



Challenges faced by aviation sector in cargo handling during Covid-19 pandemic situation – A study with reference to Kolkata airport

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Abstract

The paper aims at understanding the problems of air cargo operations at Kolkata Airport. The study is about identifying the problems during the import and export of the cargo through air transport especially during COVID. There are various stages of the process involved in the import and export of cargo. Some of the major processes are Export operations, Import Operations, AWB (Airway Bill) management, Freight Forwarding, Customs clearance, Transportation. This study gives an idea about problems and challenges in air cargo operations. The problems like a procedural bottleneck of customs clearance, Congestion at airport cargo terminal, reducing dwell time, unskilled workforce, Inefficient use of belly cargo capacity, Forecasting Airline cargo capacity and space allocation, challenges of handling hazardous cargo and dangerous cargo etc. The study attempts to establish the **hypothesis** that through increased operational efficiency in all aspects the cargo traffic volume at Kolkata Airport can be increased resulting in higher revenues for Airlines.

Keywords

Cargo operations, pandemic, freight, dangerous load, export, customs, belly cargo, integrators, freighters, domestic and international warehousing, on-time performance, airline efficiencies, freight process, cargo traffic, Kolkata airport, carriers, automation and retrieval systems.

Background and Introduction of the concept of study

What is air freight? Air freight is the volume of freight, express, and diplomatic bags carried on each flight stage (operation of an aircraft from take off to its next landing), measured in metric tons times kilometres travelled.

Airlines transport over 52 million metric tons of goods a year, representing more than 35% of global trade by value but less than 1% of world trade by volume. That is equivalent to \$6.8 trillion worth of goods annually, or \$18.6 billion worth of goods

every day and therefore Air Cargo industry is considered as a barometer of Global Economic Health. From the point of view of Airline industry, Air Cargo Services contribute near about 20% of their revenue. India's international Air Trade to GDP ratio has doubled from 4% to 8% in the last twenty years. Air cargo is a trade facilitator that contributes to global economic development and creates millions of jobs. The global economy depends on the ability to deliver high-quality products at competitive prices to consumers worldwide.

The answer to the question 'Why is there a relationship between a product's value and its propensity to be shipped by air transportation?' draws us to dwell into the **benefits of air cargo**:

- High value commodities moving in small shipment size
- Addressing products that are time sensitivity
- High value commodities require security
- Speed of delivery helps to reduce the cost of capital in terms of interest.
- Regular & constant speedy inflow helps in reducing inventory cost.

The Types of Air Cargo

- **All cargo** the all-cargo carriers operate a dedicated fleet of freighter aircraft. Some examples of all cargo carriers are Cargolux and Atlas Air. These carriers seldom deal directly with individual shippers, and instead typically work with intermediaries called freight forwarders.
- **Belly cargo carriers** are passenger-only airlines that carry cargo in the holds of their aircraft as an additional revenue stream. Between 40 and 50% of global airfreight is moved as belly cargo.
- **Integrators (door to door)** The integrators, also known as express carriers, are firms that provide door-to-door service such as UPS, FedEx, and DHL. Many of these firms operate dedicated all cargo aircraft, delivery vehicles, and cargo hubs. They operate the entire transportation network from aircraft and delivery vehicles to hubs (both ground and air) and the downstream transportation network to deliver the cargo to its final destination.
- **Combination carriers** Combination carriers fly both passenger and freighter aircraft. There are many commercial aircraft suitable for carrying cargo such as the Boeing 747 and the bigger An-124, which was purposely built for easy conversion into a cargo aircraft.

Aircraft employ standardized quick-loading containers known as unit load devices (ULDs), comparable to ISO containers on cargo ships. ULDs can be stowed in the lower decks (front and rear) of a number of wide-body aircraft, and on the main deck of some narrow-bodies. Some dedicated cargo planes have a large opening front for loading. Factors like value of a product, Physical Characteristics, Perishability, Demand predictability, Geographic market transportation contributing to total distribution cost (TDC) plays a pivotal role in making the modal choice.

Cargo handling is the segment of the supply chain which processes goods landside in the cargo facility. From the delivery at the airport of origin until it is ready for loading on the plane, to the unloading at destination and handover to the consignee/freight forwarder, many steps are involved with cargo handling that must be closely followed to ensure shipments are delivered safely and securely.



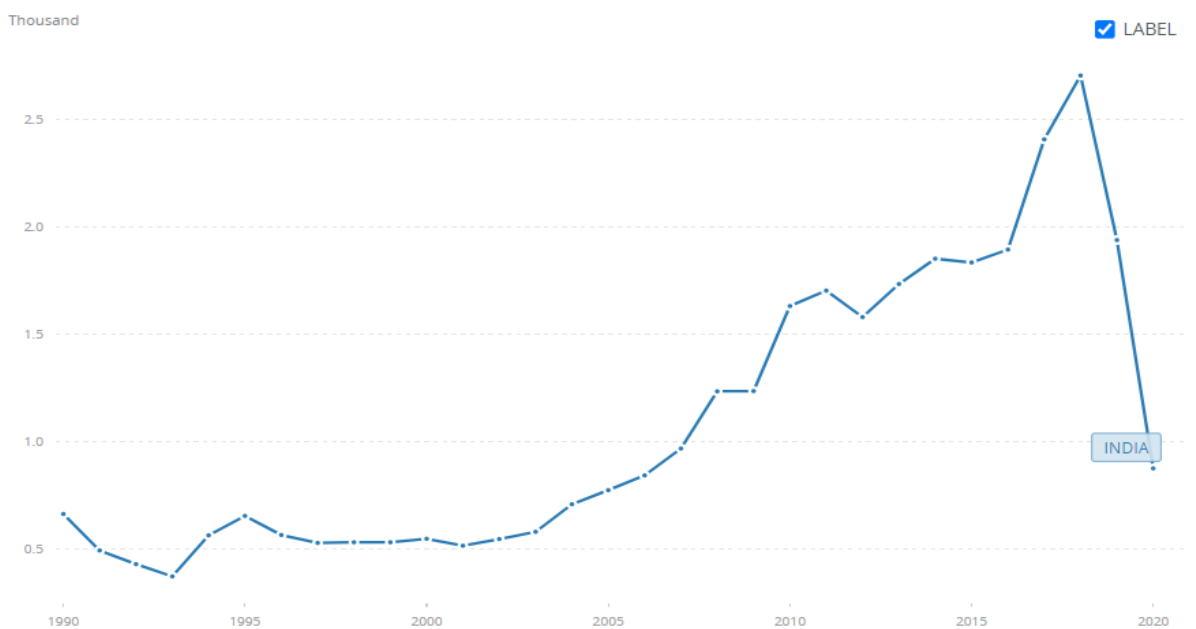
The effects of COVID-19 on the industry dramatically affected the air industry including air cargo. Available cargo tonne-kilometres (ACTK) fell industry-wide by 21.4% year-on-year in 2020. However, by the end of the year, industry-wide cargo tonne-kilometres had returned to near pre-COVID values. With so much air cargo being shipped worldwide and so many different parties involved in the supply chain, it is important to take a look at cargo handling for air transport.

The share of medical goods in world merchandise trade grew from 5.3 per cent in 2019 to 6.6 per cent in 2020.

“Air cargo had a stellar year in 2021. For many airlines, it provided a vital source of revenue as passenger demand remained in the doldrums due to Covid-19 travel restrictions. Growth opportunities, however, were lost due to the pressures of labour shortages and constraints across the logistics system. Overall, economic conditions do point towards a strong 2022,” said Willie Walsh, IATA’s Director General.

Air transport, freight (million ton-km) - India

International Civil Aviation Organization, Civil Aviation Statistics of the World and ICAO staff estimates.



Year	Air transport, freight (million ton-km)
1990	663
1991	493
1992	429
1993	372
1994	564
1995	654
1996	565
1997	528
1998	531
1999	531
2000	548
2001	515
2002	546
2003	580
2004	708
2005	774
2006	843
2007	968
2008	1234
2009	1235
2010	1631
2011	1703
2012	1579
2013	1734
2014	1851
2015	1834
2016	1894
2017	2407
2018	2704
2019	1938
2020	875

Data from database: World Development Indicators

Last Updated: 05/25/2022

Netaji Subhash Chandra Bose International Airport (NSCBIA)

Netaji Subhas Chandra Bose International Airport is an international airport located in Kolkata, West Bengal, India is the aviation hub for the entire eastern and north-eastern India. It is located approximately 15 kilometres (9.3 mi) from the city centre. The airport is locally known as Kolkata Airport and Dum Dum Airport before being renamed in 5th October 1995 after Netaji Subhas Chandra Bose, a prominent leader of the Indian independence movement. Kolkata Airport is one of the oldest airports in India; it was opened in 1924.

Spread over an area of 1,641 acres (664 ha), Kolkata Airport is one of two international airports operating in West Bengal, the other being Bagdogra. The airport is a major centre for flights to Northeast India, Bangladesh, Bhutan, China, Southeast Asia and the Middle Eastern cities of Dubai, Abu Dhabi, and Doha. In 2014 and 2015, Kolkata Airport won the title of Best Improved Airport in the Asia-Pacific region awarded by the Airport Council International. The airport is awarded as best airport by hygiene measures in Asia-Pacific in 2020 by Airports Council International.

