Global Market Forecast 2014-2033
Presented by: Andrew Gordon
Director Strategic Marketing & Analysis

Global Market Forecast
Drivers & Results
The first commercial flight was 100 years ago

Aviation’s benefit

- 23 minutes
- 2 hours
- 4 – 12 hours
- 20 hours
Air travel has proved to be resilient to external shocks

Source: ICAO, Airbus

73% growth through multiple crises over the last ten years

World annual traffic (RPKs - trillions)

- Oil Crisis
- Oil Crisis
- Gulf Crisis
- Asian Crisis
- 9/11 SARS
- Financial Crisis

Source: ICAO, Airbus
World inflation adjusted average yield stabilising after strong decrease in the 80s and the 90s

Source: ICAO, IATA, Airbus
More movements, more connectivity….

Airport movements

Airports movements per airport over time:
- Avg. number of movements per airport
- 1980: 10,000
- 2013: 20,000
- Increase by 2.4 times

Airport connectivity

Avg. number of destinations per airport over time:
- Avg. number of destinations per airport
- 1980: 6
- 2013: 14
- Increase by 1.8 times

Source: OAG, Airbus
More seats, more seats filled…

Offered seats per aircraft

Avg. number of offered seats per aircraft (000)


Load factors

World passenger load factors (%)


Source: OAG, Ascend, Airbus

Source: ICAO, OAG, Airbus

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Less fuel burn, therefore less emissions…

**Fuel consumption**

Kilograms per passenger per trip (avg.)

-31%

**CO2 emissions**

Kilograms per passenger per trip (avg.)

-31%

Source: ICAO, IATA, Airbus
High oil prices here for the long term…

Brent oil price (nominal US$ per bbl)

Source: IHS Global Insight Energy, Airbus

* Currency in nominal terms
Passenger traffic is outperforming GDP growth

World real GDP and passenger traffic

Source: IHS Global Insight, OAG, Airbus
Underlying drivers indicate a positive economic outlook

Year-over-year quarterly evolution (%)

Source: IHS Global Insight, Airbus
* Values corrected for inflation
The World of 2033 will be very different from today

<table>
<thead>
<tr>
<th>2013</th>
<th>2023</th>
<th>2033</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- US</td>
<td>1- China</td>
<td>1- China</td>
</tr>
<tr>
<td>2- China</td>
<td>2- US</td>
<td>2- US</td>
</tr>
<tr>
<td>3- Japan</td>
<td>3- India</td>
<td>3- India</td>
</tr>
<tr>
<td>4- Germany</td>
<td>4- Japan</td>
<td>4- Japan</td>
</tr>
<tr>
<td>5- France</td>
<td>5- Germany</td>
<td>5- Brazil</td>
</tr>
<tr>
<td>6- UK</td>
<td>6- UK</td>
<td>6- Germany</td>
</tr>
<tr>
<td>7- Brazil</td>
<td>7- France</td>
<td>7- UK</td>
</tr>
<tr>
<td>8- Russia</td>
<td>8- Brazil</td>
<td>8- Russia</td>
</tr>
<tr>
<td>9- Italy</td>
<td>9- Russia</td>
<td>9- France</td>
</tr>
<tr>
<td>10- India</td>
<td>10- Italy</td>
<td>10- Indonesia</td>
</tr>
</tbody>
</table>

Source: IHS Global Insight, Airbus

GDP ranking based on nominal GDP expressed in US$
A two-speed economic world

Comparison of year-over-year GDP growth

Real GDP growth (%)

Emerging economies*

Advanced economies**

* 54 emerging economies
** 32 advanced economies

Source: IHS Global Insight, Airbus
Diverse emerging economies spread across the globe

Emerging economies (54 countries)
All other countries (150 countries)

Source: IHS Global Insight, Airbus
Emerging economies are driving future growth

### Today

<table>
<thead>
<tr>
<th>GDP</th>
<th>Population</th>
<th>Passengers</th>
<th>In-service fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>36%</td>
<td>69%</td>
<td>42%</td>
<td>38%</td>
</tr>
</tbody>
</table>

### 2033

<table>
<thead>
<tr>
<th>GDP</th>
<th>Population</th>
<th>Passengers</th>
<th>In-service fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>54%</td>
<td>67%</td>
<td>59%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Source: IHS Global Insight, Airbus

* Nominal GDP in US$
Emerging regions will account for the largest share of origin and destination traffic worldwide.

World annual RPK (trillion)

- Advanced – Advanced: 2.6% p.a.
- Emerging – Advanced: 5.0% p.a.

