Sustainable Logistics

Air Cargo Opportunities

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Intra-regional trade between Asia and Europe represents largest and rapidly growing trade lanes.

Airports serving growing global trade lanes are well positioned to take advantage of this growth.

Source: WTO, RBerger
This is driven by connectivities across world’s economic regions with shifting emphasis towards Asia

Opportunity to replicate the success of passenger business

Forecasted GDP growth in Asia Pacific, Middle East and Africa are also above global averages.

Source: OAG
By 2030 Asia’s economy is expected to be greater than US and UK combined

- Asia’s GDP share in global economy is expected to grow to 40% (from the current level of 30%)

- The overall global logistics market is expected to grow at an average annual growth rate of 2.4-3.0% for the next 5 years,

- This is driven by regional and global trade volumes and a growing share of outsourced logistics.

- Over the past ten years, global logistics markets have grown substantially – typically by 2.0-2.5 times the global GDP

*This presents greater opportunities for logistics growth for airports, airlines and communities serving these trade lanes*

Contract logistics market size per country Eur M

<table>
<thead>
<tr>
<th>Country</th>
<th>Cagr 13-17%</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>14.1</td>
</tr>
<tr>
<td>Japan</td>
<td>2.3</td>
</tr>
<tr>
<td>India</td>
<td>12.3</td>
</tr>
<tr>
<td>South Korea</td>
<td>7.8</td>
</tr>
<tr>
<td>Australia</td>
<td>5.6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>11.8</td>
</tr>
<tr>
<td>Taiwan</td>
<td>8.1</td>
</tr>
<tr>
<td>Thailand</td>
<td>9.7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>10.2</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>8.9</td>
</tr>
<tr>
<td>Singapore</td>
<td>7.3</td>
</tr>
<tr>
<td>Philippines</td>
<td>11.3</td>
</tr>
<tr>
<td>Pakistan</td>
<td>7.1</td>
</tr>
<tr>
<td>Vietnam</td>
<td>10.9</td>
</tr>
<tr>
<td>New Zealand</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Source: Ti Global Contract Logistics 2013
This in turn will drive significant shift in established global trade-lanes, where China is expected to lead.

And trade developing between emerging economies.

**Main focus US- Europe- China**

<table>
<thead>
<tr>
<th>Country Pair</th>
<th>Value (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China – Japan</td>
<td>210</td>
</tr>
<tr>
<td>Japan – US</td>
<td>150</td>
</tr>
<tr>
<td>China Korea</td>
<td>140</td>
</tr>
<tr>
<td>Germany – US</td>
<td>120</td>
</tr>
</tbody>
</table>

**Growth of Asia, in particular China**

<table>
<thead>
<tr>
<th>Country Pair</th>
<th>Value (B)</th>
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</thead>
<tbody>
<tr>
<td>China – US</td>
<td>600</td>
</tr>
<tr>
<td>China – Japan</td>
<td>340</td>
</tr>
<tr>
<td>China Korea</td>
<td>140</td>
</tr>
<tr>
<td>China - India -</td>
<td>290</td>
</tr>
<tr>
<td>China Germany</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: Roland Berger, IMF; PWC
Air cargo trade lanes generally reflect global trade lane patterns.
In recent years we observe a gap developing between GDP and RTK correlation

This may be driven by fuel prices and intermodal shift

- RTK growth tracks closely GDP growth
- In recent years gap is developing between GDP and RTK correlation
- Increasing fuel prices, mode shift to maritime and other transport may be contributing to this gap
- Seasonally adjusted FTK's have been flat since recovery in 2010
- This has not impacted growth of Air cargo in Turkey – with significant growth with new freighters, belly and greater share of 6th freedom air cargo market

Source: IATA, CAPA
Istanbul is now leading hub in passenger traffic

World air cargo traffic has grown 5.4% since 1982 from 50 to 200 billion RTK

Next 30 years world economy is expected to grow by 3.2%, cargo traffic is expected to grow to 600 billion RTK, 5%

2023 goal for Turkey is $500 M, this could represent growth of air cargo from 2.5 million to 6 Million Tonnes

Industry is poised for change to replicate the success we have seen in passenger air transport in both destination and transhipment market

Source: Boeing, Airbus
Global cross roads: to the West mature economies, to the East, North and South emerging markets with fast growth rates

Air freight growth is driven by economic activity, world trade, industrial production and consumption.

Worldwide trade is expected to grow 3.8% over the next 20 years.

Emerging markets are expected grow 6% which is well above of mature markets.

