Airlines worldwide:
The value they create and the challenges they face

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To represent, lead and serve the airline industry
Key points (value created/challenges faced)

- Great value for consumers – slide 3-4
- $6.4 trillion of goods go by air cargo – slide 5
- Global supply chains (Dell, Apple) depend on air – slide 6
- Wider economy get large benefits – slides 7-8
- Massive expansion in demand ahead – slide 9
- Requires $4.5 trillion investment finance – slide 10
- But airline investors earn nothing – slides 11-12
- Ancillaries allow marginal profit, no more – slide 12
- Periods of profit short-lived – slide 13
- Market pressures for better profits worldwide – slide 14
- Not just problem of ‘mature, legacy’ airlines – slide 15
- Porter 5-forces ‘intense competition’ – slide 16
- Value chain profitability very unbalanced – slide 17
- Rising cost of infrastructure – slide 18
- Governments part of the problem – slide 19
- Cost threats from regulation – slide 20
- Dealing with climate change – slide 21-24
The value proposition for air travel remains strong
It’s safer, it’s greener and it’s still a bargain

* 5-year moving average fatal accidents per passenger departure
Source: Constructed from worldwide data from ICAO and IATA
The quality of air service has improved
Even in the past 5 years the main facets of airline service have got better

<table>
<thead>
<tr>
<th>On-time arrival rate*</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>European flights**</td>
<td>77.9%</td>
<td>78.3%</td>
<td>82.1%</td>
<td>75.8%</td>
<td>82.1%</td>
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<tr>
<td>US domestic flights***</td>
<td>73.4%</td>
<td>76.0%</td>
<td>79.5%</td>
<td>79.8%</td>
<td>79.6%</td>
<td>82.3%</td>
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<tr>
<td>Mishandled bags per 1000 passengers</td>
<td></td>
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<td></td>
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<tr>
<td>Worldwide^</td>
<td>19</td>
<td>15</td>
<td>11</td>
<td>12</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Cancelled flights</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>European network airlines^^</td>
<td>1.40%</td>
<td>1.38%</td>
<td>1.08%</td>
<td>3.43%^*</td>
<td>0.94%</td>
<td></td>
</tr>
<tr>
<td>US domestic flights^^^</td>
<td>2.16%</td>
<td>1.96%</td>
<td>1.39%</td>
<td>1.76%</td>
<td>1.91%</td>
<td>1.27%</td>
</tr>
</tbody>
</table>

* % flights arriving within 15 minutes scheduled time
** http://www.eurocontrol.int/articles/coda-publications
*** http://airconsumer.ost.dot.gov/reports/; table 1A YTD December figures
^ SITA Baggage Report 2012
^^ AEA
^^^ http://www.transtats.bts.gov/HomeDrillChart.asp; On time performance - Flight delays at a glance
^* Impacted by airspace closures due to Icelandic volcanic ash cloud
Over $6 trillion of goods annually are now carried by air
35% of world trade is carried by air; a key enabler of globalization

Air freight tonne kilometers flown and the value of goods carried

Source: ICAO, IATA, WTO. Value carried by air = world merchandise exports * 35% (35% estimated by The Colography Group, 2005)
Air connectivity has enabled global supply chains
Dell, Apple, Amazon would look very different without rapid air freight

Businesses can set up much more efficient global supply chains

Source: Dell, IATA
Aviation plays a major role in most economies

Footprint of aviation and tourism measured by the sector’s GVA as % GDP

Source: Oxford Economics. [http://www.benefitsofaviation.aero/Pages/default.aspx](http://www.benefitsofaviation.aero/Pages/default.aspx) Note: GVA = Gross Value Added which is mainly wages and profits. GDP = Gross Domestic Product
Size of aviation’s GDP footprint linked to development

The size of aviation’s GDP footprint depends, among other factors, on the country’s stage of economic development (GDP per capita).

Aviation and tourism as % GDP

Source: Oxford Economics [http://www.benefitsofaviation.aero/Pages/default.aspx](http://www.benefitsofaviation.aero/Pages/default.aspx)
Massive expansion ahead for emerging markets
Expanding middle classes drive both travel and air cargo flows
Serving this demand will require a big expansion of investment

Global middle income class in 2009 and prediction for 2030

Source: OECD, Standard Chartered Bank
Market expansion will require $4.5 trillion investment
Airlines will need to raise funds to invest in 34,000 new aircraft over 20 years

Source: Boeing Current Market Outlook
Even in the good years airline returns are inadequate. Below WACC returns indicate intense competition and fragile financing.

Source: IATA
Revenue per passenger exceeds cost by just $2.56 (1%)
Excluding $12 ancillaries revenues would have lagged costs by $10 (-5%)

2012 worldwide airline financial results per departing passenger

Source: Ancillary revenues from Idea Works 2012 estimate, other data IATA. Costs include operating items and debt interest.
Periods of profit in the industry are typically short-lived

Average 1990-2012 net profit margin for airlines worldwide was 0.0%!

