

**Competition in Air Transport**

Is competition possible in the airline industry?

N. LENOIR

---

**Plan of presentation**

- Introduction: what can economic theory tell us?
- I- History of competition: regulation and deregulation of the air transport markets
- II- The characteristics of competition in the air transport industry
- III- The competing actors
- IV- Conclusion: future of competition and the role of the Authorities
Plan of presentation

- Introduction: what can economic theory tell us?
  - What is competition and why do we need it?
- I- History of competition: regulation and deregulation of the air transport markets
- II- The characteristics of competition in the air transport industry
- III- The competing actors
- IV- Conclusion: future of competition and the role of the Authorities

What is competition?

- After defining a market, we look at the number of firms (private or public) serving demand on that market
  - The definition of the market can be tricky
  - Ex of market: sodas, colas? Are they substitutes?
- There is (some amount of) competition as long as there is more than one firm on that market
- If there is only one firm, it is called a monopoly
  - = no effective competition on that market!
Why do we need competition?

- Competition puts pressure on firms to
  - lower their costs, increase their productivity
  - do better than others: innovate
  - lower their prices
- For customers
  - larger choice
  - lower prices
  - better products, better quality for services

Perfect competition

- A theoretical paradigm: an ideal case
  - does not really exist
- There is perfect competition in a market when there is a large number of (small) firms, and a large number of customers
  - no single firm has an influence on price
  - price emerges as a result of confronting supply of many firms and demand from many customers
- Competition drives prices down to marginal cost
- Social welfare (sum of consumers and producers surpluses) is maximized
No competition : the monopoly

- Higher prices than under perfect competition
  - Price chosen by monopolist to maximize profit
  - Monopolist can price above marginal cost without loosing its clients
- Lower output than under perfect competition
  - Since price is higher, demand is lower!
  - Some potential customer are priced out of the market
- Insufficient incentives to lower costs and innovate
  - Unless there is a strong “potential” competition

Monopoly pricing
Monopoly pricing

Imperfect competition

- Closer to reality
- Often the number of firms on a market is small
  - Oligopoly (a few firms)
  - Each firm has some price fixing power
  - Firms engage in strategic behaviors and interactions with each others
- It can lead to higher prices on the market or on the contrary to predatory pricing
  - To drive competitor(s) out of the market
Imperfect competition better than no competition?

- In the short run better some competition than none
  - lower costs, lower prices, more choice
- In the long run problems of dynamics
  - destructive competition can lead to no competition at all
  - markets tend to concentrate
- Finally the problem is to maintain some competition
  - possibility of regulating the markets to some amount

Competition in the airline industry: broad features

- The airline industry is an oligopoly
  - Potential problems as in all oligopolistic markets
- It has a complex competition structure
  - What is a market?
  - Different types of airlines
  - Different levels of competition depending on markets
- It has been largely deregulated
  - Free competition on several markets
Plan of presentation

- Introduction: what can economic theory tell us?
- I- History of competition: regulation and deregulation of the air transport markets
  - 1- the regulated period
  - 2- the deregulation years
  - 3- an evolving situation
- II- The characteristics of competition in the air transport industry
- III- The competing actors
- IV- Conclusion: future of competition and the role of the Authorities
Part I - History of competition

Economic regulation of the air transport market: the conditions of competition

1 - The regulated period
   - 1-1 Why was the industry regulated?
   - 1-2 International traffic
   - 1-3 The domestic US market

2 - The deregulation years
   - 2-1 The US deregulation
   - 2-2 International traffic
   - 2-3 The European single market

3 - An evolving situation
1- The regulated period: a historically regulated industry

- Domestic traffic in the USA regulated until 1978
- European “Domestic” traffic liberalized between 1987 and 1997
- International traffic still regulated by bilateral agreements between countries
  - limited competition: some freedom in prices and frequencies but limitations in numbers of airlines
- In most cases regulation meant practically no competition

1-1 Why was the industry regulated?