The 1990s saw new growth for Calcutta Airport, as the Indian aviation industry saw the arrival of new airlines such as Jet Airways and Air Sahara. A new domestic terminal named Terminal 2 was opened in 1995 making the international one Terminal 1, and the airport was renamed in honour of Netaji Subhas Chandra Bose. In 2000, a new international arrival hall was opened.

2005 saw the growth of low-cost carriers in the Indian aviation sector, with new airlines including SpiceJet, IndiGo, and Kingfisher Airlines. This led to a dramatic rise in passenger numbers at the airport. Overcrowding in both terminals led to the implementation of a comprehensive modernisation plan for the airport.

The modernisation plan included some improvements of the airport's existing terminals, including the addition of extra ticketing counters, check-in kiosks, and cafes to the domestic terminal in 2009. However, the need to replace the airport's terminals entirely led to plans for a new integrated terminal, known as T2 to differentiate it from the older domestic block, to serve both international and domestic destinations.

Commercial operations were intended to start on 23 January 2013, the 116th birth anniversary of Netaji Subhas Chandra Bose. However, the shift to the new terminal was only completed on 16 March 2013.

Key facts on Air Cargo at Netaji Subhash Chandra Bose International Airport:

- The international air cargo complex is located 1/2 km north of international terminal building with well-connected road infrastructure for smooth functioning of air cargo services.
- The total covered area of air cargo terminal is 21,906 square meter and its annual holding capacity including transshipment is 120000 MT. as of 1.4.13.
- There are four parking bays exclusively for freighter fleet, which can accommodate up to B-747 type of aircraft.
- AAI has created this air cargo terminal with various facilities for processing air cargo in the terminal building at par with any international airport.
- All operating airlines and other agencies, which are connected with the clearance and pre-shipment formalities, have been accommodated under one roof at air cargo complex.
- AAI was appointed as a Custodian of Import and Export cargo as per Custom notification 2/78 under section of 45 of Customs Act, 1962.
- Most of the regulatory and facilitation were established under one roof.
- The cargo terminal has three wings for processing of Export, Import cargo and Unaccompanied Baggage (Import) besides Disposal Unit for disposal of unclaimed / uncleared cargo.
- Kolkata International Air Cargo Terminal provides air cargo services to entire Eastern and Northern-Eastern region for transshipment cargo.
- In international freight transactions it connects six regions in the world, which are enriched in global market - South-Asian, South-East Asian Countries, Western Countries, Middle East Countries, Central Asia.
- No demurrage charges are leviable on cargo if cleared within prescribed free period.
- A Centre for Perishable Cargo with a handling capacity of 60 MT. is operational.

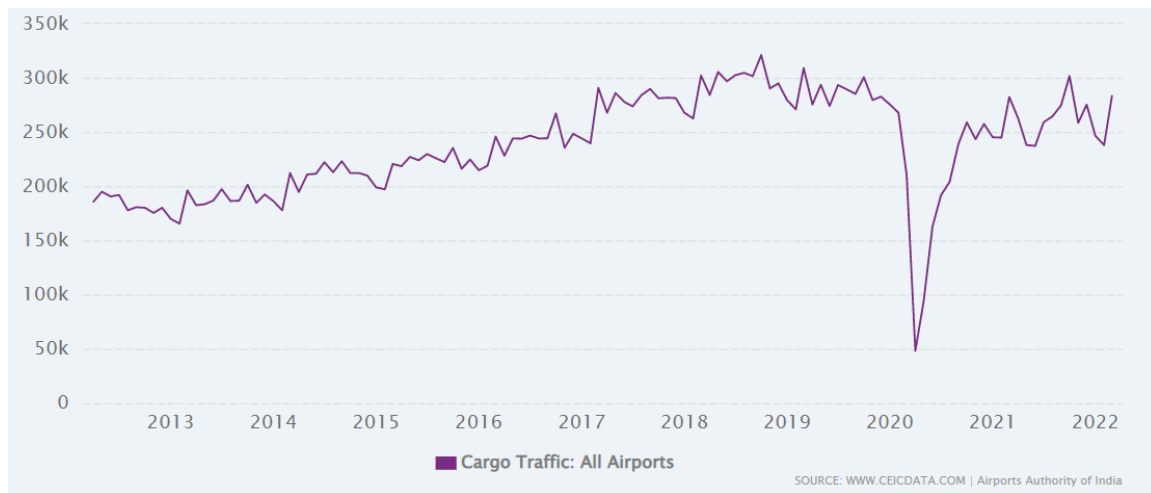
EXPORT WING

1	Covered Area	8,516 Sq. m
2	E.T.V. area	1,333 sqm
3	One time holding capacity	258 M.T.
4	Annual holding capacity	47,089 M.T.
5	Cargo Apron Capacity	2B-737 type & 2B-747 type

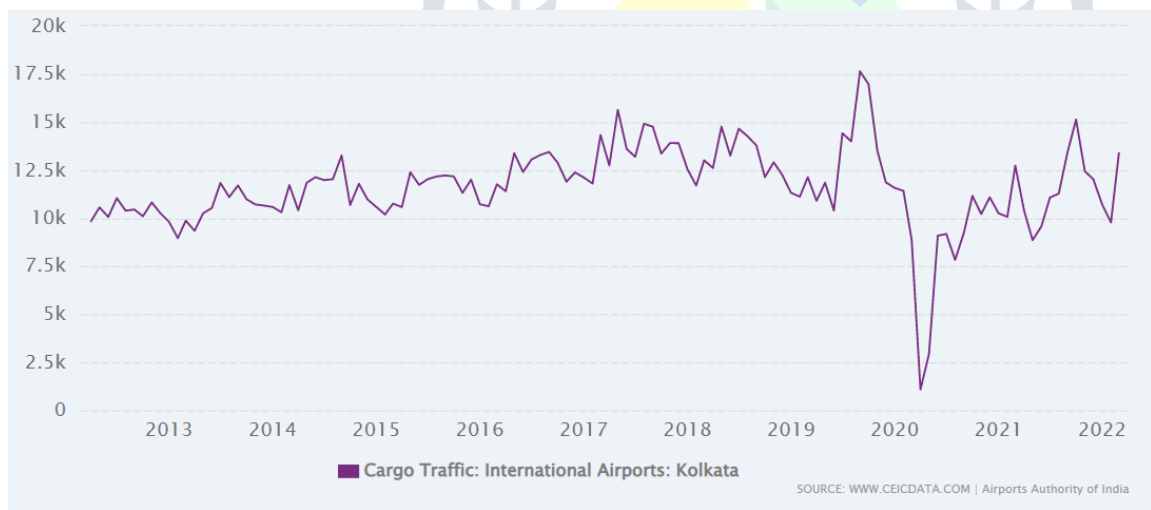
IMPORT WING

1	Import	13,390 Sq. m
2	Automated & Retrieval System (AS/RS)	1930 Sqm, Storage
3	One time holding capacity	513 M. T
4	Annual holding capacity	86748 M.T.
5	Transshipment Area	80 Sq. m
6	7 Hazardous cargos shed	82 Sq. m

All Airports (2012-2022) from 1st April'12 to 31st March'22 Cargo Traffic in Ton – 10 years span

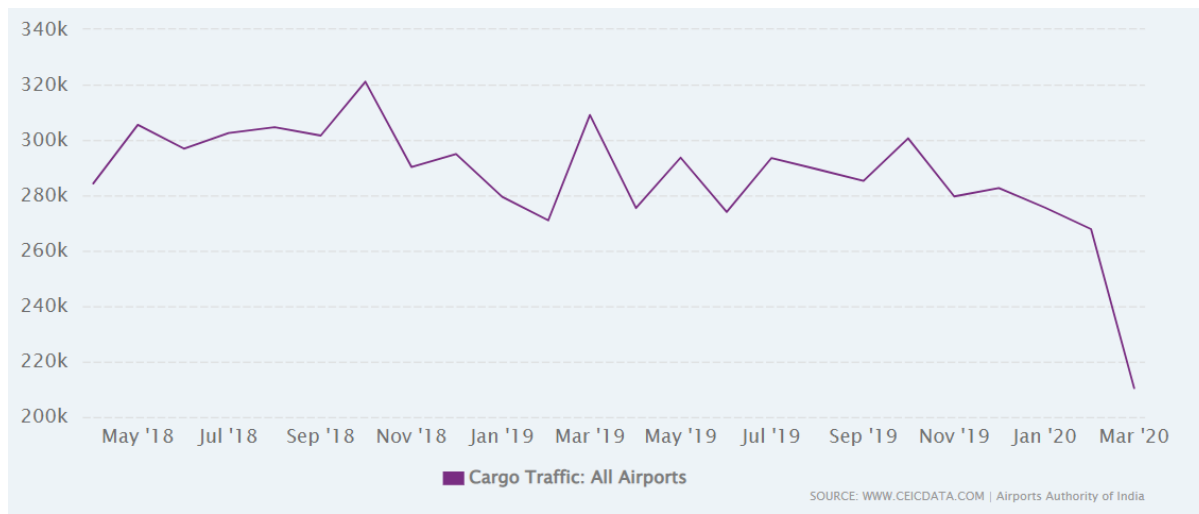


NSCBIA International Airport from (2012-2022) 1st April'12 to 31st March'22 Cargo Traffic in Ton – 10 years span