Worldwide net profits, US$ billion

Source: ICAO, IATA
Airlines subject to market pressure to raise profitability
Majority of airlines are now privately owned in most regions

Ownership of airlines, weighted by ASKs
Source: various

Lack of profitability not due to business model or region
Airlines generating average EBIT margins of more than 8% during the 2000s

Porter’s 5-forces show the high intensity of competition
Four out of five rate ‘high’ with the fifth ‘medium and rising’

- **Bargaining Power of Suppliers:** HIGH
  - Powerful labor unions especially when controlling operations at network hubs
  - Aircraft and engine producers are both concentrated oligopolies
  - Airports are local monopolies with significant power
  - Airport services (handling, catering, cleaning) are also concentrated in a small number of firms, but low switching costs

- **Rivalry Among Existing Competitors:** HIGH
  - Growth has been rapid but volatile
  - Perishable product
  - Limited product differentiation; similar company structures
  - High sunk costs per aircraft, low marginal costs per passenger
  - Limited economies of scale
  - Significant exit barriers
  - Multiple direct and indirect rivals

- **Threat of New Entrants:** HIGH

- **Threat of Substitute Products or Services:** MEDIUM and RISING
  - The number of customers who can afford air travel is increasing substantially, mainly in emerging markets
  - Technology for web-conferencing is improving
  - Fast trains are competitive with airlines on short haul due to security measures
  - Travel can be delayed, limited, or done without
  - Environmental issues challenge air travel

- **Bargaining Power of Channels:** HIGH
  - High concentration among GDS and aggregator websites
  - Websites increase price transparency
  - Travel agents focus on the interests of corporate buyers to reduce travel costs
  - Limited incumbency advantages
  - Low switching costs
  - Some demand-side benefits of scale
  - Easy access to distribution channels

- **Bargaining Power of Buyers:** HIGH
  - Buyers are fragmented
  - Air travel perceived as a standardized product
  - Low switching costs for most customers
  - Price sensitive, because travel is a meaningful share of discretionary spending

Profitability is very unbalanced across the value chain
Airlines sit in the middle of the value chain making the least returns

Worldwide, return on invested capital %, 2002-2009

Cost of Capital %
- Manufacturers: 9-11
- Lessors: 9-11
- All services (MRO, Cat, GrH, Fuel): 7-9
- Airports: 6-8
- ANSPs: 6-8
- Airlines: 7-10
- CRS/GDS: 10-11
- Travel Agents: 8-11
- Freight Forwarders: 7-8

Source: McKinsey & Company for IATA
The rising cost of airports and air navigation services
Payments by airlines and passengers for infrastructure services

2007-2011
- Rise in infrastructure costs: 28%
- Rise in passenger numbers: 17%
- Rise in infrastructure costs per passenger: 9%
- Rise in OECD CPI: 9.3%
- Rise in airline revenues per passenger: 0.1%

Governments are part of the problem
Porter’s 5-forces model identifies how government intervenes in the market

- Threat of Substitute Products or Services
  - Government financing for substitutes (e.g., high-speed trains)
  - Inconvenience and delays created by safety procedures and air traffic control for airline travel

- Rivalry Among Existing Competitors
  - Competition rules limit consolidation
  - Restrictions to FDI/M&A limit consolidation
  - Government ownership leads to uneconomic decisions, though privatization is increasing
  - Public service requirements require serving unprofitable markets
  - Bankruptcy laws and bail-outs allow uneconomic carriers to persist
  - Environmental standards and taxes raise costs
  - Safety and air traffic control procedures reduce service quality and create costs
  - Safety guidelines and technical standards limit potential for differentiation

- Bargaining Power of Suppliers
  - Subsidies and export-financing for aircraft manufacturers pushes capacity growth and entry
  - Labor market regulations give power to unions and create advantages for new entrants
  - Privatization of airports and ground handling services has raised costs
  - Government-mandated fees (Over flight rights, air control, security fees) raise costs

- Bargaining Power of Channels
  - Consumer protection laws on pricing transparency and delays raise airline costs

- Bargaining Power of Buyers
  - “Fly national’ rules for government employees and government contractors distort market choices

- Threat of New Entrants
  - Some legal entry barriers remain (domestic, international) which limit consolidation
  - Policies influence allocation of slots/gates
  - Safety standards create limited barriers

Existing and proposed regulation risk significant cost
A selection of regulations/policies illustrating industry and market-level costs

Policy risk impact

Total cost for industry: $1.5bn

Source: IATA
Industry is addressing the climate change challenge. Lower compliance cost for Carbon Neutral Growth from 2020 requires government to deliver on infrastructure and biofuel support.

**Worldwide CO₂ emissions from commercial air transport, mT per year**

- **677mT in 2012**
- **774mT in 2020**
- **237mT offsets**
- **1226mT CO₂ in 2030 after fleet renewal and higher load factors**
- **CNG2020 cap 774mT**

Source: IATA Aviation Carbon Model
Airlines bought 25,000 new aircraft during 1990-2012. Spending equivalent of $3 trillion when valued at today’s aircraft prices.

Source: Ascend
Airlines improved fuel efficiency by 41% over 1990-2012
Fuel efficiency measured in litres of fuel burned per 100 RTK

Source: IATA calculations
During 1990-2012 airlines saved 4.5 billion tonnes CO$_2$

Comparison of actual emissions with the level had fuel efficiency remained frozen

**C0$_2$ from commercial airline fuel burn, actual versus frozen technology**

CO$_2$ emissions if industry fuel efficiency had remained frozen at 1990 levels

*Cumulative 4.5 billion tonnes of CO$_2$ saved 1990-2012*

Actual airline industry CO$_2$ emissions

Source: IATA Aviation Carbon Model