- Different reasons for international and domestic traffic
- International traffic:
  - Geopolitical reasons (context of international tensions)
  - Protection of national airlines and national economies
- Domestic traffic:
  - Economic justifications
- For both: safety preoccupations
Economic justifications

- Context: a new and fragile industry
  - beginning of commercial airlines (1920)
  - many bankruptcies (great depression 1929)
  - subventions given to many airlines
- Market failures in the air transport industry
  - increasing returns to scale and natural monopoly
  - imperfect and destructive competition
- Development of global national networks
  - system of cross subsidies

Returns to scale (1): size matters

- There are increasing returns to scale in an industry if the average production costs (or unit costs) decrease when production increases
- In other words:
  - “bigger is better”, or “size matters”
**Returns to scale (2)**

![Graph showing average cost, critical Q, increasing returns to scale, and decreasing returns to scale.]

- Average cost
- Critical Q
- Increasing returns to scale
- Decreasing returns to scale

**Returns to scale (3)**

- Most “young” industries are in the first part of the curve

![Graph showing average cost, critical Q, and air transport before WW2.]

- Air transport before WW2
- Critical Q
- Production
Natural monopoly

- An industry where firms have increasing returns to scale is called a natural monopoly
  - larger firms absorb smaller ones or lead them to bankruptcy
  - at the end of this process, there remains one large firm in monopoly situation
- At the beginnings of air transport the airline industry was seen as a natural monopoly
  - Strong justification for regulation

Imperfect competition

- Even if not a natural monopoly, air transport is clearly not a perfectly competitive industry
  - not a large number of price-taking airlines
- Properties of perfectly competitive markets do not apply to air transport
  - in particular, prices set to marginal costs, and market efficiency
  - oligopolistic competition: strategic games between airlines, leading potentially to destructive outcome
- Today it does not lead to regulation automatically
Global networks and cross subsidies

- In a global network, some routes are more profitable than others
- One means of developing such a global network is to use cross-subsidies:
  - use profits from profitable routes to subsidize non-profitable ones
  - possible only if there is no price competition on routes, when airline is in monopoly situation on the network or when prices are regulated
- Is regulation the best way to build a global network

1-2 International traffic

- 1918-1939: the era of absolute national sovereignty
- 1944-1978: the era of regulation: the Chicago-Bermudas organization
- 1978 ...: gradual liberalization of international relations
The era of absolute national sovereignty (1918 – 1939)

- Paris conference in 1919: principle of national sovereignty
  - airspace above a country belongs to that country
- International relations based on reciprocity
  - much haggling (commercial bargaining)
  - much distrust and political considerations
  - little efficiency
- System not favorable to the development of international trade

The era of regulation: 1939-1978

- The Chicago conference (November 1944)
  - Creation of ICAO
  - Definition of air freedoms
  - Framework of bilateral agreements
- The IATA organization and the price fixing conferences
  - International air transport association created in 1945
- The bilateral agreements:
  - The UK-US agreement “Bermuda” in 1946
  - How it worked until 1978
The Chicago conference: conflicting positions

- The USA proposes a bilateral framework for negotiations
  - in a liberal context (prices, frequencies…)
- The UK proposes a world authority to allocate traffic rights and manage all regulations
  - economic regulation (prices, frequencies…)
  - other areas (security, standards…)
- The choice is of a bilateral framework
  - with possibilities of regulating prices and capacities

The results of the Chicago conference

- Creation of ICAO
  - world authority, establishing standards in terms of transport, security, air traffic control…
  - no powers of economic regulation
- Definition of “freedoms of the air”
  - “exhaustive” list of what kind of routes an airline can do
  - definition of 5 “freedoms”
- Framework of bilateral agreements
The technical freedoms

- First freedom: right to fly over a territory
  - The British carrier BA overflies France
- Second freedom: right to make technical stops in a foreign country
  - BA stops in France without taking passengers

The commercial air freedoms

- 3rd freedom: right to disembark passengers in a foreign country when coming from home state
- 4th freedom: right to embark passengers in a foreign country and take them to home country
  - Air China flying from Beijing to Tokyo (3rd), and taking passengers in Tokyo back to China (4th)
The commercial air freedoms

- 5th freedom: Continue service of 3rd or 4th freedom to third country.
  - Air China flying from Beijing to Tokyo and then on to Los Angeles and taking passengers in Tokyo

The additional freedoms

- 6th freedom*: combine 3rd and 4th freedom rights, to open a service between two foreign countries
  - Example: Air China flying from Paris to Tokyo through Beijing
The additional freedoms

- 7th freedom: 5th freedom without restrictions
  - Air China flying from Japan to the USA

- 8th and 9th freedom:
  - Cabotage with or without restrictions: right to fly inside a foreign country
    - British Airways flies inside France
    - Air China flies inside Japan
The Agreements

- The Transit Agreement: 97 countries over 159 in Chicago, agree to sign this agreement to exchange technical freedoms. Many signed later on.