Source: Innovata Schedules (accessed through Diio).
The regions for which capacity grew the fastest in 2012 were between Europe and Latin America, Asia, and Africa/Middle East.

Market sizes which grew the fastest in 2012 market share to from Africa/Middle East, Europe and Asia, within Europe and between North America and Europe.
Continuing growth of connecting traffic leveraging Turkey’s strategic global location

Istanbul is poised to continue its growth as a global hub and presents opportunity for cargo growth

Opportunities for further growth as a cargo hub
Opportunity for further growth: Regional Cargo Hub

World Map, distorted by Freight Volume

Source: Airbus, IATA Cargo Symposium 2011
Istanbul’s air cargo hub potential is also significant and yet to be developed.

As Asia’s growth continues, Turkey will be able to reach its full potential as a hub in international trade.

According to the IMF, Turkish exports will grow on average more than 5% from 2013 to 2017, while import growth...
Istanbul is an already retail hub for the region, and on its way to becoming a regional distribution centre.

Retail hub for countries in the region

Russia, China, and Germany are among leading partners.

Faster growth in recent Years

**World Ranking – Highest Growth Airports by Passengers (1)**

- **#1** Istanbul SAW
- **#4** Ankara ESB

**World Ranking – Busiest Cargo Country by Tonnage**

- **#6** Turkey (In Europe)
- **#19** Turkey (Worldwide)

Source: TroyAvi Analysis

![Graph showing total trade import and export in thousands for various countries.](image)

- **Turkey**: 26.4% 
  - 2010 YoY Growth by Total Cargo Carried
  - Turkey experienced above average cargo growth of its European peers in 2010 (average 15.4%)

- **Istanbul IST**: 22.4% 
  - 2010 YoY Growth by Total Cargo Carried
  - In 2010, the amount of cargo carried through Istanbul IST airport grew faster than similarly cargo-sized airports in the Middle East; Doha grew at 10.7% and Abu Dhabi grew at 15.6%
Access to multiple trade lanes is important for resilience

Its location enables resilience with leverage and access to multiple trade routes

In 2013 Asia pacific routes were most adversely affected
Middle east carriers added significant capacity to capture emerging opportunities
Overall world air cargo grow was 0.4 in 2013
Europe’s largest trading partner is China with 1.8+ MT Air Trade, followed by India and Japan

World air cargo traffic is forecasted to grow 5% yoy over the next two decades with opportunity to capitalise on growth markets.

Distribution to shift towards China

Asian economic power distribution shifts dramatically toward China.

Boeing world cargo forecast 2023

Source: Districon
Growth opportunities in China and Asia

IST has only four cities and 27 weekly flights to China.

Western European hubs FRA and CDG has nearly three times as much flights each to Chinese destinations.

IST offers services to 15 Rest of Asia countries, it lags behind most other major hubs in flight frequencies, compared with its peer hubs.

TK MNG provides direct freighter services to China.

Note: Excludes, China, India and CIS countries. Source: Innovata Schedules (accessed through Diio). Week of July 20th, 2013
Air freight in Turkey doubled between 2004 and 2013

Source: LogCapStrat database
Non directional OD totals include Textiles, Cloths, Manufactured goods

Source: LogCapStrat database
US. Korea, Japan, Hong Kong, are leading routes by commodity value

Source: LogCapStrat database
In US NE route Jewellery, Clothing, Aircraft Parts, Medical and Computers lead the mix

C390B: Jewellery
C322: Wearing/Clothes
C3845: Aircraft/parts
C3832B: Semi Conductors
C3522: Drugs/Medical
C3829: Machinery

C851: Professional/Office
C825: Computers
C821: Electrical/Machinery
C321: Textiles
C832C: Iron Communications

Opportunities to distribute to ME, Africa, Balkans/Europe

Source: LogCapStrat database
In Europe Weekly frequency of truck flights grew five fold over the past decade

- Long haul truck flights in Europe increased 5 times compared with airport flights which increased 3 times
- Istanbul offer opportunity to provide truck flights Distributing traffic to Balkans and Europe providing door-to-door services
- Given the changes in customer behaviour. With speed and consistency of delivery there could be opportunities for further growth
- Third Istanbul airport including with multi-modal connections will provide basis for further growth. This could be a competitive advantage compared with other hubs in the region

Turkey has the largest trucking fleet in Europe with 55 K units and it can significantly capitalise on Truck Flight opportunity

Source: Boeing world cargo forecast 2023
Hence the largest fleet in Europe truck flight growth provides significant opportunity for Turkey