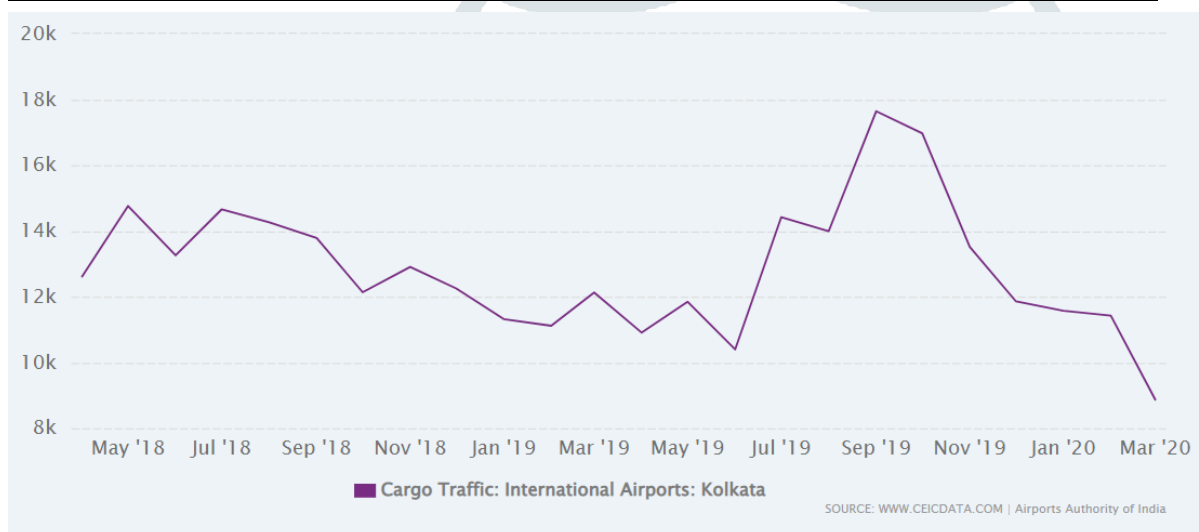


The last 10 years span in Cargo Traffic for All India Airports compared to Kolkata Airport shows a clear increase in cargo traffic year on year basis pushing the average higher. A huge positive sign that was immensely affected by COVID pushing it on backfoot.

All Airports in India (2018-2020) from 1st April'18 to 31st March'20 Cargo Traffic in Ton

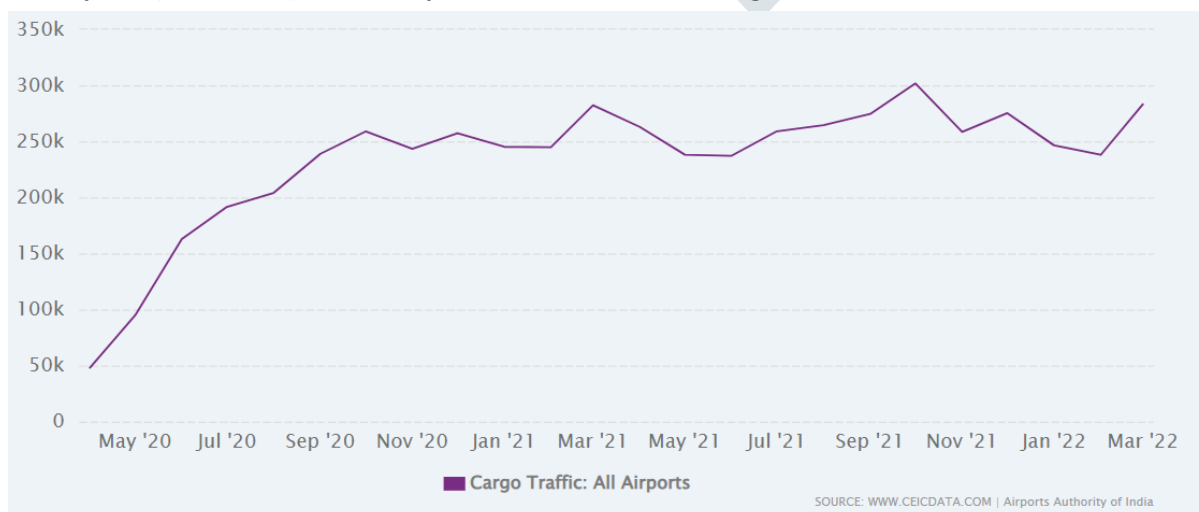


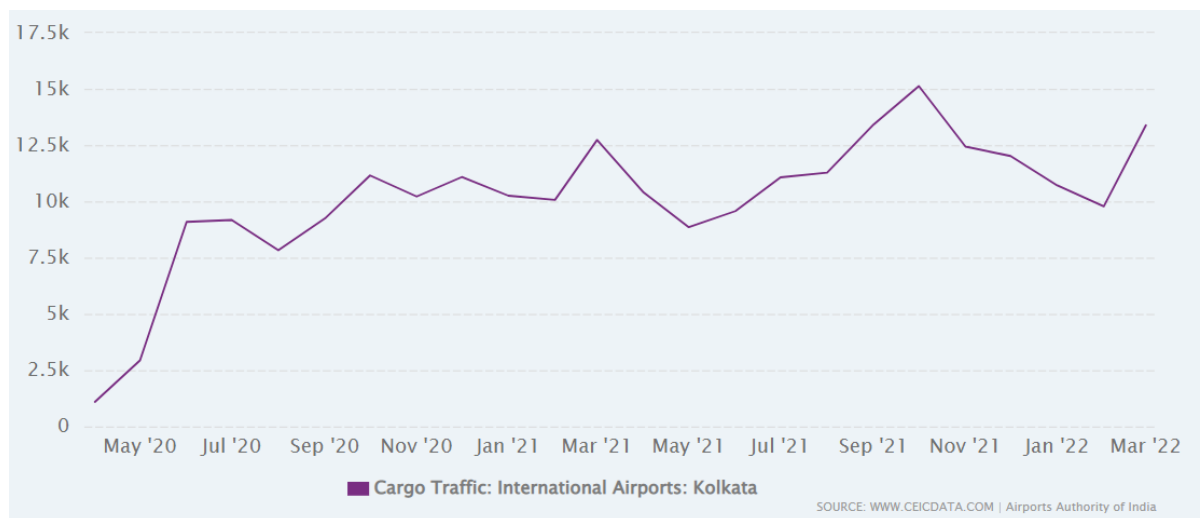
NSCBIA International Airport (2018-2020) from 1st April'18 to 31st March'20 Cargo Traffic in Ton



The pre-covid span (2years) in Cargo Traffic for All India Airports compared to Kolkata Airport shows a somewhat similar trend. The traffic increased significantly in Sep'19 for Kolkata Airport as compared to May'18 while the increase is also reflected in all India traffic but not higher than it was in Nov'18. Thereafter the traffic fell sharply as it was approaching the COVID phase in March'22.

All Airports (2020-2022) from 1st April'20 to 31st March'22 Cargo Traffic in Ton



NSCBIA International Airport (2020-2022) from 1st April'20 to 31st March'22 Cargo Traffic in Ton

The in covid & post covid situation has shown obvious signs of recovery at both all India level and for Kolkata Airport.

Objective & Hypothesis of the study

The objective of the study is to understand the **challenges** in cargo operations not allowing optimum utilization of the capacity that contributes to increase in air cargo traffic volume. The hypothesis drawn is that by increased operational efficiency in various aspects, introduction of best-in-class technology & developing future technologies the optimum utilization of capacity is possible to attain at Kolkata Airport making it profitable for all stakeholders especially Airlines which are looking for a solid foundation in cargo revenues guided by certaintiesto cover their cost in a better way.

Key performance indicators of Air Cargo Logistics operations**Dwell Time- a key Performance indicator**

One of the key performance indicators of cargo terminal operations in any airport is the dwell time. At Indian Airports, the Dwell time is higher than other countries because officially permitted Free period itself is 72 hours. Kolkata airport is also not an exception.

Throughout efficiency at cargo terminals

Processing of air cargo transaction is not carried out at the Air cargo terminal but at the Agents` facility known as Air Freight Station. Air Cargo logistics operations are processed and handled at the Airport premises wherein all stake holders play their respective roles as per defined guidelines laid down by the regulatory agencies and government. These are integrated functions and airport operators / custodians facilitate the functioning of all agencies at the airport premises, which is not the practice followed at other foreign airports.

Menace of Missing/Non-traceable Cargo

Cargo that is found missing at the time of loading of a particular flight and found within 24 hours of departure of that flight is defined to mean as missing cargo on exports side. On the imports, cargo that is short received on a flight and arrives on a subsequent flight of that carrier would be treated as missing cargo. Cargo that is missing at the time of loading (exports) or at the time-of-flight segregation (imports) and is eventually not found even up to 21 days of a global tracer having been initiated by the concerned carrier should be treated as untraceable or lost.

The menace of Missing and Non-traceability of cargo has serious implications for not only timely delivery of cargo but could also dent the image of the country in the international trade arena. This is therefore considered as one of the key performance indicators of air cargo operations. The carriers and forwarders reported experiences of having a high incidence of cargo not found at the time of segregation or eventual delivery. Very often even manifested cargo was reported to be missing which were mostly located subsequently after loss of precious time and also after suffering storage charges.