- The Transport Agreement: a second agreement was proposed in Chicago, to exchange commercial freedoms. It was however not signed, and never came into effect.

Framework of bilateral agreements

- Routes opened between countries or points of entry
  - different outcome!
- Freedom exchanged (3-4-5)
- Designated carrier(s) for each country
  - carriers designated by name
- Capacities (fixed or not)
  - 50/50 if fixed
- Pricing rules
**IATA : International Air Transport Association**

- Created in 1945 as an association of airlines
- Role of IATA:
  - Organize price fixing conferences
  - Organize cooperation between airlines: interlining, pooling agreements.
- Counter-power to the governments
- Today most major airlines and others…
  - 274 members worldwide (April 2003); 89 in Europe

**IATA members : North America**

- Air Canada
- Alaska Airlines Inc.
- Aloha Airlines Inc.
- America West Airlines Inc.
- American Airlines Inc.
- Atlas Air, Inc.
- Continental Airlines, Inc.
- Delta Air Lines Inc
- FedEx
- Forward Air Int.
- Kitty Hawk Air Cargo, Inc.
- Laker Airways
- Northwest Airlines, Inc
- United Airlines, Inc.
- UPS
- US Airways, Inc.
**The bilateral agreements**

- First agreement signed between the US and the UK in 1946
  - The Bermuda I agreement
- How it worked until 1978: principle of reciprocity
  - conflict about entry points and fifth freedom
  - mono-designation
  - equal share of capacity
  - very restrictive rule until 1978: double approval rule
- No competition on international routes!

---

**1-3 The domestic US market**

- 1925 - 1938: Beginnings of commercial aviation with the Air mail Act
- 1938-1978: The era of regulation under the Civil Aeronautics Board
- 1978 ...: liberalization of domestic aviation with the “Airline Deregulation Act”
The beginnings : 1925 - 1938

- Air Mail Act signed in 1925
  - Postal service entrusted to private carriers
  - Generous contracts from federal government: efforts to develop postal air services
- Important development of air transport even for passengers
  - In 1926, 13 airlines, 2 millions of RPKs
  - In 1930, 38 airlines, 137 millions of RPKs

1934 - 1938: Crisis years

- In 1934 federal subsidies are questioned and contracts cancelled
  - The Post Office Department (POD) and the airlines are under suspicion of “complicity”
  - The POD is accused of protecting the airlines
- The system is not economically sound
  - Airlines use subsidies for mail to transport passengers
  - Prices are linked to costs neither for post nor for passengers
  - Bankruptcies and incidents are multiplying
1938: A global regulation (1)

- **Aim:**
  - promote development of air transport: air transport seems particularly promising in a large territory like the USA
  - protect the industry from bankruptcy and the public against abusive prices

- **Tool:** government agency regulating the market
  - as exists in other transport industries (railroads, 1887, roads: “motor carrier act” 1935)
  - In the USA public services regulation began with transport modes

1938: A global regulation (2)

- **Why use regulation of the market?**
  - there seems to be economies of scales: no competition possible
  - Fragile industry: protection from destructive competition
  - the objective is to develop a small number of large airlines and a global US network covering as many cities as possible

- **How to do it:**
  - by protecting airlines from competition,
  - by subsidizing them
  - by promoting cross subsidies
1938: The civil Aeronautics Act

- Creation of CAB: Civil Aeronautics Board
  - Federal agency (at first Civil Aeronautics Authority)
- CAB regulates all economic aspects of air transport
  - Entry on the market: certification of trunks, locals
  - Traffic rights on each route
  - Tariffs
  - Agreements and mergers between airlines
  - Subsidies for small routes
- After 1940, the CAB regulates also safety aspects

