Boeing and China Working Together for MAX Tourism Development

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Boeing Commercial Airplanes

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Executive Summary

• Driven by China’s strong economic growth, air travel and tourism have been growing at rapid pace, and will continue to do so in the future.
• China is the largest domestic tourism market in the world by number of trips, and will become global tourism’s biggest source market by 2020*.
• Domestic and regional travel market will benefit from the emerging Low Cost Carrier (LCC) segment in China.
• Air travelers have shown preference for enhanced “connectivity”: more direct and more frequent.
• Boeing’s most comprehensive and preferred product lineup is strategically positioned to support sustainable growth of China’s tourism industry.

*Source: “China Travel Trends 2012” by PATA, COTRI and Dragon Tail
Outline

• China Travel Market Outlook
• Air Travel Trends
• Boeing Airplane Product Line
  Strategically positioned to support China Tourism’s Development
• Summary
Air travel and tourism are highly interrelated
Both driven by economic growth, promote each other

• Air travel demand is directly driven by economic growth;
• About 48% of air travel are for leisure/tour
International travel has seen rapid growth

Source: National Bureau of Statistics of China
Air travel should increase with GDP per capita

China is becoming the largest origin country of international outbound tourists
China air traffic varies by market

RPKs (billions)

<table>
<thead>
<tr>
<th>Region</th>
<th>2013 Traffic</th>
<th>Added Traffic 2014 - 2033</th>
<th>Annual Growth %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within China</td>
<td></td>
<td></td>
<td>6.6%</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td></td>
<td></td>
<td>7.5%</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td>6.1%</td>
</tr>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td>6.3%</td>
</tr>
<tr>
<td>Northeast Asia</td>
<td></td>
<td></td>
<td>5.0%</td>
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<tr>
<td>Middle East</td>
<td></td>
<td></td>
<td>10.0%</td>
</tr>
<tr>
<td>Oceania</td>
<td></td>
<td></td>
<td>6.6%</td>
</tr>
<tr>
<td>South Asia</td>
<td></td>
<td></td>
<td>7.5%</td>
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<tr>
<td>Africa</td>
<td></td>
<td></td>
<td>7.4%</td>
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</tbody>
</table>

China Average Growth: 6.9%

China GDP Growth: 6.2%
What’s trending in air travel?

Travelers demand and value enhanced “Connectivity”

More direct: Non-stop, direct flights

More frequent: Increased flexibility

More affordable: Value-oriented purchase decision
Air travel growth has been met by increased frequencies and nonstops

World

<table>
<thead>
<tr>
<th>Year</th>
<th>Air Travel Growth</th>
<th>Frequency Growth</th>
<th>Nonstop Markets</th>
<th>Average Airplane Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>1995</td>
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<td>2009</td>
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<tr>
<td>2011</td>
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<tr>
<td>2013</td>
<td></td>
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</tbody>
</table>

SOURCE: August OAG
Index 1993=1.00

Air Travel Trends
10-year reflection on China’s aviation market growth

**Passengers carried (mil)**

- 2003: 100
- 2013: 400

**Jet fleet**

- 2003: 50
- 2013: 200

**City pairs flown by mainland carriers**

- 2003: 612 (Intra-China), 138 (Int’l)
- 2013: 1,250 (Intra-China), 316 (Int’l)

**Airports for commercial services**

- 2003: 50
- 2013: 150

Sources:
- Flight Global Ascend Online Database
- OAG August Schedules
- CAAC

Air Travel Trends
China will need over 6,000 new airplanes valued at $870 billion

Number of airplanes

<table>
<thead>
<tr>
<th>Airplane Type</th>
<th>Number</th>
<th>Value, billion $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional jets</td>
<td>200</td>
<td>10</td>
</tr>
<tr>
<td>Single-aisle wide-body</td>
<td>4,340</td>
<td>430</td>
</tr>
<tr>
<td>Small wide-body</td>
<td>780</td>
<td>200</td>
</tr>
<tr>
<td>Medium wide-body</td>
<td>640</td>
<td>210</td>
</tr>
<tr>
<td>Large wide-body</td>
<td>60</td>
<td>20</td>
</tr>
</tbody>
</table>

