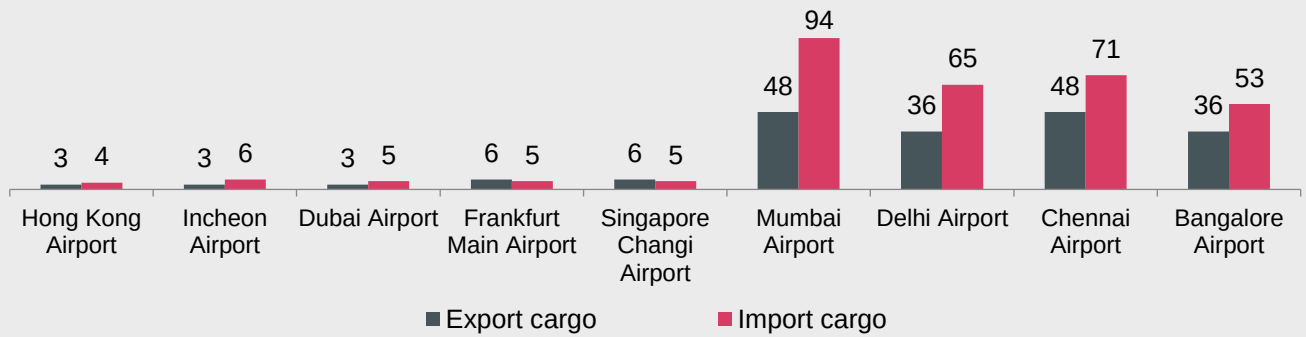
Free period allowed for import at various airports (in hours) across the globe, as in 2019



Source: Airport websites; Directorate General of Civil Aviation, GoI

Dwell time at Indian airports, compared to global airports

Export and import cargo dwell time at various airports (in hours) across the globe, as in 2019



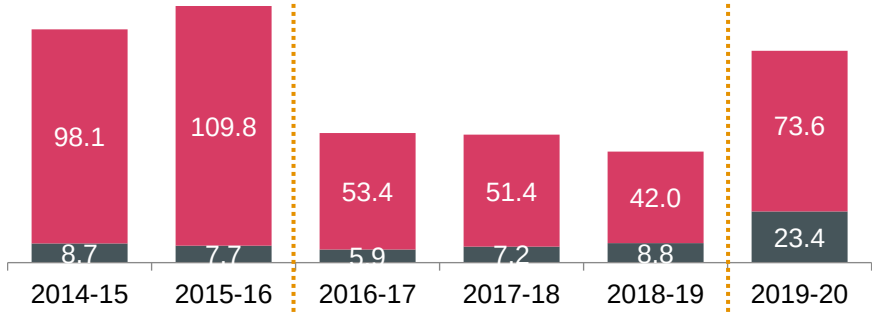
Source: Airports Council International (ACI); Directorate General of Civil Aviation, GoI

Some of the Indian airports are suffering from congestion and decreasing executive efficiency, resulting in an increase in cargo dwell time and demurrage costs.

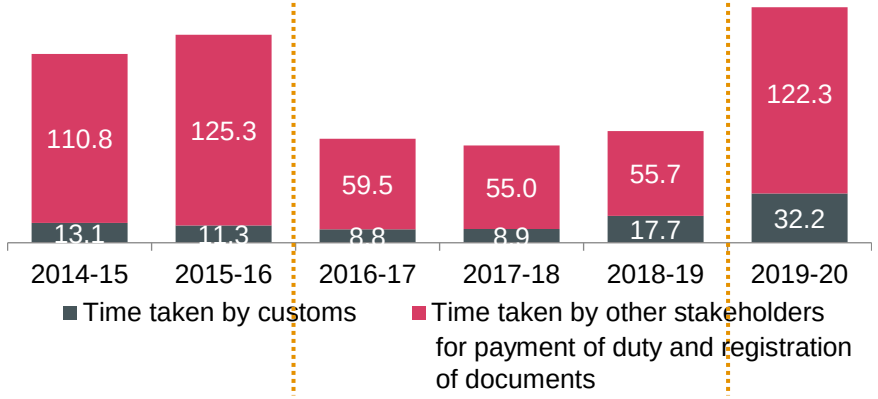
National Civil Aviation Policy (NCAP), 2016

National Air Cargo Policy (NACP), 2019

Cargo dwell time at Delhi International Airport (in hours)



Cargo dwell time at Mumbai International Airport (in hours)



Cargo Dwell time at Indian Airports

Cargo Dwell time is one of the key performance indicators of cargo terminal operational efficiency at any airport. As per the airport customs data, at Indian Airports, the dwell time is higher than other countries mostly because permitted Free period is high.