The policies of CAB (1)

- Allow very little or no entry on the markets
  - by certification of airlines: certification of trunk airlines in 1938 (19 trunks), no certifications of trunks thereafter. Certification of local airlines (23 locals) in 1940
- Allow little or no competition on routes
  - by restricting routes to one or two airlines (depending on traffic)
  - by forbidding price competition: CAB regulates prices
  - but no control over frequencies or capacities
The policies of CAB (2)

- Regulates mergers
  - prevents bankruptcies by allowing some mergers
  - try to prevent monopolization of markets by preventing others
- Subsidizes small routes
  - in 1938 subsidies are one third of revenues for airlines
  - later CAB encourages cross-subsidies (by authorizing high prices on profitable routes) : after 1959 no subsidies for trunks
  - until 1978 still some subsidies for small routes

The effects of regulation: the US air transport system

- Important development of traffic
  - x 300 between 1938 and 1978
- Services to medium sized markets
  - Thanks to CAB subsidies and cross subsidies
  - the longest routes subsidize the shortest in the sixties (CAB study)
- Development of large (profitable) airlines
  - 11 trunks in 1978 dealing with all continental traffic, 13 locals, many smaller airlines (the commuters)
- Safe activity
The effects of regulation: the perverse effects

- No price competition, but frequency competition
  - too many flights, bad load factors (50% in 1976)
  - high costs (flying empty costs the same as flying full!)
  - high tariffs (airlines asked CAB for higher prices)
- Airlines are too well protected:
  - no incentives to reduce costs: at the end of the seventies, the trunks are called “the dinosaurs”
- The public is faced with too high prices
  - air transport still largely reserved to business travelers

Part I - History of competition

1 - The regulated period
   - 1-1 Why was the industry regulated?
   - 1-2 International traffic
   - 1-3 The domestic US market
2 - The deregulation years
   - 2-1 The US deregulation
   - 2-2 International traffic
   - 2-3 The European single market
3 - An evolving situation
2 - The deregulation years: from 1978 until today

- Domestic traffic in the USA deregulated in 1978
- International agreements evolve towards more competition since 1978 between the USA and the rest of the world
  - gradually more price freedom since 1978
  - new “open skies” agreements proposed since 1992
- European “Domestic” traffic liberalized between 1987 and 1997
  - a largely free European market

2-1 The US deregulation

- Context and objectives
- The Airline Deregulation Act
- What happened?
  - Market structure
  - Networks
  - Prices
  - Airlines
- The results
The US deregulation: the context

- **Politic context**
  - Liberal policies: The motto is “Markets do better than the government”
  - Many deregulations to come in all sectors of the economy (the Reagan era: 1980-1988)

- **Economic context**
  - Profitable industry (very few subsidized routes)
  - Large (and inefficient) airlines
  - Potential oligopolistic competition
  - Skepticism about economies of scales: size does not matter! (from the point of view of costs)

---

Returns to scale (again)

![Graph showing average cost, critical Q, and production with increasing and decreasing returns to scale](image_url)
The objectives of the US deregulation

- The first step is to introduce more competition by deregulating
- Competitive pressure will then give airlines incentives to lower their costs
- More competition and lower costs should result in lower prices and better services
- Lower prices will then lead to a faster development of traffic and a higher social welfare
  - more people will have access to air transport

The Airline Deregulation Act (Oct. 1978)

- After a short transitory period, the market become «free» for all airlines (old and new) to access and serve
- Access to the market
- Traffic rights (after 3 years)
- Prices (after 4 years)
- Mergers and agreements ruled by the Department of Justice (DOJ)
- Subsidies allocated by auctions (Essential Air Services)
What happened?