Source: ICAO, Sabre GDD, Airbus GMF


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Air transport growth is highest in expanding regions

**Emerging/Developing**
- China
- India
- Middle East
- Asia
- Africa
- CIS
- Latin America
- Eastern Europe

**Yearly RPK growth 2014 - 2033**
- 6.2 billion people 2014
  - +6.0%

**Advanced**
- Western Europe
- North America
- Japan

**Yearly RPK growth 2014 - 2033**
- 1 billion people 2014
  - +4.2%

Billions of people will increasingly want to travel by air
Urbanisation to increase

World population and share of urban agglomeration evolution

Urban population: 1.3B, 2.3B, 3.5B, 5.0B, 6.4B

Source: UN population division, Airbus
Global Middle Class to more than double

Global Middle Class**
(Millions of people)

Emerging countries

North America
Europe

Source: Kharas and Gertz, Airbus

* EOY 2013

** Households with daily expenditures between $10 and $100 per person (at PPP)
North Americans and Europeans are the most willing to fly today…

2013 trips per capita

Europe ~1 trip per capita
North America 1.6 trips per capita
China 0.25 trips per capita
India 0.06 trips per capita

Source: Sabre (annualized September 2013 data), IHS Global Insight, Airbus

22% of the population of the emerging countries took a trip a year in 2013

*Passengers originating from respective country
Bubble size proportional to population

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…but by 2033, China’s potential will reach European levels

66% of the population of the emerging countries will take a trip a year in 2033

Source: Sabre (annualized September 2013 data), IHS Global Insight, Airbus

*Passengers originating from respective country
Bubble size proportional to population

2033 trips per capita

2033 GDP per capita (thousands $US)
International tourist arrivals expected to reach 1.6 billion people by 2020

Source: World Tourism Organization, Airbus
Tourism stimulates economic and air transport growth

Economic growth catalyst

Real GDP (CAGR* 1995-2012)

International tourist arrivals (CAGR* 1995-2012)

Air transport growth catalyst

ASKs (CAGR* 1995-2012)

International tourist arrivals (CAGR* 1995-2012)

Source: World Tourism Organization, OAG, IHS Global Insight, Airbus

* Compound Annual Growth Rate
International students have taken advantages of increased mobility

Number of international students and share of World Population

- International students (Thousands)
- International Students / World population ratio (Base 1 in 1975)

Source: OECD, UN Population Division, Airbus
Long-haul traffic grows stronger than short haul traffic

Evolution of long-haul vs short-haul traffic (ASKs), 1973-2013, (Base 100 in 1973)

Since 1973, Long-haul traffic has grown 1% per year faster than short-haul traffic

Source: OAG

* Long haul traffic: flight distance >2,000nm
42 Aviation Mega-Cities in 2013

2013 Aviation Mega-Cities

- >50,000 daily long-haul passengers
- >20,000 daily long-haul passengers
- >10,000 daily long-haul passengers

Daily Passengers: Long Haul traffic to/from/via Mega Cities

90%+ of long-haul traffic on routes to/from/via 42 cities

22% of World GDP in 2013

Source: McKinsey, UNPD, Airbus GMF
Larger aircraft will help Aviation mega-cities and their airports grow and prosper

2013 Aviation Mega-Cities*

On the 42 Aviation Mega-Cities’ airports in 2013, 36 have scheduling constrained today

*Aviation Mega-Cities International Airports

- **IATA WSG level 1**: airport infrastructure is adequate
- **IATA WSG level 2**: airports with potential for congestion
- **IATA WSG level 3**: airports where conditions make it impossible to meet demand

Source: IATA WSG database, Airbus GMF
The bigger the city, the wealthier the population

2013 Aviation Mega-Cities and 2013 GDP per capita (real 2010 $US, thousands)

GDP per capita in Aviation mega-cities

x4

vs. World average

Source: McKinsey, UNPD, IHS Global Insight, Airbus GMF

Other large cities: urban agglomerations with a population above 300,000 people
Routes between Aviation Mega-cities have higher percentages of premium pax.