The issue of pilferage affects parts of the packages as some pieces from the packages are found missing, and it is not unusual to find full cartons missing at times. The instances of pilferages also account for missing cargo.

Key Challenges at Indian Airports (Including NSCBIA)

Infrastructure Bottlenecks

The Root cause analysis of the issues discussed in the previous chapter reveals challenges in the form of lack of enabling infrastructure, complicated regulatory processes and procedures, inadequate and poor quality of human resources deployment and lack of effective technological enablement of cargo handling supply chain are responsible for the current state of affairs in the air cargo logistics sector.

Inadequate and overloaded infrastructure facility

Airports were developed primarily from passenger standpoint of view, and thus requirement of cargo facility development was not taken seriously. Cargo is generally the last part to be thought of and is relegated to that part of the airport, considered not important otherwise. This leaves the entire logistics of cargo – infrastructure and facility in woefully inadequate and poorly managed area of the airport. Cargo infrastructure at any airport is just not the cargo terminal building that houses the warehouse but also the related facilities including special facilities for express freight, frozen foods, airmail, and hazardous goods. Infrastructure also includes specialized equipment's, connecting roads, truck parking terminal, public amenities like offices for intermediaries, public car parking area etc.

The development and design of any warehouse including airport cargo terminal is mainly dependent on the business model and processes to be adopted which in turn is dependent on :

- Nature of operations e.g., Air express
- mix of diverse types of cargo
- level of automation planned
- volume of cargo to be handled
- peak time load factor
- customs procedure in a particular location
- Nature of cargo to be handled - loose versus palletized
- Storage period of import cargo prior to delivery of cargo amongst other conditions.
-

Unfortunately, in most cases in the past, it is the other way round. The warehouse facility is first created and then the processes are fitted into it leading to inefficient operation and poorly developed infrastructure. It is important therefore the warehouses are planned based on the processes and business model adopted.

Gaps in Key facility infrastructure at Cargo terminals in Gateway airports

There has been a lack of planned and integrated development of airports to cater to the needs of cargo business. 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. Some of the key facility infrastructure which are lacking at majority of the air cargo complexes are:

- Shortage of landside truck docks, vehicle holding area and airside operational space
- Insufficient entry gates and lack of upgraded handling equipment and trolleys
- Lack of specialized storage and handling facilities for hazardous, radioactive, and valuable cargo
- Lack of sufficient cold storage capacity for perishables cargo

Because of the infrastructure overload, most of the airport warehouses are congested, leading to delay in the cargo processing. MIAL in their submissions has attributed the infrastructural inadequacy solely to the uneven utilization of transaction timings, inordinate delay in clearing of special products. These factors have contributed to the increased dwell time for both imports and exports. To decongest the warehouse, build up pallets (BUP) concept for export and import

should be considered. With the introduction of BUP by the shipper and forwarder, major reduction can be achieved in damage and pilferage and a faster acceptance can be achieved as compared to individual boxes and multiple handling. This can help in reducing dwell time and decongest the warehouse as well.

Bottlenecks in truck docking

The floor area at the truck dock is the first entry point for offloading the cargo before shifting for clearance. Reports²⁵ received from the users of cargo terminals indicate that dwell time for trucks waiting outside the Air Cargo Complex ranges from 8 to 12 hours in one of the major gateway airports during peak seasons. In today's competitive environment it is ironic that export cargo vehicles are not off loaded due to lack of adequate space availability. Limited number of truck docking bays for imports also is said to severely limit the ability of the cargo terminal operator to clear the cargo on time resulting in delay and accumulating daily back log of undelivered cargo.

Inadequate X-ray screening facilities and lack of associated trained workforce

The lack of adequate screening machines, coupled with the fact that there is a lack of machines that can screen built-up pallets (BUPs) creates accumulation of cargo at the land side, particularly more so when a large part of the cargo is tendered at the same time. There is an absence of ULD screening facilities for heavy and palletized cargo. Machines frequently break down, and there are no on-site engineers who can trouble-shoot and provide the solutions immediately. This stalls the clearance process and leads to a pile up.

Further, there is a lack of appropriate number of screeners who are qualified to scan the cargo on the x-ray machines. Key stakeholders complain about the lack of X-ray screeners, and the need to replace old X-ray machines. Users of Cargo Terminal at Chennai airport complained about the lack of X-ray Screeners and the need to replace Old X-ray machines urgently. The need to augment new x-ray machines backed by adequate number of X-ray Screeners was apparent for a casual visitor.

There is an immediate need to augment new X-ray machines backed by adequate number of X-ray screeners in almost all the air cargo terminals in the gateway airports in the country. There are norms for working hours and rest hours that apply to these X-ray screening officials and the lack of adequate number of such personnel leads to heavy pile up. There is no uniform break time for the staff working under different agencies in the warehouse. The break time (dinner break) of the various agencies being different, further adds to the chaos.

Absence of off-site facility such as Air Freight Station (AFS) for cargo processing

Traditionally almost all activities related to air cargo processing (including weighing, screening, customs examination, ULD formation, etc.) have been done at the Cargo terminals in the airport area. With the growth of cargo volume, the current space at most Cargo terminals in country is proving woefully inadequate, leading to severe congestion issues.

The concept of AFS was conceived as a means to reduce congestion in the airport premises, by permitting transfer of cargo to designate / customs notified freight Stations – AFS or ICDs through bonded trucking operations. This will facilitate greater throughput efficiency, reduce dwell time, and maximize the utilization of installed capacity. AFS is an innovative solution that would complement an Air Cargo Terminal. This concept of Off-Airport Cargo processing is well known globally and has been proved as a successful model in maritime cargo sector in India.

The enormous success of ICDs/CFS (Container Freight Station) in decongesting the Indian sea ports is an example worth emulating by the air cargo sector. An ICD / CFS is common user facility with public authority status. They are equipped with fixed installations and offer services for handling and temporary storage of import/export laden containers carried under customs transit by any applicable mode of transport. All the activities related to clearance of goods for home use, warehousing, temporary admissions, re-export, temporary storage for onward transit and outright export, transshipment, take place from such stations.

% Of the total cargo volume is transported in containers as compared to 30%, some ten years ago. Further, the consolidation of cargo through containerization led to reduction of transit time by more than 2/3rd and cut the cost of ocean freight by almost half during the past 10 years.

Customs have permitted transport of individual packages, container cargo and ULDs etc. for both export and import cargo clearance at Air Freight Stations (AFS). However, it has been noted that existing AFS' as notified by Customs have not been made operational. The key reasons for this non-operationalisation of AFS include Lack of enabling customs procedures in place for off- airport clearance facilities, absence of legal framework to ensure creation and utilization of AFS instead of mere notification of the facility, lack of enthusiasm on the part of Carriers and airport operators to support this concept.

Barriers with regard to operationalising the AFS should be removed without any further delay. It is vital that the concerned regulatory clearances are issued by Customs/BCAS and others permitting the bonded movement of cargo to and from the off-airport terminal.

AFS is not recommended to be mandatory under normal circumstances and it is only one of the options before the users and the industry. There cannot be a second opinion on such a choice being made available for the users. Further, there is no evidence to prove that operationising AFS will leave the airport operations unviable. If that is indeed the case, airports overseas which are often cited in bench marking of standards would not have promoted Off-airport facilities for processing of cargo.

It is already seen that a substantial proportion of cargo handled by airports in overseas (compared in earlier section) are processed and Customs cleared in off-site locations. If an operator finds it unviable to operate an AFS, there is no proposal here to force that operator to continue. It is once again left to the choice of the operator. However, it is important to ensure that barriers to operationalisation of AFS are removed so that those who want to make use of the facility are not denied that option particularly when there are issues being faced by the users as brought out repeatedly.

Special Cargo Infrastructure

Often express cargo and general cargo require special handling facilities for temperature sensitive cargo, pharmaceuticals, perishables, and Dangerous Goods. Dedicated and appropriate facilities are not available at all airports and hence there is a need for clear guidelines regarding the minimum infrastructure that an airport must mandatorily have for handling such shipments.

The same may also be based on the demand based on the location of different key industries which require special infrastructure e.g., clinical research, agri based exports, high tech, and electronic equipment etc. Exceptional areas for ample storage and handling of temperature sensitive cargo such as separate cold storage space for pharmaceuticals and perishable food items as well as for Dangerous Goods will have to be earmarked.

Cold chain facilities

The composition of trade in fresh agro-food products is shifting towards horticultural products, fruits and vegetables, fish, and spices which have led to an increase in demand for airfreight to meet the delivery times. The quality of logistics is an essential element of competitive advantage. Cost is equally important and provides an advantage for countries that already have well-developed air freight routes, whether through scheduled freighters or space on passenger flights.

Non-Resident Indian population living in Middle East and in other parts of the world continues to source a large part of their food stuff requirements including native grown vegetables from India. Belly space available from the passenger aircrafts flying to these destinations provides an ideal opportunity for exporters of such items to supply the perishable items of food at competitive prices. However, what is important is to enable the growth of this trade by facilitating appropriate infrastructure for handling, storage and faster movement of these goods for exports in the cargo terminals. Cool chain processes effectively safeguard product quality and maximize shelf life, thereby enhancing profitability.

Benchmarked against these best practices in the world, it is observed in most Indian airports including Kolkata there is need to focus more on these areas so that handling of e.g., agricultural and other perishables/pharmaceuticals for which India has potential is done in the best possible manner to boost their trade.