- Air transport agreements with new countries opened new routes for air freight – 143 new agreements over the past decade
- During financial crisis in Europe focus has shifted to African and Middle
- In world bank ratings in 2012 Turkey went up to 27th from previous 30th in 2009, The goal is to reach among top ten by 2023
- Domestic air cargo also grew from 181 KT to 555KT
- Growth of roads and airports in Turkey also offer opportunities for growth of the air truck flights for Domestic distribution, Iraq, in future Syria

Regional Distribution of Air Cargo from Asia with Trucks and Freighters

Source THY Cargo 2012
Growth of the road network and maritime capability provide opportunity for multi modal services

- The growth of freight transported via road grew CAGR of 3.57 respectively from 2007 to 2012.
- Over the medium term the freight carried via roadways is expected to continue its growth with a CAGR 3% and reach 251.7 million tonnes-km.
- Total freight transportation number via road by Turkish and foreign license plated trucks exceeded 1.5 million in exports and 500,000 in imports.
- Turkish license plated trucks had a share of 80% in total exports, while 70% in total imports.
- Maritime freight traffic grew 11.3 % between 2004 and 2012.
Turkey is not immune to global challenges of air cargo industry – sustainable growth requires restructuring

Air cargo lagged passenger growth in previous years. With recent focus air cargo experienced growth. For example stated target is to grow revenues to 15% range

Freighter load factor and utilisation averages are in line with global averages.

TK reports higher LF of their freighters

Source: IATA
Growth of WB fleet also present challenges for other Turkish Air Cargo companies

This overcapacity in the air freight business has also contributed to weak cargo yield trends.

World cargo yield collapsed in 2009, falling 15%, then rebounding strongly in 2010, since when it has underperformed passenger yield growth (it fell by 6% in 2012 according to IATA).

Source: IATA Ascend
Logistics performance index indicate there is room for improvement sustainable logistics growth in Turkey

The Logistics Performance Index (LPI) measures the logistic "friendliness" of 155 countries. A country’s score is measured in six key areas:

1. The efficiency of the clearance process with border control agencies and customs;
2. The quality of infrastructure related to trade and transport;
3. The level of arrangement of competitively priced shipments;
4. The quality and expertise of logistics services;
5. How well the consignments are tracked and traced;
6. The rate at which shipments reach their destination within the scheduled and/or expected delivery time.

Turkey moved up from 39th place in 2010 to 27th in 2012, out of the 155 countries in the index.

Source: The World Bank
Note: 1-very low, 5-very high
Size of the bubble indicates the total score received from the LPI index.
Trends with potential impact for sustainable air cargo growth

Trends

- Shorter contract terms driven by shorter product lifecycles, and pressure to generate profit over shorter contract durations
- Vertical Integration
- Yield decline and variability of the rates driven by fuel prices, crises etc.
- Modal split increasing share of maritime transport
- Specialisation – specialist sector growth with complex supply chains – specialist knowledge egg pharma move from one stop shop
- Shift in trade lanes towards Aisa
- Investment in IT for increased efficiencies and differentiation of products and services

Air cargo Implications

- Achieve deeper understanding of costs and prices to manage slow and volatile demand – predictive analytics are no longer optional and the domain of the integrators
- Embrace cloud-enabled IT cost deflation to automate processes to improve service while lowering cost to serve – tabula rasa approach
- Simplify service type mix to reduce cost and align offering with changing shipper purchase patterns
- Increase share of wallet with most attractive customers – easier to do than acquire your competitors’ customers
- Human resources becomes even more strategic as highly variable compensation models risk talent flight in many forwarding companies
Improvement of policies, infrastructure and education is critical for improved sustainability of air cargo logistics

1. Transport policies

Ineffective policies could lead to supply chain fragmentation, reduced quality of service by imposing barriers to entry, national monopolies (e.g. postal service) and a lack of competition in the provision of key infrastructure services. Policies could improve supply chain efficiencies.

2. Transport infrastructure

Development of logistics clusters enabling concentration of logistics service providers and business logistics functions of shippers. Such clusters are supported by infrastructure investments in ports, airports, rail and multimodal highway and port connections.

3. Research, education and awareness

Development of IT solutions for tracing and tracking functions allowing visibility of the supply chain to simplified border management and regulatory processes.

Other measures

- Enhanced logistics connectivity
- Investment to resolve shortage of skilled labour
- Optimisation of the use infrastructure, through IT and standard processes
- Supply chain optimisation (empty trucks, waiting times)
- Removal regulatory bottlenecks
- Intermodal transport solutions and optimum use of all transport modes and capacities at all places and at all times.
- Increased use of realistic PPP projects
Thank you

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