Emerging Markets and Evolving International Traffic Patterns
Airline Industry Consortium Meeting
November 4, 2010

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MIT International Center for Air Transportation
What the Numbers Say
A Strong 2010, Weakness in 2011?

Global Commercial Airline Profitability

Source: IATA
Europe Remains Weak; Asia Pacific Outperforming

Airline Net Profits by Region, US$B

Source: IATA, ICAO
World Trade and Cargo Slowing but Still Above Trend

Source: IATA, Netherlands CPB
Emerging Economies Will Fare Better in 2011

Forecasts for GDP Growth

Source: IATA, EIU
Large Geographical Differences in Travel

Growth in Passenger Numbers by Flight Segment

Source: IATA
Capacity is Returning, but Less than Demand

International Passenger and Freight Capacity - Seasonally Adjusted

Source: IATA
Tighter Capacity Is Helping to Lift Fares

Load Factors and Fares in International Passenger Markets (Seasonally Adjusted)

Source: IATA
Air Travel Driven by Business Passengers

Premium Passengers and World Trade growth

Developed Countries Trade in Goods

% Change Over Year

1/06 4/06 7/06 10/06 1/07 4/07 7/07 10/07 1/08 4/08 7/08 10/08 1/09 4/09 7/09 10/09 1/10 4/10

Source: IATA
Delivery of New Capacity Set to Rise

Scheduled Deliveries of New Aircraft, Jets and Turboprops

Source: IATA, Ascend
So Yield Gains Likely to Stall in 2011

Global Revenues/TKP, Costs/TKP and Fuel Cost/TKP

Source: IATA, ICAO
It’s All About the Emerging Economies

Industrial Production Levels

Indexed to Equal 100 in 2008

Emerging Economies

Developed Economies

Source: IATA, Netherlands CPB
The airport “balance of power” is shifting in terms of airline seats

- Among top 100 global airports, 26 gained in relative position
  - Asia – 9; Middle East – 5; Europe – 5; South America – 4; North America – 2
    - Europe’s gaining airports can be found in highly concentrated LCC markets
- Among top 100 global airports, 29 lost in relative position
  - North America – 13; Asia – 9; Europe – 6
    - Of 9 airports losing in Asia, 5 can be found in Japan
- Big gainers in relative position
  - Doha, Bogota, Jakarta and Moscow
- Big losers in relative position
  - Dublin, Fukuoka and Sapporo
### Top 20 Airports Ranked in Terms of Available Seat Miles Flown (ASMs in Billions)
**November 2010**

<table>
<thead>
<tr>
<th>Airport</th>
<th>ASMs (Billions)</th>
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<tbody>
<tr>
<td>Amsterdam</td>
<td>4.16</td>
</tr>
<tr>
<td>London-LHR</td>
<td>9.36</td>
</tr>
<tr>
<td>New York-JFK</td>
<td>6.36</td>
</tr>
<tr>
<td>Paris-CDG</td>
<td>6.22</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>5.90</td>
</tr>
<tr>
<td>Tokyo-NRT</td>
<td>5.65</td>
</tr>
<tr>
<td>Beijing-PEK</td>
<td>4.86</td>
</tr>
<tr>
<td>Seoul</td>
<td>3.62</td>
</tr>
<tr>
<td>Shanghai</td>
<td>3.22</td>
</tr>
<tr>
<td>Bangkok</td>
<td>5.38</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>5.76</td>
</tr>
<tr>
<td>Singapore-SIN</td>
<td>5.39</td>
</tr>
<tr>
<td>San Francisco</td>
<td>4.05</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>6.64</td>
</tr>
<tr>
<td>Chicago-ORD</td>
<td>4.32</td>
</tr>
<tr>
<td>New York-JFK</td>
<td>6.36</td>
</tr>
<tr>
<td>New York-EWR</td>
<td>3.15</td>
</tr>
<tr>
<td>Atlanta</td>
<td>4.37</td>
</tr>
<tr>
<td>Madrid</td>
<td>3.57</td>
</tr>
<tr>
<td>Dubai</td>
<td>6.23</td>
</tr>
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Data Source: Oliver Wyman planestats.com
Top 20 of 100 Largest Airports in ASM Growth November 2010 v. November 2008