Lack of DG qualified staff leading to high turnaround time

There is an increase in the number of consignments that come under the classification of Dangerous Goods (DG), that are tendered for exports. However, handling of DG is still at a nascent stage in the Indian scenario. The forwarders and customs clearance staff are not well equipped to handle DG consignments and a similar scenario exists with the carriers.

The mandatory number of DG qualified staff with forwarders is said to be only on paper. Senior personnel (often owners of smaller companies) are the ones that are DG qualified. But the pressures of commerce cause them to accept DG consignments which are then cleared more on the basis of the knowledge of the DG expert of custodian or carrier as the DG qualified personnel of the forwarder are very senior and involved with other aspects of the business. A delay in clearance of DG therefore often adds to the congestion and creates an environment conducive to missing packages.

Security arrangements for the air cargo complex

There is a lack of adequate number of CCTV cameras covering from truck dock to final build up. It is important to note that the value of vulnerable cargo in trade- Gems & Jewellery, Laptops, Mobile phones, Mother Board has grown at a CAGR of 14% during 2003- 2010 and it constitutes about 50% of the total value of exports by Air. In the Air Freight Terminals (1-6) of Changi airport for example, there are more than 670 cameras (fixed and pan- tilt-zoom) and all cameras are centrally monitored at the control room in the AFT5, and all activities are digitally monitored.

Express Companies- Infrastructure related issues.

Express Delivery Service companies are strongly of the view that their operations require airport facilities with landside and city side access at all major international airports. Speed is of essence in express operations. In the absence of their facilities not having proximity to the cargo bays on the air side and sufficient truck docks on the city side with access to roads, then it is said that it could take as much time for shipments to get to the aircraft as it takes to fly to the destination.

Air side and city side access with adequate truck dock facilities is hence the most crucial factor in planning express infrastructure at airports. This should be incorporated in the Airport Master Plans in the planning stage itself after seeking feedback of users regarding their present and future requirements. Two types of infrastructure are required at all major airports (a) Dedicated facilities for express companies with large, dedicated operations and (b) Common user terminals for smaller operators.

At present dedicated and common user facilities for EDS are being provided based on the perception of the airport operator regarding availability of space and the priority that it wishes to accord to express operators. It is represented by the Express operators that often these considerations and criterion are determined by revenue considerations rather than as an obligation to provide dedicated space for express operators based on the recognition of Express operations as an important building block of the economy.

By virtue of their business models, EDS companies are required to make huge investments to develop state of the art express facilities; however, they are leased facilities for a short timeframe of 3 to 5 years and given short extensions annually with demands for huge escalations. This can potentially lead to lack of clarity and inability to budget future investments for development of world class infrastructure. There is no guarantee that they will be permitted to use the facility for appropriate period to justify the huge investments. Developing an express facility can typically range from Rs. 2 crores to Rs. 20 crores in investments depending on the level of automation, equipment and infrastructure developed. Besides the nature of the tenure which is short there is no minimum commitment in terms of Service levels as there are no service level agreements.

Due to lack of clear-cut guidelines for express operators, most of the airport operators including AAI provide facilities treating EDS companies reportedly at par with duty free shops as they are required to undergo a system of bidding for space rather than direct allotment. While such a system would be considered appropriate for non-aeronautical facilities, it is important to appreciate the role of EDS companies and express cargo as a whole, being a key aeronautical activity and not an ancillary non aeronautical activity akin to duty free shops.

Air side infrastructure for Cargo operations

Air side infrastructure for cargo operations is equally important for seamless and smooth operations to achieve better efficiency. Freighter aircrafts play a vital role in increasing the cargo throughput of the country. There is no consistent policy for allotment of dedicated facilities at any of the airports for dedicated freighter aircraft including for air express operators. One of the important indicators in this context is the number of dedicated freighter parking bays available on the airside.

Evidently, the number of dedicated freighter bays in Indian airports is far below the status accorded to this aspect in the Hub airports in the region. It is also essential to ensure that freighters are provided with adequate dedicated facilities and parking

bays in close proximity to improve operational efficiency. Necessary infrastructure and upgrade in infrastructure is required in key international airports like Chennai so that they can service the new generation of large cargo airplanes.

Key Challenges – Regulatory Hurdles and Other Processes / Procedures / Systems

Procedural hurdles in Operationalization of Air Freight Station (AFS)

The concept of Air Freight Station was conceived as a means to reduce congestion in the airport premises by permitting transfer of cargo to designate / Customs notified Freight Stations – AFS or ICDs. Way back in November 2007 Chennai Air Customs administration notified Central Warehousing Corporation facility at Virugambakkam as the first ever AFS in India. One more ICD at Sriperumbudur was also designated by Customs authorities in Chennai as AFS. Air Cargo Commissioner at Mumbai Customs granted permission to M/s. CONCOR to carry out Export and Import Operations of air cargo shipments from a dedicated warehouse within ICD Mulund (East) Mumbai in April 2010.

There was expectation that this would augment the off-airport warehouse capacity/facility and decongest the airport premises which can at the best be a transit area for cargo operations. AFS is an innovative solution that would complement an Air Cargo Terminal. Customs have permitted transport of individual packages, container cargo and ULDs etc. for both export and import cargo clearance for the Air Freight Stations (AFS). However, the WG noted that existing AFSs notified by Customs administration have not been made operational.²⁹ Union Budget proposals for 2012-13 include amendment of Customs Act 1962 to provide a legal backing to the AFS by equating AFS with CFS.

It is reiterated here that the success of the AFS will require inter-alia Customs permission for bonded trucking operations of both cargo and equipment between the gateway airports and these inland facilities. Customs do not have enabling procedures in place for the operation of off-airport clearance facilities in respect of the bonded trucking operations of air ULDs. For instance, the EDI 1.5 does not have necessary provision to capture transactions of transfers meant for AFS/ICDs. Dedicated officers are also required to be allotted for supervising movement of the cargo.

Action Points: Amendments to be carried out in the application software meant for EDS 1.5 version of Customs to capture the transactions covered in Transshipment for AFS. Suitable instructions are required to be given to the concerned field formations for allotting officers for giving clearance to consignments pertaining to AFS. Off-site Freight Station is a creation under the Customs Act for augmenting Off-port facilities for processing cargo meant for international trade and for effective implementation there should be enabling provisions guideline either time bound, or tonnage based that could mandate for moving the cargo as ULDs from the Airport to an AFS. For example, Chennai Port Trust allows the terminal operator to move the consignments to a CFS of their choice, if dwell time of 72 Hrs is exceeded.

Requirement of 100% export shipment examination leads to delay

Export shipments cannot be moved for build-up leading to delays, till all shipments marked for examination are scrutinized. Customs system should be able to identify export package meant for examination, so that they can directly be moved to warehouse for built up. This will decongest the warehouse. This will facilitate the custodian and trade members to decongest the warehouse, as shortage of space in warehouse causes lot of problems. System to be modified to identify packages meant for examination based on product of export, scheme applied and other parameters. It is possible to make modification in the system software to establish a link with Custodians to convey the packages so identified to eliminate human intervention and facilitate Custodian to plan movement of the rest of the cargo to warehouse.

Duplication of documentation

Generation of Export Promotion Copies is a cumbersome and wasteful exercise as much as not being an eco-friendly process. These documents have outlived their relevance for their physical existence and should be replaced with electronic mode. The condition of Printers at all the Major Customs Air Cargo Complexes is much below par and their maintenance pathetic. Hence there should be a way out of relying on printing of documents.

Action Point: Customs started a procedure that required registration of digital signature few years back as a serious endeavour and there is not much headway made in this area. It is advisable that this is taken up again seriously to make

digital signature mandatory to transact business with Customs. Once this is established, print out of all manual documents – Bills of Entry, Shipping Bills, EP Copies can be eliminated saving precious time for both Customs and the Trade.

Simplify customs processes and documentation through full adoption of EDI

Physical papers are still being used even after implementation of EDI in the processing of import & export cargo. Wherever data is transmitted electronically at least in such cases no hard copies should be required by customs. Physical copies should be only required wherever no electronic data is possible or missing. This will help in reducing the dwell time of import/export cargo by at least 10-20%.

Customs should go for full EDI adoption for import/export registration, clearance, drawback, and e-payment of duty. This might release considerable workforce / man-hours in the existing pool, which can be deployed elsewhere. Certain functionalities to be achieved fully through EDI: Dispense manual printing of customs Shipping Bills and Bills of Entry to expedite processing time at examination points. Convey export order /out of charge real time from customs to expedite palletisation/deliveries . Accept electronic confirmation of AWB nos and RMS goods released without delays. Dispensation of all hard copies: Customs should not insist stakeholders to submit manual documents, wherever trade partners are submitting Data electronically to them to avoid duplication of work and unnecessary paperwork. Submission of delivery order by airlines, sub delivery order by consol agents, Customs out of Charge copies, manifest, consol manifest, MAWB, HAWB copies should be dispensed with. For effective implementation it is recommended that it is necessary to mandate EDI standards, standardized processes, digital signatures and inter-linking of regulatory agencies and adoption of multi-model EDI processes by everyone. Currently, testing agencies are not connected with customs and all certifications are manual.

