Airport business issues

Air Transport Management Seminar
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• Airport costs
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### Turnover and operating margin:
Top 5 airports and their largest airline customer (2006)

<table>
<thead>
<tr>
<th>Airport</th>
<th>Turnover (€million)</th>
<th>Margin (%)</th>
<th>Largest Airline Customer</th>
<th>Turnover (€million)</th>
<th>Margin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAA</td>
<td>3,965</td>
<td>35%</td>
<td>British Airways</td>
<td>11,465</td>
<td>7%</td>
</tr>
<tr>
<td>Aena</td>
<td>2,900</td>
<td>12%</td>
<td>Iberia</td>
<td>5,187</td>
<td>2%</td>
</tr>
<tr>
<td>Fraport</td>
<td>2,250</td>
<td>15%</td>
<td>Lufthansa</td>
<td>17,735</td>
<td>4%</td>
</tr>
<tr>
<td>Aeroports de Paris</td>
<td>2,076</td>
<td>17%</td>
<td>Air France / KLM</td>
<td>21,139</td>
<td>5%</td>
</tr>
<tr>
<td>ANA</td>
<td>271</td>
<td>24%</td>
<td>TAP</td>
<td>2,086</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: Airline Business
Overview of the airport business

% operating margin:
top 50 airports and top 150 airlines 1998/9 to 2005/6

Source: Airline Business
Economic characteristics

- Economies of scale
- High sunk costs / inflexible use of assets
- Long-haul traffic more profitable for airport
- Market power
Economic characteristics

Economies of scale

- Airports have high fixed infrastructure costs
- Airports with low traffic volumes have high unit costs (costs per passenger or aircraft movement)
  - problem of cost recovery & need for government subsidy
  - Support from larger airports
- Unit costs decline as traffic volumes rise – up to a point
- Unit revenues increase as traffic volumes rise
  - increasing diversification of revenue sources
  - higher international traffic
- Possible diseconomies of scale at very high levels of traffic
Economic characteristics
Economies of scale

Average operating cost per passenger v passenger traffic in 2005/6 financial year
selected UK regional airports

Source: CRI
Economic characteristics
Inflexible use of assets

- Airports are asset intensive and subject to capital investment cycles.
- Airports can increase capacity incrementally but will have to engage in large single investments at some stages in their development.
- Large investments represent a considerable sunk cost – (limited alternative use)
  - Immediate impact on operating costs and profitability.
- Timing is very important – decisions complicated by:
  - Long planning horizons.
  - 30-year asset life.
  - Volatility in airline markets.
  - Changing aircraft technology.
Economic characteristics
Inflexible use of assets

Airport long and short-run average costs

Operating cost per passenger vs. Number of passengers

- 1 terminal & 1 runway
- 2 terminal & 1 runway
- SRAC 1
- SRAC 2
- C1
- C2
- Q1
- Q2

long-run average average costs
Economic characteristics
Long-haul more profitable

- Costs of handling long-haul traffic are higher than short-haul (BAA it is 62%)
  - Airbridges required for larger aircraft
  - More apron space and wider runway & taxiways
  - More space for departing passengers
  - Baggage system costs
  - Customs and immigration

- Revenues from long-haul traffic are higher than short-haul
  - Duty-free / retail
  - Longer passenger dwell-time
  - Higher spend from non-resident passengers
Market power defined as degree to which a supplier (airport) can control prices it charges to the airlines.

The airport industry is characterised by the presence of high entry barriers:
- Planning regulations restricting competing airport development.

Market power is very high where cities / regions are served by only one airport (Lisbon & Athens).

Market power is more moderate in cities / regions served by more than one airport (London, Seoul):
- Depends on extent to which airports are substitutes.
- Depends on existence of traffic distribution rules.
• Airport operators have monopoly of airports in multiple-airport regions / cities (e.g. Paris, Frankfurt, New York)

• Airports can have high degree of market power relative to their main airline customer (base carrier).
  • Base carriers have high sunk investments at airports (i.e. TAP in Lisbon)
  • Base carriers unlikely to shift operations because of sunk costs
  • Base carriers may react by cutting some routes or suspending further route development

• Market power can also be high in relation to network feeder carriers
Economic characteristics

Market power

- Market power is lower for non-base carriers
- Airline reaction depends on their elasticity of demand with respect to how much they pay in charges to airports. Function of:
  - The price elasticity of demand for air travel on the route to that airport
  - The % of the route operating costs attributable to aeronautical charges
  - Availability of alternative substitute airports
Airport Catchment areas (SE England)
90-minute drive time

Source: UK Competition Commission
Airport business segments
airport customers

- Airlines
- Passengers
- Visitors, employees & local residents
- Businesses (retailers)
Airport business segments

Aeronautical facilities / services
- Runway
- Taxiway
- Apron
- Ground handling
- ATC / Navigational aids
- Departure lounge
- Security / immigration
- Check-in / baggage system
- Aircraft fuel

Commercial facilities / services
- Car Park
- Duty-free
- Retail
- Food & Beverage
- Advertising
- Bureaux de Change
- Car Hire
- Hotels
- Property (Offices)
Airport business segments