The dwell time depends on several factors that range from regulatory policies, airport infrastructure, airport access infrastructure, IT systems, level of automation, airline efficiency, level of adoption of technology, etc. Thus, to improve the airport's' efficiency, integrated development of infrastructure should be targeted with improvement in logistics and warehousing demands.

Key observations

1 Congestion and inefficient cargo handling operations

Several airports in India are suffering from congestion as well as decreasing executive efficiency in loading and discharging, which resulted in an increase in lay-time and demurrage costs. To curb this cost, the Government of India has taken several steps including the reduction of the free period for import air cargo from 72 to 48 hours, under National Civil Aviation Policy (NCAP), 2016, which resulted in average ~50% reduction in dwell time.

2 Delay due to economic decline

Across all major airports in India, it is observed that the average dwell times between both import and export had dropped significantly since 2016-17. However, the year 2019 and 2020 witnessed increase in delay, owing to the US-China trade war and COVID-19 scenario.

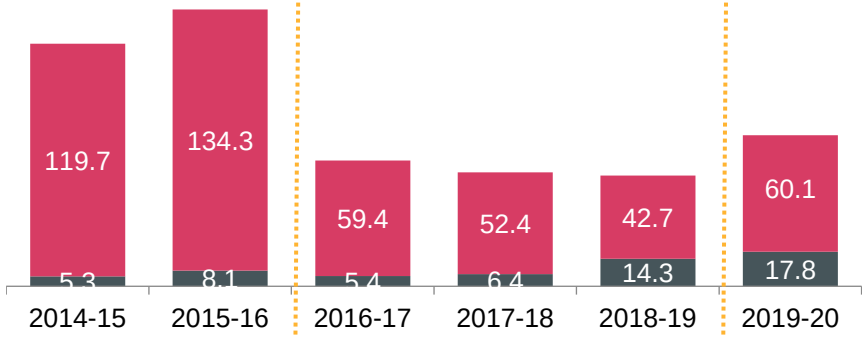
Source: Directorate General of Civil Aviation, GoI

To improve the airport's' efficiency, integrated development of infrastructure should be targeted with improvement in logistics and warehousing operational efficiencies.

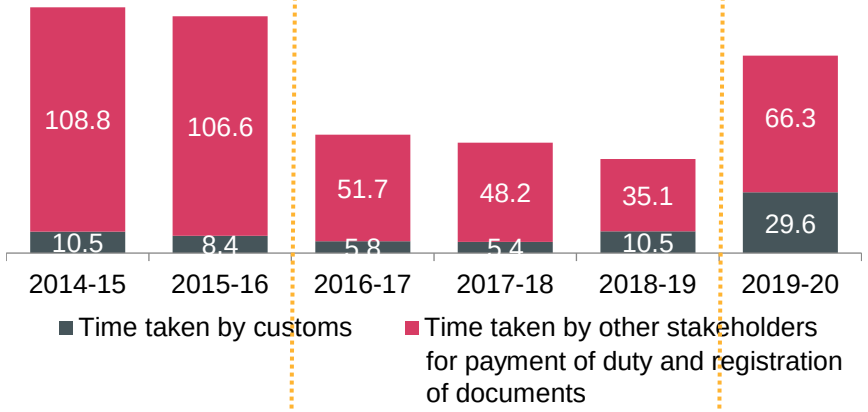
National Civil Aviation Policy (NCAP), 2016

National Air Cargo Policy (NACP), 2019

Cargo dwell time at Bangalore International Airport (in hours)



Cargo dwell time at Chennai International Airport (in hours)



Potential opportunities

Dwelling of goods and its consequent costs is one of the major problem at Indian airports, which is expected to be compounded with the growth of the volumes of trade. When goods' dwelling time is shorter, it implies that the airport is performing efficiently at all stages from discharging of cargos until clearing from the customs.

Reduction in free period

Implementation of National Civil Aviation Policy (NCAP), 2016, witnessed a reduction in dwell time, owing to reduced free period for import cargo, from 72 hours to 48 hours. Increased reduction in free period can result in further improvement of dwell time.