- Difficult to really know the pure effects of deregulation!
  - The industry would also have evolved without deregulation
  - It is very sensitive to the economic environment

- Short term and long term effects on:
  - The structure of the market
  - Networks: development of the hub and spoke system
  - Prices
  - Airlines

The structure of the market: 1978 - 1983

- The first post deregulation period is one of intense competition
  - New airlines are created (about 120)
  - Existing small airlines (commuters) enter the nationwide market (about 80)

- Severe competition between new and old airlines
  - Price competition (price wars)
  - Aggravated by the 1981 crisis of overcapacity (oil shock)
  - In 1983 bankruptcy of Branif, ending this period
The structure of the market: 1983 - 2007

- Progressive concentration of the market
  - Bankruptcies and mergers, few new entrants
- Development of « mega carriers » with an extensive network, owning smaller subsidiaries
  - The large 1978 airlines have either disappeared (Pan Am, TWA, Eastern Airlines, Branif…)
  - Or they have turned into « mega carriers » (American Airlines, United, Delta, Continental)
- A new model of airline has been developing: the low-cost airline (following Southwest)

The US majors: from 1978 to 1998

<table>
<thead>
<tr>
<th>1978</th>
<th>Trunks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airline</td>
<td>Market Share</td>
</tr>
<tr>
<td>United</td>
<td>21,9%</td>
</tr>
<tr>
<td>American</td>
<td>13,6%</td>
</tr>
<tr>
<td>Eastern</td>
<td>12,2%</td>
</tr>
<tr>
<td>Delta</td>
<td>11,0%</td>
</tr>
<tr>
<td>TWA</td>
<td>9,6%</td>
</tr>
<tr>
<td>Western A.L.</td>
<td>5,2%</td>
</tr>
<tr>
<td>Continental</td>
<td>4,6%</td>
</tr>
<tr>
<td>Braniff</td>
<td>3,9%</td>
</tr>
<tr>
<td>National</td>
<td>3,6%</td>
</tr>
<tr>
<td>Northwest</td>
<td>2,7%</td>
</tr>
<tr>
<td>Pan Am</td>
<td>1,2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>89,4%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1998</th>
<th>Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airline</td>
<td>Market Share</td>
</tr>
<tr>
<td>Delta</td>
<td>17,1%</td>
</tr>
<tr>
<td>United</td>
<td>17,0%</td>
</tr>
<tr>
<td>American</td>
<td>16,1%</td>
</tr>
<tr>
<td>Northwest</td>
<td>8,2%</td>
</tr>
<tr>
<td>USAir</td>
<td>7,9%</td>
</tr>
<tr>
<td>Continental</td>
<td>7,8%</td>
</tr>
<tr>
<td>Southwest</td>
<td>6,8%</td>
</tr>
<tr>
<td>TWA</td>
<td>4,3%</td>
</tr>
<tr>
<td>America West</td>
<td>3,4%</td>
</tr>
<tr>
<td>Alaska</td>
<td>2,2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91,0%</strong></td>
</tr>
</tbody>
</table>
Domestic market shares (RPKs): from 1978 to 2003

- 11 Trunks (89.4%*)
- 13 Locals (10.1%)
- Commuters (0.5%)
- 9 majors (+3 all freight airlines) (~91%)
- 30 nationals (~9%)
- Regionals (~0.5%)  

1978

The US market in 2007

- From the post deregulation new actors, only 2 large remain (Southwest, US Air)
- Several mega-carriers are in difficulty
- The market is more concentrated than in 1978
  - More concentration can be foreseen since the largest airlines are in difficulty (Northwest+Delta ?)
- The low-cost market is a dynamic and profitable «niche»
**Networks: the hub and spoke system**

- Looking at the European airlines, the US airlines invent the hub and spoke network:
  - Network centered on a main airport: the hub,
  - With routes (nearly) all going to and from the hub
  - Their contribution is to add the idea of optimizing the connection times (banks of arrivals and departures)
- They choose hubs in un-congested airports, in large cities (Denver, Atlanta, Dallas…)
- All large airlines choose this type of network and abandon the point to point network

---

**Hubs in practice**

(Continental 2005)
The effects of deregulation on prices

- Old price structure:
  - 2 prices + 2 discount prices
  - prices based on distance: \( p = a \times \text{distance} + b \)

- New prices:
  - several discount prices with restrictions
  - prices based on competition and revenue optimizing (development of revenue management)
  - price wars
**Have prices gone down?**

- Several conflicting effects:
  - A sure decrease in prices on average
    - A study (G. William) concludes that prices are 15% lower today than they would have been without deregulation
  - but differences due to competition level
    - Other studies (GAO) show that prices are higher (+30%) on non competitive routes