Provision for amendments in EDI system

Amendments to be carried out in the application software meant for EDS 1.5 version of Customs to capture the transactions covered in Transshipment for AFS. Suitable instructions to be given to the concerned filed formations for allotting officers for giving clearance to consignments pertaining to AFS. Introduce transshipment module in EDI ver. 1.5: Version 1.5 should complement electronic declaration pre arrival of flight for seamless and smooth transshipment for the vision to create air cargo hubs in India.

Transshipment a cumbersome process

Customs facilitation procedures with respect to transshipment cargo still needs further clarity and simplification. Customs procedures for transshipments and export / import procedures differ at various airports. There is an urgent need for standardization of policy / procedures for gateway operations. As increasingly Indian carriers fly out to international destinations, the transshipment segment has significant market potential.

Simplified process for managing overages and shortages

Often extra or non-manifested shipments arrive which are not listed on the IGM, or some get left behind and arrive later. This is a global problem for all international airlines, as a few extra shipments do escape being manifested at the origin or some shipments get left behind. If the contents of the shipments are not restricted or prohibited for imports a formal declaration should be allowed to be filed directly with no specific approvals, delays, and administrative penalties on express operators for such overages.

Lack of close supervision during cargo offloading at truck dock

The floor area at the truck dock is the first entry point for offloading the cargo before shifting for clearance. Lack of close supervision at the entry stage at the truck dock coupled with the fact that there are inexperienced and unskilled loaders handling the consignments, is responsible for the packages to be misplaced. The cargo is carted into the bonded area where the cargo is at the mercy of the unskilled laborers in the absence of strict supervision in this area. The loaders, who are often recruited from unassociated areas of work, are not subjected to any training for shifting the packages properly at the airport. Such loaders do not understand the chaos they are going to create by storing only part consignments at a particular location or by mixing up locations and consignments. The net result is that at the time of loading the cargo the Carrier's staff

deployed for building the pallets is unable to locate the complete cargo of a consignment. The part cargo could be lying in some other location, or worse may have been palletized by some other carrier and loaded onto / flown on another aircraft. There is an inadequate supervision at various stages of the clearance. From the time that the goods are offloaded at the truck dock, and through all the stages to build up, there are very few supervisors who can give direction and prevent mix ups that are the source of missing packages. Across the good airports of the world, operators are skilled and only physical loading is outsourced. In India, however in some airports, cargo operations are perceived as labour intensive and hence outsourced to various agencies who can supply workforce. Another fact, which contributes to the state of confusion to some extent, is that neither the vehicles carrying the shipments (exports) are of international standards or any other standards nor packages are of uniform sizes and shapes under the same Airway bill.

Packaging is another area that requires improvement

Packaging needs to be as per international standards. Post customs clearance (LEO) the shipments are being handled by multiple agencies and are shifted to their respective area of unitization from a common admittance area. Also, it has been reported that there is a tendency for accumulating the delivered cargo at times for want of vehicle or to wait till getting full truck load. Trucks and vehicles should maintain good standards and be properly maintained and in good condition. In many cases it has been said that shipment has not been uplifted due to non-availability of trucks. Use of non-standard vehicles should be avoided at all costs as this causes not only delays but also damage to goods while loading /unloading. Trade and agents who operate on behalf of the trade should take note of these concerns and take necessary remedial action to rectify the situation. Otherwise, this area of activity will face stiff penal action from authorities.

Multiple agencies involved in the customs clearance, not present at the air cargo complex: There are numerous allied agencies that need to work in tandem with customs – like Drug Controllers, Port Health Officer, Food Safety and Standards Authority of India under the Food Safety and Standards Act, 2006, Animal and Plant Quarantine authorities, etc. Such agencies covered by the Allied Acts, having a mandated role in clearance of cargo through their certification, do not have offices at the air cargo complex. Many of these agencies are located far away from the airport.

This often leads to delays in export and import clearance, which leads to congestion at the airports. In fact, in certain locations (like Bangalore, Hyderabad) there are no exclusive offices for testing. Hence the availability of the officers decides the clearance time of cargo that are edible in nature (PHOs), Pharmaceuticals (ADC), products of plant or animal nature (Plant or Animal Quarantine Authorities). Normally, even to locate and make the officers available, takes time, not to consider the processing time for completion of certification. This defeat the very purpose of airlifting of cargo as speed is of essence.

Multiple handling of the packages by various agencies working at the airport

There is multiple handling of the packages by the various agencies working at the airport (CHA, outsourced loaders of ground handler, ground handler, customs, custodian, and screening team) during various stages of clearance. Various bottlenecks are created at various stages of the clearance, due to procedural issues. This creates the background for chaos particularly in a situation, where there is no strict adherence to clearly defined line of responsibility among these various agencies. The flow of channels of service needs to be very well defined in order to have a complete smooth operation.

Restricted working hours leads to delay in cargo clearance

Limited working hours of concerned agencies at the Cargo terminals is one of the key reasons for the delay in clearance of international cargo. Restricted working hours coupled with bunching of holidays lead to pile up of cargo. When the operation starts next working day, it puts tremendous pressure on the operations and delivery system. In many countries overseas, cargo clearance on 24X7 basis is adopted. India also requires similar process, given the vibrant imports and exports activity in the country to various destinations covering different time zones.

Key Challenges-Automation/IT Adoption**Warehouse Management System (WMS)**

Warehouse Management System (WMS) is considered necessary for efficient cargo operations. The primary purpose of a WMS is to control the movement and storage of materials within a warehouse. A WMS is a key part of the supply chain and primarily aims to control the movement and storage of materials within a warehouse and process the associated transactions, including shipping, receiving, put away and picking. The systems also direct and optimize stock put away based on real-time information about the status of bin utilization. Once data has been collected, there is either batch synchronization with, or a real-time wireless transmission to a central database.

The database can then provide useful reports about the status of goods in the warehouse. The objective of a warehouse management system is to provide a set of computerized procedures to handle the receipt of stock and returns into a warehouse facility, model and manage the logical representation of the physical storage facilities (e.g. racking etc), manage the stock within the facility and enable a seamless link to order processing and logistics management in order to pick, pack and ship product out of the facility.

Flow of information is not seamless

Historically there has been a compartmentalized approach to technological development within each industry segment, as also Government, particularly for EDI. There are too many stages between the shipper's door and export uplift, or vice versa from arrival of flight till the delivery to final consignee. An overall industry overview, establishing an integrated approach, and adopting a common platform is essentially needed. Some of the key EDI issues which are blocking the seamless movement of the information are:

- All relevant Governmental agencies are yet to be interconnected.
- Processes vary at different airports, as there is no standardization. Each custodian is embarking on its own proprietary custodian systems. As a result, the trade has to contend with multiple systems and lack of standards of data exchange across various airports for the same functionality.
- Data cannot be easily shared owing to manual processes and paper documentation. Even where shippers have their own automated processes / ERP systems, they must yet provide paper inputs to the authorities / intermediaries.
- Same commercial, customs and transportation data are entered multiple times during the logistics flow, resulting in high administration costs and scope for manual errors.
- Lack of shipment visibility requires constant follow-up with carriers, shippers and custodians, results in increased communication costs, penalties, and delays, and finally customer dissatisfaction.

Recommendations**1. Initiatives needed from Ministries/Departments of Government of India****Integrated framework of Air Cargo Logistics Policy**

Air Cargo is becoming an increasingly important aspect of Indian external sector. Though some improvements have been witnessed in the recent past, numerous bottlenecks continue to bedevil the chain of air cargo sector. As a result, the turnaround time for exports/Imports at gateway Indian airports is significantly longer compared to other major airports in the Asian region. This compromises the competitiveness of Indian industry and also compromises Indian trade potential and thus it needs to be addressed on priority. Given the critical need to enhance efficiency of Air Cargo operations in Indian Airports and to meet challenges of growing needs of business and industry for their air freight operations it is essential to lay down a comprehensive policy framework governing air cargo operation in the country.

- The policy inter-alia shall recognize the criticality of air cargo/air express industry to the economic progress. Following objectives are considered critical to the formation of India's air cargo policy:

- The contribution of air cargo sector needs to be adequately and appropriately recognized so that India's fast growing International and domestic trade by air is facilitated, enabled, integrated, and expanded.
- Air Cargo Policy and Regulatory Framework governing Air Cargo operations should be enabling and facilitating India's International and domestic trade for ensuring efficient, secure, safe and streamlined air cargo services to and from every part of the country so as to achieve competitive positioning with efficiency, value addition and yield.
- Structured and inclusive planning and timely/ effective implementation of setting up world class infrastructure for air cargo operations at and off airports with full facilitation to achieve greater throughput efficiency, reduced dwell time and maximization of the installation capacity
- Global benchmarking of all aspects – infrastructure, regulations, processes, and procedures including documentation, communications, use of technology and an effective yet conducive security regime
- To establish an integrated approach with an industry overview and by adopting a common platform involving a transparent consultative process among various cross border regulatory agencies and all other stakeholders as against a compartmentalized approach with multiple systems. This requires creation of a mechanism which will enable collaboration amongst key stakeholders and act as an enabler for efficient investment in the creation and operation of air cargo logistic infrastructures including appropriate rail and road links.
- The Policy shall incentivize investments in this crucial area of logistics which is vital for National development
- The policy shall strive to promote effective and sustainable competition in the air cargo operations in all its aspects
- India has great scope to handle transit tonnage as an international hub. The policy shall therefore aim to make at least four International Cargo Hubs among the major Gateway airports of India and achieve ten million tons of International Cargo throughput at Indian Airports by 2030
- To establish processes and procedures to identify key benchmarks of service level across the entire supply chain which should be monitored and standards which should be complied with against these benchmarks. Identification and vigilant monitoring of key performance standards with timely review of regulatory norms as required should be an on-going process.
- Policy shall actively promote and facilitate aviation cargo education and training infrastructure to ensure availability of adequate number of skilled/trained personnel at all levels for meeting the growing needs of the industry.