Data Source: Oliver Wyman planestats.com
20 of 100 Largest Airports Experiencing Declining ASMs November 2010 v. November 2008

Data Source: Oliver Wyman planestats.com
Top 20 of 100 Airports Gaining in Relative Position
November 2010 v. November 2008

Data Source: Oliver Wyman planestats.com
Top 20 of 100 Airports Losing Relative Position
November 2010 v. November 2008

Data Source: Oliver Wyman planestats.com
Top 20 Airports in Departures and Commensurate 2 Year Growth Rate
November 2010 v. November 2008

Source: IATA
Asia Pacific Region

- Home to 8 of the Top 20 Airports in the world in terms of seats

- Balance of Power Shift is Underway
  - Less (Much Less?) about Japan and all about China
  - China’s economy now bigger than Japan
  - Tokyo’s gateway status to the region in decline

- LCC’s in infancy stage, but promise to leave fingerprints on shape of the market

- With JAL in bankruptcy, will there be other legacy carriers in the region that succumb to the new market realities

- Southeast Asia promises to be a real battleground

- Aircraft technology will continue to permit the overfly of traditional points on the region’s map
Domestic Asia Markets: 14% Market Share for LCCs.....and Growing

Top 10 Markets (95% of Total Domestic Traffic)

- Domestic China
- Domestic Japan
- Domestic Australia
- Domestic India
- Domestic Indonesia
- Domestic Rep. of Korea
- Domestic Malaysia
- Domestic Thailand
- Domestic Philippines
- Domestic New Zealand

Half of the top 10 markets with a LCC market share >40%

58% of Asia-Pac Domestic Traffic
LCC market share: 3%

Source: Airbus, Ascend January 2009
Big Cities, Big Demand – Intra-Asia Demand Concentrated

Travelers Between Asian Countries:

> 46% want to travel between these cities only

> 91% want to travel from or to these cities

Source: Airbus, IATA Paxis – full year 2008
Domestic China: High Concentration and Fastest Growing Cities (Air Traffic)

45% of the domestic traffic from/to these 3 cities

High Concentration of Demand
Beijing, Shanghai and Hong Kong

Fastest Growing Cities
Airport pairs expected to grow above average domestic traffic growth

Source: Airbus
Significant Growth Maintained in Asia-Pacific

RPK Growth: Annual Average 2009 - 2018

<table>
<thead>
<tr>
<th>Region</th>
<th>2009-2018</th>
<th>2019-2028</th>
<th>20 Year Growth</th>
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<tr>
<td>Asia-Pacific</td>
<td>6.4%</td>
<td>5.5%</td>
<td>5.9%</td>
</tr>
<tr>
<td>World</td>
<td>4.6%</td>
<td>4.8%</td>
<td>4.7%</td>
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Source: Airbus
Middle East Region
Middle East Region

- Much like the LCC’s transformed the US domestic market, the competitive actions in the Middle East will disrupt global traffic flows for any number of European, North American and Southeast Asian carriers.

- Region is highly dependent on negotiating new bilateral rights to further leverage network. Will they be successful?

- Big question is whether the region can support three carriers with similar network goals?

- Aggressive low cost expansion will also work to stimulate new demand in many new and emerging markets in various regions.
The Middle East Has a Geographical Advantage to Access the Emerging Market Traffic Flows

8,000 nm
86% World Population
63% World GDP

4,500 nm

2,500 nm
36% World Population
16% World GDP

Source: Airbus
Middle East Will Sustain Very Strong Traffic Growth

RPK Growth: Annual Average 2009 - 2018

- North America: 8.2%
- Europe: 5.7%
- CIS: 6.0%
- Latin America: 7.9%
- Africa: 8.7%
- Asia Pacific: 6.1%
- Middle East: 5.2%
- World: 4.8%