Improved share of transhipment cargo

Bulk of the cargo throughput in international hub airports are transshipment cargo, which does not have to undergo customs clearances, unlike the situation in India where the transshipment component is an insignificant proportion of the total throughput handled.

Industrial development

National Air Cargo Policy (NACP), 2019 promotes industrial activities in the vicinity of international airports of the nation. Development of Industrial parks, SEZ, and Free Trade Zones (FTZ) would likely encourage the growth of air cargo traffic in the nation.

Warehousing efficiency

International standards should be aimed for the development and design of airport cargo terminals. Warehousing operations are largely dependent on the business model and processes to be adopted, which in turn is dependent on nature of operations, mix of different types of cargo, level of automation planned, volume of cargo to be handled, peak time load factor, customs procedure in a particular location, and storage period of import cargo prior to delivery of cargo.

Source: Directorate General of Civil Aviation, GoI

Lack of adequate and appropriate air-cargo infrastructure at airports remains the key stumbling block to the future growth of the air cargo sector in India.

Warehousing efficiency at Indian Airports

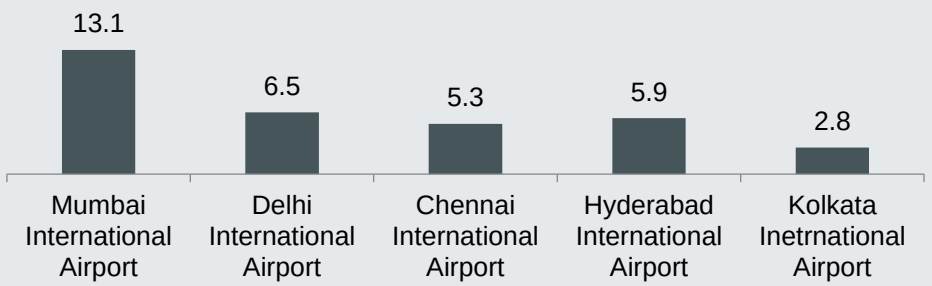
International standard for throughput efficiency measured in terms of tonnage handled per unit area is linked to the total volume of cargo handled in that terminal in a year.

Annual Throughput (in Tonnes)	Throughput per unit area covered
Less than 50 thousand	5 Tonnes /sqm
50 thousand to 100 thousand	8 Tonnes /sqm
100 thousand to 250 thousand	10 Tonnes /sqm
More than 250 thousand	17 Tonnes /sqm

Source: World Bank Report on Air Freight Market Study

Indian airports warehousing efficiency (in tonnes/ sqm)

Source: Airport websites; ASCELA Analysis



At the major gateway airports of India, overall handling efficiency in the warehouse is estimated to range from 3.14 to 13.1 tonnes per square meter per annum. Invariably for inbound cargo the tonnage handled per square meter of covered area is lower than that of out-bound cargo

1	Mumbai International Airport	**Throughput - 676,972 TPA** Warehousing area - 51,719 sqm	Highly congested operations with critical need for development of warehouses
2	Delhi International Airport	**Throughput - 651,973 TPA** Warehousing area 100,000 sqm	Congested in-bound cargo handling operation in some of the airport terminals
3	Chennai International Airport	**Throughput - 317,494 TPA** Warehousing area - 59,828 sqm	Warehousing area and infrastructure needs up-gradation for quick operations
4	Hyderabad International Airport	**Throughput - 83,954 TPA** Warehousing area - 14,330 sqm	Insufficient warehousing area, dedicated pharmaceutical cold storage facility.
5	Kolkata International Airport	**Throughput - 61,244 TPA** Warehousing area – 21,906 sqm	Congested operations with critical need for development of warehouses

Best practices around the world

Airport authorities around the world have realized the vitality of logistics and supply-chain management, and are increasingly adopting measures to create competitive ecosystem.

Economic Clusters around Airports

Free Trade Zone at Incheon International Airport

The Free Economic Zone of Incheon International Airport, located in the center of Northeast Asia, creates an international business environment by providing convenient international customs procedures, duty abatement and other various incentives.

Incheon Free Economic Zone (IFEZ) was planned to be a self-contained living and business district, featuring air and sea transportation, a logistics complex, an international business center, financial services, residences, schools and hospitals, and shopping and entertainment centers.