### Average ticket price (1992 dollars)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>381.7</td>
<td>222.2</td>
<td>222.6</td>
<td>218.7</td>
<td>192.8</td>
<td>127.4</td>
<td>112.6</td>
<td>87.1</td>
<td>88.6</td>
<td>88.0</td>
</tr>
</tbody>
</table>

Bureau of Transportation Statistics, 1999

---

**Evolution of prices on the US market**

![Graph showing the evolution of prices on the US market from 1960 to 1995.](image-url)
The effects of deregulation on airlines

- Restructuring of existing airlines
  - costs reductions
  - productivity increases
  - fleet restructuring (hubs !)
- Development of new management and commercial tools:
  - Computerized reservation systems (CRS)
  - Frequent Flyers Programs (FFP)
  - Revenue (or Yield) management
- New concept of airline: the low-cost airline

The results: nearly 30 years later

- Important increase of traffic
  - larger access to air transport
  - better services, lower prices
  - with the negative effect of congestion
- No safety problems
- Concentration of the market
  - unexpected result
  - oligopolies, or monopolies ?
- But competition from “low cost” airlines
2-2 Deregulation of International traffic

- Trend initiated by the USA
  - liberal context
  - “bad” re-negotiation of the Bermuda agreement (Bermuda II, 1977)
  - domestic deregulation in 1978
- The USA will try to impose more competition between airlines in all their bilateral agreements
  - they think that competition is better for everybody
  - but especially for the US airlines

Re-negotiation of bilateral agreements 1978 -1985

- Agreement in 1978 between The USA and the Netherlands
  - Double disapproval rule : free prices (or nearly free)
  - In exchange for the Netherlands cooperation : 2 new entry points in the USA for KLM
- The result is diversion of European traffic towards the Netherlands
  - The other European countries are obliged to renegotiate (1978 -1985)
  - Same strategy in the Pacific area (with Singapore)
The traffic diversion of 1978

USA

The effects of the first steps of liberalization

- Traffic growth: x3 between France and the USA between 1982 and 1994!
  - Falls in prices
- Disappearance of charter traffic on the North Atlantic routes
- The US airlines increase their traffic shares on some markets (France, Germany, …) but lose on others
  - Overall the market is divided rather equally
- Price wars
The North Atlantic market 1982-1993

<table>
<thead>
<tr>
<th>Compagnies</th>
<th>1993</th>
<th>1982</th>
<th>% croissance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US</td>
<td>Europe</td>
<td>US</td>
</tr>
<tr>
<td>USA/FRANCE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passagers (000)</td>
<td>2 419,6</td>
<td>1 176,9</td>
<td>675,9</td>
</tr>
<tr>
<td>Part de marché</td>
<td>67,3%</td>
<td>32,7%</td>
<td>50,4%</td>
</tr>
<tr>
<td>USA/ROYAUME-UNI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passagers (000)</td>
<td>4 995,2</td>
<td>6 563,8</td>
<td>3 090,6</td>
</tr>
<tr>
<td>Part de marché</td>
<td>43,2%</td>
<td>56,8%</td>
<td>58,3%</td>
</tr>
<tr>
<td>USA/ALLEMAGNE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passagers (000)</td>
<td>3 289,7</td>
<td>2 369,1</td>
<td>1 103,2</td>
</tr>
<tr>
<td>Part de marché</td>
<td>58,1%</td>
<td>41,9%</td>
<td>47,2%</td>
</tr>
<tr>
<td>USA/TOTAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passagers (000)</td>
<td>14 519,27</td>
<td>16 867,6</td>
<td>6 815,9</td>
</tr>
<tr>
<td>Part de marché</td>
<td>46,3%</td>
<td>53,7%</td>
<td>45,1%</td>
</tr>
</tbody>
</table>

1991, a difficult year

- The Gulf war, and its effects on air transport:
  - higher fuel prices,
  - economic slowdown,
  - reductions in demand

- Over-capacity on the markets
  - Aircraft deliveries
  - Arrival of American, United and Delta in the main European airports
  - Leading to new price wars on the North Atlantic