**Percentage of premium passengers on route types**

Based on 2012 Aviation Mega-Cities

- Aviation Mega-City to Aviation Mega-City: 13%
- Aviation Mega-City <> Secondary City: 12%
- Secondary City to Secondary City: 2%

Source: SABRE, Airbus Market Research and Forecasts | Cities with more than 10,000 daily passengers, Long-haul traffic: flight distance >2,000nm, excl. domestic traffic
... and 91 Mega-Cities by 2033

2033 Aviation Mega-Cities

- 91 Aviation Mega-cities
- 2.2M Daily Passengers: Long Haul traffic to/from/via Mega Cities
- 95%+ of long-haul traffic on routes to/from/via 91 cities
- 35% of World GDP in 2013

Source: McKinsey, UNPD, Airbus GMF

- >50,000 daily long-haul passengers
- >20,000 daily long-haul passengers
- >10,000 daily long-haul passengers
A 20 year aircraft demand and passenger traffic forecast

Market Research
- Trends Analysis
  - Consumer & Travel Surveys
  - Tourism
  - Migration
  - Traffic flows
  - Passenger demands

- Airlines
  - Business Models
  - Operations
  - Competition
  - Geopolitics

- Governments & Regulators
  - Liberalization/deregulation
  - Investments and constraints
  - Geopolitics

Forecast
- Traffic
  - Economics and Econometrics
  - Fuel costs
  - Yields
  - Load Factors
  - Trade and Value of Goods

- Network Development
  - Route planning
  - Origin and destination demand
  - Population centers

- Fleet trends
  - Aircraft economics
  - Utilization
  - Fleet age and retirements

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Air traffic will double in the next 15 years

Source: ICAO, Airbus GMF 2014
Domestic PRC to become number one within 10 years

Billion RPKs

20-year annual growth*

<table>
<thead>
<tr>
<th>Region</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic PRC</td>
<td>7.1%</td>
</tr>
<tr>
<td>Domestic USA</td>
<td>1.9%</td>
</tr>
<tr>
<td>Intra Western Europe</td>
<td>2.9%</td>
</tr>
<tr>
<td>Western Europe - USA</td>
<td>2.9%</td>
</tr>
<tr>
<td>Domestic Asia Emerging</td>
<td>6.9%</td>
</tr>
<tr>
<td>Asia Emerging - Western Europe</td>
<td>4.0%</td>
</tr>
<tr>
<td>Domestic India</td>
<td>9.5%</td>
</tr>
<tr>
<td>Indian Sub-Continent - Middle East</td>
<td>6.8%</td>
</tr>
<tr>
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<tr>
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<td>Asia Emerging - PRC</td>
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<td>Central Europe - Western Europe</td>
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<tr>
<td>Asia Advanced - Asia Emerging</td>
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<tr>
<td>Sub Sahara Africa - Western Europe</td>
<td>4.3%</td>
</tr>
</tbody>
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* *20-year annual growth rate (CAGR)
Source: Airbus GMF
Domestic PRC to become number one within 10 years

2013 – 2033 Billion RPK

- Domestic India
- Asia Emerging - PRC
- Domestic PRC
- Domestic Asia Emerging
- Indian Sub-Continent - Middle East
- Asia Emerging - Middle East
- PRC - USA
- Indian Sub-Continent - USA
- Domestic Brazil
- Asia Advanced - Asia Emerging
- Western Europe - PRC
- Central Europe - Western Europe
- South America - USA
- Western Europe - Middle East
- Sub Sahara Africa - Western Europe
- Western Europe - South America
- Asia Emerging - Western Europe
- Western Europe - USA
- Intra Western Europe
- Domestic USA

20-year annual growth*

- 2013
- 2033

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<th>2033</th>
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<td></td>
</tr>
<tr>
<td>Central Europe - Western Europe</td>
<td>5.3%</td>
<td></td>
</tr>
<tr>
<td>South America - USA</td>
<td>4.6%</td>
<td></td>
</tr>
<tr>
<td>Western Europe - Middle East</td>
<td>4.3%</td>
<td></td>
</tr>
<tr>
<td>Sub Sahara Africa - Western Europe</td>
<td>4.3%</td>
<td></td>
</tr>
<tr>
<td>Western Europe - South America</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>Asia Emerging - Western Europe</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>Western Europe - USA</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>Intra Western Europe</td>
<td>1.9%</td>
<td></td>
</tr>
</tbody>
</table>

* 20-year annual growth rate (CAGR)
Source: Airbus GMF 2014
Asia-Pacific to lead in world traffic by 2033

RPK traffic by airline domicile (billions)

<table>
<thead>
<tr>
<th>Region</th>
<th>2013 Traffic</th>
<th>2014-2033 Traffic</th>
<th>% of 2013 World RPK</th>
<th>20-Year Growth</th>
<th>% of 2033 World RPK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia-Pacific</td>
<td></td>
<td></td>
<td>30%</td>
<td>5.7%</td>
<td>36%</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td>25%</td>
<td>3.6%</td>
<td>20%</td>
</tr>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td>24%</td>
<td>2.9%</td>
<td>17%</td>
</tr>
<tr>
<td>Middle East</td>
<td></td>
<td></td>
<td>8%</td>
<td>7.1%</td>
<td>13%</td>
</tr>
<tr>
<td>Latin America</td>
<td></td>
<td></td>
<td>5%</td>
<td>5.4%</td>
<td>6%</td>
</tr>
<tr>
<td>CIS</td>
<td></td>
<td></td>
<td>4%</td>
<td>5.4%</td>
<td>5%</td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td></td>
<td>3%</td>
<td>4.7%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: Airbus GMF 2014