Dubai Flower Centre

Dubai Flower Center, a multistory facility located next to the Dubai Cargo Village around Dubai Cargo Mega Terminal, is possibly the most advanced cold storage. It is designed for the storage and processing of flowers imported primarily from Africa for both the local market and for distribution to the region.

The perishable handling area in Dubai Cargo Mega Terminal is about 4,623 sqm, with 3,927 sqm of 218 individual cells of temperature zones.

Key pressing issues

In developing country like India, air logistics sector is in booming stage and grabbing opportunities to grow infinitely. However, it is subject to various challenges.

1

Non-availability of land parcels

The biggest challenge in developing FTZs around Indian airports currently is the availability of feasible and affordable land parcels.

2

Infrastructural bottlenecks

In order to cater to the growing demand of air cargo, highly automated infrastructure is needed at international airports of India, which is a major challenge.

3

Insufficient feeder services

Development of FTZs and SEZs would require efficient connectivity with hinterland for timely clearing of warehouses, which is currently absent.

Best practices around the world (contd..)

Operational efficiencies are tapped by developing efficient and smart storage facilities to enhance the global increase in air cargo.

Dedicated warehousing solutions

Warehousing at Hong Kong International Airport (HKIA)

Since July 2017, HKIA has been recognized as an IATA CEIV Pharma Partner Airport by offering a complete, efficient and high standard end-to-end solution of pharmaceutical handling in airside. With the cargo handling capacity of over 5 MTPA, HKIA serves a huge location for capturing temperature-controlled air transshipments.

A new facility, proposed at Kwo Lo Wan (KLW) in HKIA South Cargo Precinct is expected to boost the supply of premium warehouse space in the city by 15-20%.

Refrigerated cold-storage at Nairobi

Kenya's Jomo Kenyatta International Airport in Nairobi has a pair of on-airport refrigerated storage facilities operated by the ground-handling subsidiary of Kenya Airways, as well as a stand-alone cold storage operated by DHL on the airport and Swiss port off the airport. These are highly automated and have larger utilization.

A new cargo terminal for perishables and dry cargo was set-up in Nairobi in 2018, with an annual capacity of 80,000 TPA.

Key highlights

Amidst the increasing demand induced by reforms in the sector, investor's are shifting their interests towards logistics and warehousing sector.

1

Dedicated cold-storage

Air cargo in India has witnessed huge increase in share of pharmaceuticals and chemicals transportation. Development of dedicated storage should be encouraged.

2

Smart solutions for E-commerce

In the current scenario, share of E-retail is expected to rise steadily in the coming years, and demand for warehouses would likely increase proportionately as well.

3

Warehouse consolidation

Warehouse consolidation results in averaging out of variability in individual demand and turn-around time, resulting in lower risk of aggregate demand variability.

Upcoming developments in air-cargo space

Indian airports are witnessing several developments in the air cargo space. The sector, however, is growing at a very limited pace.

Indian government is eyeing for integrated development of air cargo complexes at International Airports of the country.

1 **Free Trade Zone (FTZ) at Hyderabad International Airport**

GMR Hyderabad International Airport, has signed an agreement with Spice Jet in March 2020, to carry out warehousing, distribution and trading activity within the Free Trade Warehousing Zone of the GMR Aerospace and Industrial Park, a multiproduct SEZ housed in Hyderabad Airport City. The facility is planned on ~1.6 acres of land within the SEZ area.

2 **Cargo City at Delhi Airport**

The Cargo City infrastructure at Delhi Airport is envisaged to house smart warehousing and logistics facilities spanning around 100,000 sqm area, integrated with the Cargo Terminals. With its proximity to the Cargo Terminals and main access road, the Cargo City would likely offer a great advantage to the Freight Forwarders and Logistics companies to fulfill their needs for interim warehousing, consolidation and value add activities, thus, significantly enhancing the efficiency of air cargo supply chain.

3 **FTZ at Bangalore International Airport**

Government of Bangalore has proposed the development of an FTZ at Kempegowda International Airport of Bangalore, which would likely have warehousing, storage, and distribution facilities for trade, trans-shipment and re-export operations.

Navi Mumbai Airport Influence Notified Area (NAINA)

The upcoming Navi Mumbai airport is expected to become operational in a few years, and would provide a much needed respite to the existing saturated airport of Mumbai. The undeveloped region around the airport is to be developed under the 'Navi Mumbai Airport Influence Notified Area' (NAINA), which would be spread over 500 sqkm.