- Airlines
- Airport
- Fuel
- Handling
- Maintenance
- Retail
- Passenger

- Aeronautical charges
- Property / space rental charges
- Fuel throughput
- Space rental
- Check-in rental
- Lease rental
- % Concession fee
- Car Parking Fees

www.cranfield.ac.uk
Airport revenue
aeronautical

- Aeronautical services / facilities – essential for processing passengers and aircraft
- Airlines pay aeronautical charges to use airport aeronautical services and facilities managed by the airport authority
- Most aeronautical services / facilities are managed / provided by the airport authority so airlines cannot choose between service providers
- Airline may also be able to build its own passenger terminal
- Airline may be able to choose:
  - Fuel supplier
  - Ground handling company
### Degree of market power by aeronautical facility / service

<table>
<thead>
<tr>
<th>Facility / service</th>
<th>Degree of airport authority market power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runway / taxiway / apron</td>
<td>High</td>
</tr>
<tr>
<td>Air traffic control / navaids</td>
<td>High</td>
</tr>
<tr>
<td>Passenger processing space (e.g. departure lounges)</td>
<td>High</td>
</tr>
<tr>
<td>Security</td>
<td>High</td>
</tr>
<tr>
<td>Check-in</td>
<td>Moderate to High</td>
</tr>
<tr>
<td>Ground handling</td>
<td>Low</td>
</tr>
<tr>
<td>Aircraft Fuel</td>
<td>Low</td>
</tr>
</tbody>
</table>
• Most commercial services / products are provided / offered by retailers who have a concession to trade at the airport

• Development of commercial activities allows airport authorities to spread their business risk

• Low degree of market power in airport commercial services means these activities are not subject to government economic regulation

• As traffic rises – the % of revenue from commercial services should also increase – profitability increase

• Airport commercial activities are more profitable than aeronautical
• Airports can generate locational rent from businesses – premium paid by businesses to locate on or close to an airport

• Locational rents exists for those services that require proximity to the airport (hotels, car parks, car hire, industrial parks)

• Locational rents are high:
  • if land is in short supply
  • if the airport is located some distance from the city / urban centre

• Locational rents are low if the airport is located close to the city
### Revenue by activity
**ANA Group 2006**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Revenue (€million)</th>
<th>% of total revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport charges</td>
<td>177</td>
<td>54</td>
</tr>
<tr>
<td>Retail</td>
<td>38</td>
<td>12</td>
</tr>
<tr>
<td>Security charges</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>Ground handling</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Property</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Car parks</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Car Rental</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: ANA Annual Report 2006
Airport costs

• Focus on reducing / minimising airport costs from private shareholders

• Airports across the world facing rising cost pressures driven by regulation
  • Higher security / policing costs
  • Higher energy costs
  • Higher insurance costs

• Labour is the largest single operating cost incurred by airports

• Labour costs have risen due to increased security requirements and the need to airport expand security provision
Airport costs

Operating costs
- Labour
- Security & Policing
- Maintenance
- Administration
- Procurement of services
- Procurement of materials
- Energy

Non-operating costs
- Asset Depreciation
- Interest payments
- Taxation
- Rental
Airport costs

labour

- Can represent between 30% and 40% of total costs
- Historically on decline due to increased out-sourcing worldwide
  - Average was 45% in 1983 to 30% today
- Labour costs are low where many services & functions are outsourced
- Labour costs determined by historic agreements and degree of trade union representation
- Security and ground handling are labour-intensive activities
Airport Costs
security & policing

- At Zurich airport security & policing costs are 14% of total
- Security standards set by national governments
- In some countries security provided by government agencies (USA & France)
- In many countries costs are the responsibility of airport authorities
Airport costs

• Airport costs can be reduced through out-sourcing to third-party providers

• Typical functions out-sourced include:
  • IT
  • Security
  • Cleaning / Facility Management

• Out-sourcing will reduce costs to airports but there maybe a trade-off with:
  • Quality of service
  • Terminal operational efficiency
Airport Costs

capital costs

- Fixed asset depreciation
  - depends on age of fixed assets
  - depends on airport’s stage in its investment cycle
  - asset life horizon (runways between 50 to 100 years) –
    (terminals between 20 to 50 years)

- Interest payments
  - depends on capital structure of airport authority (debt v equity)
  - high debt translates into higher interest payments
  - government owned airports can usually secure competitive
    interest rates from lenders due to government guarantee
Airport Costs
rental / lease payments to government

- Airports privatised under concession and lease based-contacts often required to pay a fee to the government
- Government owns lands and leases to an airport operator
- Payment income used to support smaller airports in the system
- Fixed rental (Argentina Airports)
- Rental fee can be based on passenger throughput (Luton)
- Rental fee based on % of airport revenue (Canadian system)
## Airport Costs

### Cost breakdown and % change 2001 to 2006

**BAA**

<table>
<thead>
<tr>
<th></th>
<th>% of total in 2005/6</th>
<th>Average p.a. % change 2000/1 to 2005/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour</td>
<td>35</td>
<td>+13</td>
</tr>
<tr>
<td>Depreciation</td>
<td>19</td>
<td>+11</td>
</tr>
<tr>
<td>Police</td>
<td>3</td>
<td>+5</td>
</tr>
<tr>
<td>Local taxes</td>
<td>7</td>
<td>+7</td>
</tr>
<tr>
<td>Utilities</td>
<td>7</td>
<td>+10</td>
</tr>
<tr>
<td>Other</td>
<td>29</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: BAA annual reports
Conclusions

• High margin industry
• Attractive industry for potential investors
• Airports facing rising costs (energy, security)
• Increasing competitive environment between airports
• Increasing focus on developing commercial revenues