- The USA want to review their bilateral agreements
1992, the “open skies” agreements

- The USA want more competition on the markets
  - no limits on capacity
  - no restrictions on price
  - more 5th freedom rights
- They need to give something in exchange
  - entry points!
- New type of agreement “proposed” by the USA
  - same strategy as in 1978 to impose their view
  - first country to sign agreement: the Netherlands in 1992

Structure of an “open skies” agreements

- No restrictions on frequencies and capacities
- Permission to operate between all points of both countries without restrictions
- No restrictions on price
- All possible 5th freedom rights are automatically granted
- Possibility of signing code sharing agreements with US airlines
  - a compensation for the absence of cabotage rights in the USA
**Open skies today**

- Most European countries have signed with the USA
  - Except UK (Bermuda II)
  - but the agreements are challenged (see part II-3 on Europe)
  - New “super” open skies to come (march 2008 with Europe)
- Many Asian countries have signed
  - In some cases US airlines have more traffic rights in Asia than Asian Airlines ! (fifth freedom rights)

---

**2-3 The European single market**

- Europe before liberalization
- Steps of European liberalization
- Consequences of liberalization
Europe before liberalization

- Until the mid 80th, international traffic is ruled by (non liberalized) bilateral agreements
  - no competition: the aim is to protect the national airlines
- The canvas:
  - one airline for each country
  - capacity is shared equally (and revenues can be shared)
  - prices are fixed by IATA
  - double approval rule

The steps of the European liberalization

- 1957: Treaty of Rome
- 1986: Single European Act
- 1987: first package of European liberalization
- 1990: second package of European liberalization
- 1992: third package of European liberalization
- April 1997: end of transitory period, full effects of liberalization laws
1957 : Treaty of Rome

- Creates the European Economic Community
  - ...to promote...a harmonious and balanced development of economic activities... the raising of the standard of living and quality of life...
- The means (among others):
  - the abolition of obstacles to the free movement of goods, persons, services and capital
  - a common policy in the sphere of transport
  - a system ensuring that competition in the common market is not distorted

The first steps

- 1983 : inter-regional air services liberalized
- 1986 : single European Act
  - creation of the single European market (01/01/1993)
  - decision to include air transport in the common market
- 1986 : the “Nouvelles Frontières” ruling
  - decision of the European court of justice in favor of “Nouvelles Frontières”
  - The European commission encourages competition
The first package (1987)

- Extension of 1983 law on regional services
- Prices: 2 pricing areas
  - reduced prices: between 65 and 90% of full fare
  - very reduced price: between 45 and 65% of full fare
- Routes: Multi-designation on routes of more than 250,000 passengers
- Capacity shares: from 50/50 to 60/40
- Limited 5th freedom rights
  - with restrictions: one airport is not a first category airport

The second package (1990)

- Final extension of 1983 law
  - all 3rd and 4th freedom right liberalized
- Prices: 2 pricing areas
  - reduced prices: between 80 and 94% of full fare
  - very reduced price: between 30 and 79% of full fare
- Routes: Multi-designation on routes of more than 140,000 passengers
- Capacity shares: from 60/40 to 25/75
- More 5th freedom rights and limited cabotage rights
The third package (1992)

- Free prices (01/01/1996)
- Capacity shares: no limitations
- 5th and 7th freedom rights liberalized (01/01/1995)
- Cabotage liberalized (01/04/1997)
- Free access to the market for all airlines from the community
  ➢ new legal concept

Consequences of liberalization: International traffic

- International traffic inside Europe liberalized for European airlines
  ➢ New routes opened, new airlines operating them
- International traffic with the rest of the world not impacted much so far
  ➢ Because of bilateral between individual countries
- But it is going to evolve:
  ➢ In the future the European commission will negotiate new “bilaterals” for all of Europe with the rest of the world
**International traffic: the case of US-EU negotiations**

- Negotiations have been going on since June 2003
  - Several conflicting points
  - Agreement reached in March 2007: new agreement to come into force in March 2008
- Three problems to address:
  - European Airlines have international access only from their home country
  - US airlines can only be owned by foreigners up to 25% (49.9% for European airlines)
  - No access to the US market for European airlines (US airlines do have a large access to the European market!)