Industry/Infrastructure Status to Air Cargo logistics Sector

The requirement of infrastructure based on assessment of cargo traffic in future is likely to be much more than what is presently available. On top of that if service levels benchmarked with global standards are to be expected from the air cargo logistics industry, the quantum of investment will need to be stepped up by the Cargo Terminal Operators, be it Airport Authority of India or private entities.

- Latest technologies such as Automatic Storage and Retrieval System (ASRS), Elevated Transfer Vehicle (ETV), Radio Frequency Identification Devices and Terminals (RFID) etc. are required to be deployed in the Cargo Terminals besides augmenting other equipment's such as X-ray machines for cargo screening. Further, temperature sensitive cargo such as Pharmaceuticals, Perishables, and dangerous goods etc needs highly specialized facilities with latest technology and equipment's. Therefore, the investment needs of the industry are extremely high. Private promoters bring in an exceptionally low equity and thus debt / equity ratio is extremely high. Financing high and growing investments needs remains the most critical issue in the context of high interest rate environment.
- The air cargo logistics sector in India has not been accorded any industry status and presently it is being handled by multiple Ministries at the centre such as Ministry of Civil aviation, Ministry of roads, Ministry of Commerce & Industry etc. The lack of industry status poses problems for the under-capitalized freight forwarders/integrators/Cargo terminal operators/air express operators who find it difficult to raise funds through organized banking or financial channels. Therefore, it is virtually impossible for them to invest in modern equipment and technology to increase efficiency and reduce transportation costs. When the sectors are organized, industries develop on account of uninterrupted flow of resources for development.
- Thus, providing industry status to Air Cargo logistics sector would assist in the development of the sector and bring down the current logistics costs. "Industry" status if accorded to Air Cargo logistics sector would facilitate easier

access to finance through availability of organized financing/banking and establishment of insurance norms, robust regulatory mechanism, and certainty. Industry status to Air Cargo logistics sector also encourages Private Equity funds participation as they are clear that Government policy will not change frequently once the status of Industry is accorded.

- Further a number of industry specific incentives- fiscal and other benefits are provided by Governments both at the centre and the States for development. In the absence of the status of Industry, Air Cargo logistics sector is not in a position to avail or seek such benefits which other sectors are receiving. Therefore, Government should consider the long pending demand of air cargo logistics sector to grant it Industry status, along the lines already in place for all modes of surface transport in India. This will help them in getting necessary institutional support to strengthen their business.
- Infrastructure status to industries is another important instrument that is used to incentivize investments in a particular sector. While airport is considered as infrastructure eligible for Income Tax benefits, under Section 80 I (A) apparently, air Cargo terminal enterprises are excluded from the same. This anomaly needs to be corrected immediately. Further it is considered necessary to accord Infrastructure Status to the Air Cargo logistics industry located both within and outside Airport premises. Restrictions in extending the benefits to Air Cargo infrastructure entities may have to be reviewed so that the objectives behind the policy are achieved.
- Note that already airports are covered under infrastructure status for Income Tax purposes. Restriction of the benefits to “New’ infrastructural facility under the said Income Tax section needs to be relaxed because in most of the existing airports undergoing modernization/up gradation, requirement for modernization and expansion for augmenting cargo infrastructure is real and urgent. Either by way of according to appropriate infrastructure status to the air cargo logistics sector or otherwise, it is recommended that these entities responsible for the cargo terminal operations may be allowed to issue tax free infrastructure bonds. Such bonds attract public investment especially from high tax band investors at relatively lower interest rates and thus help raise funds for capital intensive projects of public importance.

Augmentation of Off Airport Cargo logistic facilities

Air Freight Station: There is clear and compelling case for augmenting the Off Airport facilities for cargo processing and handling for clearance. Irrespective of all future proposals by the air terminal operators/Custodians to enhance / improve cargo handling facilities, demand will outgrow supply in the near future. Cargo village concept can work where the airport has enough land in an area where the cost of land is not expensive. Otherwise, rental will become detrimental to trade.

For cargo village concept to work, the airport cargo handling terminal should be declared customs free zone. All cargo processing both on import and export side should be done only at cargo village at the forwarder’s facility. This in fact becomes the customs station like the CFS is for the seaport terminal. Further, Cargo village should be not more than 2 km radius from the cargo handling terminal of the gateway airport. All export related activities can be technically done including palletization and security examination.

On import all custom related activities from break-bulk to assessment, examination and payment of duties can be done over there. In the absence of adequate land in the vicinity of airport premises, which is the case with almost all airports recourse must necessarily be made to the concept of Air Freight Station.

Air Freight Station is an off-airport cargo terminal station having facilities such as Customs documentation/examination, Cargo acceptance check, security checks and palletisation. This is the counter part of Inland Container Depot and Container Freight Station for maritime cargo. Services offered for Imports include Hand over by Airlines, Bonded trucking operations from Airport to AFS, Documentation, De-stuffing at AFS, Segregation, Customs examination, detention, bonded warehousing, and delivery. Services offered for exports include documentation, Cargo acceptance, Customs examination, X-ray Screening, Warehousing, Palletisation, bonded Trucking operations from AFS to Airport and Hand over to air lines.

Air Freight Station (AFS) has the following advantages:

- It is an integrated chain that offers Customized logistics solutions with better accountability and minimal logistics cost
- Shifts / distributes the space requirements outside the boundaries of Airports
- Will drive availability of more covered storage
- Equipment's will be placed at various locations as per demand
- Deployments of workforce is spread over locations
- Due to availability of space, traceability is made easier
- De-vanning of Unit Load Device (ULDs) will be faster and thus availability of cargo sooner
- AFS can be located at less congested / and road restriction free areas
- Due to distribution of cargo to various locations, congestion can be reduced
- Greatest advantage will be a safe and secure airport as ULDs are shifted on landing from a sensitive place like the airport to far off locations capable of creating required safety standards.
- AFS becomes a business model by itself with willing investors creating competition that would pave way for reduced cost and increased efficiency.
- In short, an AFS is an innovative solution that would complement an Air Cargo Terminal.

Service Levels for Key Performance Indicators

The cargo facilities at the airport requires laying down appropriate performance standards relating to quality, continuity, and reliability of service in respect of the cargo operations in the airport cargo terminal. This is an essential and just requirement considering that the users pay for such services, and they are entitled to demand appropriate levels of services.

Further, there is a chain of responsibility in the cargo handling and movement across the supply chain namely Carriers, Custodian, Customs (other cross border regulatory), freight forwarders/custom house agents. Therefore, it is important to ensure accountability is fixed on each one of these agencies for delivery of services as per standards. Presently service levels are not mandated.

Promote dedicated Freighter operations

Incentivize freighter aircrafts through conducive regulatory policy changes and provision of dedicated freighter facilities: Freighter aircrafts play a vital role in increasing the cargo throughput of the country. There is no consistent policy for allotment of dedicated facilities at any of the airports for air freighter operations.

Restriction on night operations and excessive cost has made setting freighter aircraft operations a costly proposition. There is a need for robust operations infrastructure and policy assistance, which can ensure efficient freighter operations in the country.

Some key initiatives needed are: i) Ensure that freighters are provided with dedicated facilities and parking bays in close proximity to improve operational efficiency. ii) While framing noise abatement measures, for any other major airport the regulator may consider and compare the regulations in place in emerging economies in our part of the world, including countries like China, Russia, Taiwan, South Korea, Thailand, and the UAE. India is a developing economy and there will be an increasing demand for air cargo transportation to fuel growth.

Also, it would be useful to draw up a phase out plan of such aircrafts over a period of time providing sufficient time for freighter operators to induct new capacity in a staggered manner so as not to impose any undue cost burden on the operators or be detrimental to the competitiveness of Indian business. iii) In the absence of pool of available commanders for induction into express airlines coupled with the fact that training is a long-drawn process, a liberal approach is suggested

so that restrictions for FATA for expat commanders do not constrain the augmentation of capacity to meet demand. iv.) Slots in congested airports which also happened to be gateway airports need to be earmarked for freighter aircrafts.

24X7 Operations in Air Cargo complex

One of the major causes of significantly higher dwell time in Indian airports for Cargo operations and the resultant congestion thereof is attributed to limited number of hours of working by various agencies including Customs Administration. True that every other agency involved in the enforcement of cross border regulations such as plant quarantine directorate, office of Drug Controller etc are also confining their operations to regular office hours of 10 a.m. to 6 p.m. Stakeholders other than govt. agencies such as freight forwarders/custom house agents among others are also limiting their cargo operations to normal office working hours.