20 Year Growth:
- Middle East: 5.9%
- World: 4.7%

Source: Airbus
Latin American Region
Latin American Region

- A region in its infancy
  - No reported direct traffic to either Asia or the Middle East in 2000
    - Yet Middle East – Latin America traffic forecast to grow 7.9% over next 10 years

- 50 percent of the region’s activity centered on Brazil and Mexico
  - Colombia emerging as an important aviation market
    - Avianca does strategic merger with TACA in 2009
    - Peru, Uruguay and Chile offer significant upside

- In one of the most interesting consolidation announcements in 2010, LAN announces a merger with Brazil’s TAM
  - Another alliance fight brewing like in Japan?

- The Mexicana bankruptcy/liquidation should be of no surprise

- The low cost carriers in this region will also have a say in market’s ultimate architecture
  - GOL and Azul in Brazil
Commonwealth of Independent States

- Home to one of the world’s fastest growing airports in terms of relative importance – Moscow

- Countries all below world average in terms of trips per capita

- Commodity driven economies represent risk
  - Export driven economy
  - As world emerges from recession, commodity price rise will be an important contributor to growth

- Growth areas to watch
  - North America and Asia
CIS Nations Spread Their Wings

1992
36 International City Pairs
>4,000 Monthly Seats

2000
56 International City Pairs
>4,000 Monthly Seats

2008
126 International City Pairs
>4,000 Monthly Seats
CIS Air Traffic Will Grow Faster Than World Average

RPKs Growth: Annual Average 2009 - 2018

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Source: Airbus
Africa

- China, India, Middle East and AFRICA – YES AFRICA - expected to lead the world recovery
- Second most populated continent after Asia
- Like the CIS, a commodity rich continent
  - As commodity prices rise …. So do prospects
- As political tensions wane, increases in tourism and trade
  - Considerable foreign investment in recent years
  - The addition of North American services to the continent is significant
- LCC presence in North Africa stimulating new demand
- African airlines have less than 50 percent of the continent’s market
African Traffic to Grow Much Faster than World Average

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North America

- Still home to the largest airports
  - Largest in terms of departures; smallest in terms of average seat size
  - Growth prospects reflect maturing of the market
    • Below average growth rates for worldwide traffic

- Growth will occur in the Asia Pacific, Middle East and CIS Regions
  - Regions where liberalization will lead to new opportunities

- Significant consolidation activity underway
  - Low cost carriers failing to find organic growth opportunities
  - Regional carriers combining
    • Need to alter business approach as 50-seat jets come off lease
New Markets, New International Growth
North America

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Source: Airbus
Europe
Europe

- More about Central Europe than Western Europe
  - Watch out for Turkey and its flag carrier, Turkish Airlines

- LCC’s are prevalent and growing

- Most threatened by Middle East airline activity

- Consolidation activity – Building intra-continental market strength
  - Market still remains highly fragmented so more consolidation activity expected

- Will Middle East activity facilitate first global merger?
Domestic European LCC Operations Primarily Focused on a Small Number of Key Countries Today

LCC Market Share: 22%

Source: Airbus, OAG, Scheduled seats (millions), Sept. 2006
Europe

RPK Growth: Annual Average 2009 - 2018

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Latin America 4.6%
Middle East 5.7%
Africa 4.2%
CIS 5.3%
Asia Pacific 5.2%

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Source: Airbus
Concluding Thoughts

- Today, largest airport markets remain in North America and Europe
  - Least interesting in terms of growth opportunities
  - Mature carriers in the markets will face new and vigorous competition for global traffic flows
  - Consolidation on both continents are about building strength to grow internationally. Less about intra-continental markets.

- Trend is clearly to concentration around largest airport markets
  - Majority to be in the Asia Pacific region in 20 years
  - Asia Pacific region is forecast to be largest travel market in 20 years
  - Critical markets of tomorrow will enjoy one-stop access to virtually any point on the airline map

- Just as uneven describes the economic recovery, uneven will describe how the airline map is redrawn tomorrow