20-year world annual traffic growth: 4.7%
## Global Market Forecast 2014: Highlights

**GMF 2014 key numbers and 20-year change**

<table>
<thead>
<tr>
<th>World Fleet Forecast</th>
<th>2013</th>
<th>2033</th>
<th>% change 2013-2033</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPK (trillion)</td>
<td>5.8</td>
<td>14.6</td>
<td>151%</td>
</tr>
<tr>
<td>Passenger Aircraft Fleet</td>
<td>16,855</td>
<td>34,818</td>
<td>107%</td>
</tr>
<tr>
<td>New passenger aircraft deliveries</td>
<td>30,555</td>
<td>65%</td>
<td></td>
</tr>
<tr>
<td>Dedicated Freighters</td>
<td>1,605</td>
<td>2,645</td>
<td>65%</td>
</tr>
<tr>
<td>New freighter aircraft deliveries</td>
<td>803</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total New Aircraft Deliveries**: 31,358

**New aircraft deliveries**

- +2,132 aircraft

GMF 2014 vs. GMF 2013

---

Passenger aircraft (≥ 100 seats)

Jet freight aircraft (>10 tons)

Source: Airbus GMF
Single-aisle: 70% of units; Wide-bodies: 55% of value

20-year new deliveries of passenger and freighter aircraft

- **Single-aisle**: 22,100
- **Twin-aisle**: 7,800
- **Very Large Aircraft**: 1,500

<table>
<thead>
<tr>
<th>Category</th>
<th>% units</th>
<th>% value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-aisle</td>
<td>70%</td>
<td>45%</td>
</tr>
<tr>
<td>Twin-aisle</td>
<td>25%</td>
<td>44%</td>
</tr>
<tr>
<td>Very Large Aircraft</td>
<td>5%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Passenger aircraft (≥ 100 seats) and jet freight aircraft (>10 tons)

Source: Airbus
Demand for around 31,400 new aircraft

Fleet in service evolution; 2014-2033

Source: Airbus

Note: Passenger aircraft ≥100 seats, Freighter aircraft ≥10 tonnes
…to estimate global demand

20-year demand by category

<table>
<thead>
<tr>
<th>Region</th>
<th>Single-aisle</th>
<th>Twin-aisle/VLA</th>
<th>Total aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>5,871</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latin America</td>
<td></td>
<td>2,294</td>
<td>2,294</td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td>985</td>
<td>2,294</td>
</tr>
<tr>
<td>Middle East</td>
<td></td>
<td></td>
<td>2,242</td>
</tr>
<tr>
<td>Europe</td>
<td>6,253</td>
<td></td>
<td>12,472</td>
</tr>
<tr>
<td>CIS</td>
<td></td>
<td>1,241</td>
<td></td>
</tr>
<tr>
<td>Middle East</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia Pacific</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worldwide</td>
<td>22,071</td>
<td>9,287</td>
<td>12,472</td>
</tr>
</tbody>
</table>

Source: GMF 2013
Airbus backlog well aligned with demand forecast

Airbus backlog and GMF demand forecast by region

- **North America**: 11% (18% of total)
- **Europe & CIS**: 17% (24% of total)
- **Latin America**: 6% (7% of total)
- **Africa**: 1% (3% of total)
- **Middle East**: 8% (7% of total)
- **ASIA Pacific**: 31% (40% of total)

**Total backlog**: 5,892 aircraft

Source: Airbus, Airbus GMF
As at end August 2014
Total backlog includes undisclosed
Summary

• **Strong growth in passenger traffic** – resilient growth through a difficult, but improving economic period

• **Demand for 31,400 new aircraft by 2033** – ~30,600 passenger aircraft and nearly 800 freighter aircraft

• **Replacement of ageing fleets** – 20 year demand for 12,400 passenger aircraft for replacement, largely in the single-aisle segment

• **Single-aisle aircraft represent 70% of demand in units, but wide-body aircraft represent 55% of value**

• **VLA demand driven by aviation mega-cities** – more than 95%+ of all long-haul passengers will fly to, from or through 91 aviation mega-cities by 2033