As a result, cargo operations do not happen round the clock and also during holidays. This working environment seen in cargo terminals is way below international standards. Implications of the work environment described above are that it leads to gross underutilization of the capacity created for handling cargo. Besides underutilization of capacity, it results in significantly higher operating costs and unacceptably high transit time at the airport. Productivity benefits and efficiency enhancement in international cargo operations are compromised to unbelievable levels. Evidence available suggests that dwell time at major gateway airports in India are nearly ten times that are seen in other major cargo hubs in the region. Peak seasons and peak hour clearances and periods of breakdowns of computer systems etc add further delay to the process.

It is in this context 24x 7 operations have been suggested for long. But that has not materialized. Reasons are not far to seek. No single agency can be attributed for this state of affairs. Visits to Air Cargo Complex and interaction with the stakeholders suggest that all the five major agencies namely carriers, custodians, customs, security agency and freight forwarder/custom house agent are to share the blame equally. For instance, the cargo is brought for clearance close to the closing hours and about the 60% of the cargo is tendered in a span of two to three hours causing a tremendous strain on resources. It emerges very clearly that there is a need to a) align the working hours of all the agencies government related and other than government related b) invest adequately in developing human resources for cargo operations both skilled and semi-skilled arrive at a uniform holidays schedule for the entire year based on consensus.

Promote Air Cargo educational and professional training program for capacity building

There is an acute shortage of trained workforce in the air cargo sector. Air cargo logistics operations require skilled manpower, proficient with the knowledge of customs procedures and IT systems. Warehouse management, logistics and freight forwarding are separate subjects in themselves and require specialized training. Currently, most employees learn on the job itself. This has resulted in unsustainable situation, where it takes much longer for any new employee to become productive.

The vision of world class air cargo infrastructure hinges on skills and competency of its workforce. To overcome the skills crisis in the air cargo sector, it is important to infuse skill and educate existing and the prospective employees, through setting up a vibrant world class cargo training institute. Government should promote professional training program to ensure that the industry nurtures a continuous supply of well trained and skilled personnel.

2. Initiatives needed from Airport operators and Custodians

While the major policy aspects have been covered in the previous section, the following issues are also equally important mainly from the point of view of Airport operators and Custodians to focus upon for facilitating unhindered growth of the Air Cargo logistics.

Air Cargo Infrastructure Development at Airports

Cargo continues to have relatively low priority in planning, allocation of space, budget and human resource as also the timing of developmental built up. Barring the Green filed airports there has been a lack of planned and integrated development of cargo facilities at Indian airports including standardization and benchmarking of deliverables. Implementation of approved plan for air cargo has been inadequate and inconsistent.

There is a strong need for rationalizing available space and facilities between agencies as also functionalities. International Benchmarks³⁵ in this regard are evolved based on two parameters: the Annual throughput and the extent of Covered area for warehouse in the cargo complex.

3. Initiatives needed from Carriers, Air freight operators/CHAs and others

Active co-operation from Carriers for promoting Off-Air port Facilities

It is widely acknowledged that space is a serious constraint in most airports and for cargo handling and movement, congestion is becoming a significant issue. With the limited possibility for terminal expansions in most airports there is a need to find answers outside. Under such circumstances, and given the prospects for future growth potential projected, cargo terminals can only be a transit point. In that context, there was widespread support for Air Freight Station not only in the Working Group but was also the opinion of many participants in the field level meetings. Be it AFS or Cargo Villages, technically and legally the arrangement is between the carrier and the custodian.

Even for cargo to be handled in Air Cargo Terminals, the agreement is between the carriers and the custodian. Unless effort is taken by Carriers to promote AFS it could never be a reality. While the Trade may desire for an alternative, effectiveness can be determined only by the carriers, and they have to enter into an arrangement with the AFS as Custodian. Involvement of the Carriers is considered vital if we have to implement the proposals for strengthening arrangements for Off-Air port cargo logistic operations such as AFS. Reluctance on the part of any stakeholder in the community of air cargo trade and regulatory agencies could only hamper the growth of air cargo industry and thus the competitiveness of the industry and the economy in general.

Airlines may have to support this initiative by positioning ULDs (pallets and Containers) at AFS's premises for clearance/unitization (exports) or de-unitization/clearance (imports). At present only a few airlines provide a limited connectivity between inland terminals and gateway airports by road transport to ferry sector freight. This can be significantly enhanced.

Uplift Capacity and Handling Capability

Especially from the gateway airports, airlines should ensure that they provide adequate uplift capacity which is optimally utilized such that the airlines achieve cost efficiencies to keep freight rates competitive, as also to ensure that shipments are carried as booked without delays and offloading. Related to this is the practice of overbooking resorted to by airlines whenever they perceive uncertain situations for clearances including Customs etc during peak seasons.

With better planning and booking systems, airlines should be able to anticipate cargo submissions, and have a back-up plan in place so that no shipper / shipment suffers the consequences of offloading. Also related to this is the capacity of the airlines to handle different types of cargo, particularly the special handling/storage needs of Dangerous goods, Valuable cargo, Perishables, etc. Airlines must streamline their airport warehouse and ramp operations such that the handling, unitizing (build-up of ULDs), transfers and loading of outbound shipments on each flight are achieved with maximum efficiency.

The present rampant problems of short-shipments, missing / untraceable packages, mishandling / damage to packages, pilferages, etc must be significantly eliminated with the co-operation of all other related agencies. Likewise, flight checking after flight arrivals, segregation of shipments and depositing with custodians / transfers for transshipments, etc must be managed within benchmarked time frames and without error / delay. Towards this end, steps should be taken to augment trained personnel and to introduce knowledge-based management, effectively integrated systems of warehouse management and inventory management.

Investment in Human Resources

There is lack of willingness on the part of every stakeholder to invest in trained workforce for carrying out their respective tasks in the supply chain involved in the air cargo movement. Presently, export cargo is being bunched in the evening hours by the trade causing severe congestion in the cargo terminal which is avoidable. If these agencies augment their own personnel for carrying out their tasks in the airport and advance their operations in the morning hours much of the problems of congestion could be avoided.

When it comes to making additional investment to cope up with pressures of growth the needed enthusiasm is missing on the part of all the agencies in the value chain. This must change. Enterprises small and big must make adequate investment in human resources. This is a critical area which requires immediate attention because, the future growth of the industry is crucially dependent upon availability of skilled manpower, as air cargo movement/handling entails familiarity with automation, sophisticated equipment handling and compliance with various regulations of Cross-Border agencies including security regulations.

The trade should commit to basic infrastructure / equipment as a pre-requisite to qualify as a legal service provider e.g., IT connectivity, Roller Bed Trucks for BUPs, closed Body secure Trucks for known shipper compliance etc. their input could be brought under a regulation by a competent Authority if on a review situation does not improve. Lack of training schools and institutes for imparting knowledge and skill in the air cargo operations has also resulted in substandard workforce quality employed by the industry. This is a matter of serious concern. National Aviation University that is being planned by MoCA should take into account this crucial aspect of aviation education.

ICAO has made it mandatory to have Dangerous Goods Regulation certificate from DGCA and IATA approved training institute. It is often reported that there is poor response to the training courses offered by the accredited training institutes which is a reflection of the importance attached to investment in human resources by the trade and industry. This needs immediate corrective action by the trade and industry.

Minimum educational qualifications and training must be defined and made mandatory for operational staff of all stakeholders so as to bring uniformity, derive the benefits of investments in automation and IT and drive improvement in efficiency in the entire supply chain. The trade including freight forwarders, custom house agents and exporters / importers should be mandated to deploy a minimum number of Airport staff depending upon the volume of Cargo / documents handled by them.

Integrated working Hours

It is important to ensure that the working hours and the Break time are integrated among all the agencies in the Cargo eco system so that available resources are effectively utilised. Often it is seen that lunch break hours for different agencies are different. This can cause inefficiency in the system which is man-made. This need not necessarily be uniform for the entire country. Each airport can have their own. However, for every airport the working hours in the Cargo terminal should be common to all agencies including the Customs, Carriers, and Freight Forwarders/CHAs, among others.

Timely filing of documents

It is the law of the land that IGM should be filed by the Carrier (or any other person authorized to issue Delivery Order) prior to arrival of the aircraft. Presently precious time is consumed in filing of IGM (normally on arrival) by the Carriers taking away the advantage of advance filing of Bills of Entry. Therefore, it is considered necessary in the best interest of efficient operations, which filing of Declaration with Customs by the Carrier should be at the time of wheels up of the Aircraft at origin Airport. Further if Declaration is filed electronically on the take-off of the Aircraft from the origin Airport, Customer gains time to process documents. This system is followed in many European Countries and the US for security reasons. Timely filing of documents is equally important to other stakeholders such as importers / exporters / custom house agents. The trade should take advantage of the advance filing documents by airlines. It is important to encourage and increase the

quantum of clearance under the RMS scheme. It is said that at Mumbai Airport on an average about 50% of the import delivery is under RMS.

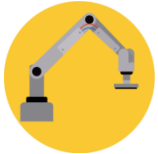
Six technology trends revolutionizing air cargo facilities



AUGMENTED REALITY AND WEARABLES



DRONES AND AUTONOMOUS VEHICLES



ROBOTICS AND AUTOMATED SYSTEMS



BIG DATA / PREDICTIVE ARTIFICIAL INTELLIGENCE / DEEP LEARNING



IOT, CONNECTED CARGO AND DEVICES



GREEN, SUSTAINABLE, NET ZERO BUILDINGS