Air Travel Trends

China will need over 6,000 new airplanes valued at $870 billion.
China LCC growth will mirror worldwide growth

LCC expansion to further stimulate more air traffic demand

Source: CAPA, OAG
Strong growth opportunities exist for Chinese airlines on international market

Through network development and service innovation

ASK capacity market share in China’s international long-haul market:
*majority held by foreign carriers*

Average yield on international routes in/out of China:
*improvement opportunity*

Source: OAG, Sabre
Boeing product line-up vs. the competition

Superior value, efficient market coverage

**Airbus**
- A380
- A350-1000
- A350-900
- A330-900
- A350-800
- A330-800
- A321neo
- A320neo
- A319neo

**Boeing**
- 747-8
- 777-9X
- 777-8X
- 787-10
- 787-9
- 787-8
- 737 MAX 9
- 737 MAX 8
- 737 MAX 7
Boeing product line supports China’s growing tourism industry

**787**
- Most Efficient long range family
- Unrivaled passenger experience
- Better Economics than current and expected alternatives

**777X**
- 12% lower fuel consumption and CO₂ compared to A350
- 10% lower operating costs
- Largest and most efficient twin-engine jet

**737 MAX**
- 12 more seats than A320 and lower trip cost
- Lower weight per seat and lower thrust
- MAX retains economic and range advantage over neo

**747-8**
- 16% reduction in fuel and CO₂
- Lower trip cost per seat and per trip compared to A380
- 30% smaller noise footprint
787 Dreamliner opening new markets around the world
Over 70 new 787 routes through year-end 2014

787 has the lowest operating cost:

<table>
<thead>
<tr>
<th>Route</th>
<th>A330-800neo</th>
<th>A330-200 (Base)</th>
<th>787-8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-13%</td>
<td>-4%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Route</th>
<th>A330-900neo</th>
<th>A330-300 (Base)</th>
<th>787-9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-15%</td>
<td>-4%</td>
<td>0%</td>
</tr>
</tbody>
</table>

* Seat-mile operating cost comparison for 6,000-nmi mission
777X: A great new beginning

A new passenger experience level

Empennage

New high-span wing

Fuselage

Modified landing gear

New advanced GE engine

Systems

777-8X: open long-range market with leading flexibility and efficiency

777-9X: the most efficient twin-aisle uniquely positioned for growth

<table>
<thead>
<tr>
<th></th>
<th>777-300ER</th>
<th>777-8X</th>
<th>777-9X</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTOW</td>
<td>351,530 kg (775,000 lb)</td>
<td>351,530 kg (775,000 lb)</td>
<td>351,530 kg (775,000 lb)</td>
</tr>
<tr>
<td>Passengers</td>
<td>386</td>
<td>355</td>
<td>406</td>
</tr>
</tbody>
</table>
747-8: An incredible new airplane
Better efficiency, higher revenue, less risk

Strategic growth with
Lower fuel burn
Lower cost
Passenger appeal
No risk

New wing
Enhanced systems
Advanced materials
Modern flight deck
Innovative interior design
787 technology engines

Boeing Product Line
MAX Efficiency: 14% Lower fuel consumption
Fuel per seat comparison

- **737-800W**
  - 162 seats
  - Uses 14% less fuel

- **737 MAX 8**
  - 162 seats

- **A320**
  - 150 seats
  - Uses 13% less fuel

- **A320neo**
  - 150 seats

**Boeing Product Line**

- **CFM engines**
- **Typical mission rules**
- **800-nmi trip**
- **Two-class seating**
- **737-800 includes optional winglets**

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22% more 737s serving LCCs than A320 worldwide

737 operators
(1,948)

A320 operators
(1,603)

The 737 is preferred by successful low-cost carriers

Source: Centre for Asia Pacific Aviation, July 31 2014
Driven by China’s strong economic growth, both air travel and tourism will continue to grow rapidly.

Travelers tend to prefer and value enhanced connectivity: more non-stop flights, more frequencies and more affordable.

Boeing’s most comprehensive and preferred product lineup is strategically positioned to support sustainable growth of China’s tourism industry.