To promote industrial development in Maharashtra, the state government introduced a policy for development modeled as 'Integrated Industrial Area' (IIA), which will guide the development framework for project NAINA. The government has decided to develop the area around the new airport in a planned way.

Integrated development

Huge residential, commercial, educational, entertainment, trading, cargo, port and industrial activity hubs are planned in this region that would create manufacturing supply in the region and generate warehousing demand in the vicinity.

Warehousing requirements

A large amount of space is dedicated to cater to EXIM demands, due to proximity to existing ports and existing manufacturing hubs in Maharashtra. Some of the major e-commerce companies in India have already started taking up land parcels to construct captive warehouses for catering to this future demand.

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Incentives and Policy Support

Lack of consistent policy for allotment of dedicated facilities at any of the Indian airports for dedicated freighter air craft and air express operators.

Policy incentives in India

1990 — Open Sky Policy, 1990

The 'Air Cargo Open Sky Policy' was adopted in 1990 initially for 3 years and further got extended in 1992 on a permanent basis.

According to this, any airline, whether Domestic or Foreign carriers, which met specified operational and safety requirements, were allowed to operate scheduled and non-scheduled cargo services to/from any airports in India wherever customs facilities are available.

1992 — FDI Policy in the Civil Aviation sector, 2012

The Government of India decided to permit foreign airlines also to invest, in the capital of Indian companies, operating scheduled and non-scheduled air transport services, up to the limit of 49% of their paid-up capital, under Department of Industrial Policy and Promotion.

The investments so made would need to comply with the relevant regulations of Securities and Exchange Board of India (SEBI).

2016 — National Civil Aviation Policy (NCAP), 2016

The policy aims at improving efficiency of the airport by reducing dwell time and promoting "Make in India" mission. NCAP constituted the Air Cargo Logistics Promotion Board (ACLPB) to promote growth in air cargo by cost reduction, efficiency improvement and better inter-ministerial coordination.

The policy also reduced of imported air-cargo to 48 hours from 72 hours, in order to reduce congestion at airports.

2019 — National Air Cargo Policy (NACP), 2019

NACP, 2019 aims at making India among the top five air freight markets by 2025, besides creating air transport shipment hubs at all major airports over the next six years.

The cargo policy also seeks to establish agreements between national carriers/ freighters and integrators to improve domestic connectivity and promote the development of a last mile/first mile connectivity.

ASCELA's Viewpoint

Growing demand for air freight transportation services has opened new challenges for air cargo service providers

Key opportunities

The evolving e-commerce has put pressure on sales channels for faster delivery and an for ensuring optimum supply chain. This scenario brings opportunities for the third-party logistics (3PLs) and warehousing services to integrate with the air e-commerce channel.

Owing to the continued growth in online shopping, many third-party logistics are offering more multi-modal services, which include air cargo service as a critical mode of transportation. Furthermore, the growth in the overall cross-border e-commerce is anticipated to boost the demand for the air cargo industry.

1 Planning of smart storage facilities

For the logistics players to succeed, efficient and smart storage facilities need to be developed to assist the global increase in air cargo. This would further lead to operational efficiency, in terms of reduced time and cost of handling cargo.

2 Development of SEZs and FTZs in proximity to airports

Special economic zones (SEZ), free trade zones (FTZ), and the bonded warehouses should be planned around airports to cater to significant warehousing needs for the freight moving in and out.

3 Policy incentives to invite stakeholders

The air freight industry is moderately fragmented in nature. However, the industry is dominated by some of the major players operating in multiple regions across the world. National and regional level policies should be devised to invite more players into the sector.

4 Integrations in cargo operations

FedEx Corporation, one of the top air cargo carriers, acquired regional express players to further increase its service range. Similar collaborations would likely lead to improved supply chain and logistics environment.

5 Adoption of innovative technologies

Airlines need to focus on implementing fuel-efficient solutions and accommodate innovative technologies to provide cost-effective services.

WRITE TO US

ASCELA ADVISORS PRIVATE LIMITED

311-312, 3rd Floor, Good Earth City Centre, Sector-50, Gurgaon- 122018 (HR), India.

contact@ascelaadvisors.com

www.ascelaadvisors.com