**Consequences of liberalization: the airlines**

- Restructuring of major European airlines
  - Privatization of most public national airlines (except ailing ones)
  - Costs reductions, search for efficiency
  - More cross-border restructuring to come...due to new bilaterals
- New entrants: the low-cost
  - Following the model designed by Southwest
  - Main ones are: Ryanair, Easyjet
  - Low-cost, low fares
Consequences of liberalization: 
infrastructures

- Old and new hubs
  - large hubs have been re-organized: planning of flights more efficient in order to minimize connection time
  - new hubs are appearing: medium size hubs mostly

- Traffic increase and smaller planes
  - pressure on airports and airspace
  - problem of the slot allocation on major airports: barrier to entry for competitors

Consequences of liberalization: 
the passenger

- More frequencies and more destinations
  - consequence of the increase in traffic
  - and of the shuttle system
  - and of the new organization of hubs

- Lowered fares
  - more competition on domestic routes
  - but most international routes are still operated by only 2 carriers
  - Fares difficult to measure (lack of statistics)
Part I - History of competition

1 - The regulated period
   1-1 Why was the industry regulated?
   1-2 International traffic
   1-3 The domestic US market

2 - The deregulation years
   2-1 The US deregulation
   2-2 International traffic
   2-3 The European single market

3 - An evolving situation

3 - An evolving situation today

- More and more competitive markets
  - Inside deregulated areas (US market, Europe)
  - Between those areas: North Atlantic market, US-Pacific market

- At odds with an old regulatory structure which limits airlines freedom
  - The bilateral system still holds
  - Ownership restrictions: system of national airlines in a world of multinational companies because of bilateral agreements
The “old” bilateral system

- Prevents airlines from restructuring over borders, for fear of losing traffic rights
  - Maintains small, unprofitable “national” airlines (Europe, Asia)
- Leads them to an alliance policy, inadequate substitute to restructuring
  - Is questioned by IATA and ICAO
  - Evolutions in the years to come

Probable evolution of bilaterals

- The ownership clause could be replaced by an activity clause
  - An airline having its operations in one country (airport base, employees, management) instead of having its capital owned by nationals, would be considered as a “national airline” in bilateral agreements
  - This airline would be controlled by the country’s authorities (to prevent flags of convenience)
- This would enable cross border restructuring
  - And maintain high level of control (safety, finances…)
Summary of findings

- The desirability of competition has been long questioned in the air transport industry
  - long regulated period
- Nowadays competition exists but is still constrained on international markets
- It may evolve in the years to come towards more freedom of competition
  - Especially if bilateral system evolves

Plan of presentation

- Introduction: what can economic theory tell us?
- I- History of competition: regulation and deregulation of the air transport markets
- II- The characteristics of competition in the air transport industry
  - Networks
  - Anti-competitive practices
- III- The competing actors
- IV- Conclusion: future of competition and the role of the Authorities
II - The characteristics of competition in the air transport industry

1 Networks: the backbone of the air transport competition conditions

- 1-1 Characteristics of networks: point to point network, the hub, examples of hubs
- 1-2 Hubs and competition: the hub specific type of competition, the matter of network size, anti-competitive effects, hubs and congestion, hubs and prices

- 2 Anti-competitive practices
- 3 Summary of findings
1-1 Characteristics of air transport networks

- Air transport networks are unusual:
  - In most network industries, there are high fixed network costs and a fixed network.
  - In air transport networks are “easily” changed and do not imply high costs: they can adapt to demand or to competition.
- There are two main models:
  - Point to point network: an old model, but with new adepts.
  - Hub network: the nearly universal standard today.

Networks: hubs versus point to point

Point to point network:
- 5 cities: 10 routes \( n(n-1)/2 \)

Hub and spoke network:
- 5 cities: 4 routes \( n-1 \)
The point to point network

- Theoretically a network linking every city by a route to every other
  - Does not exist
- In practice, any network not centered on a center airport
  - The historic network during regulated years in the USA
  - Nowadays hard to find!
- Only low-cost airlines like southwest have a network close to a point to point network

---

The Hub network

- HUB
- SPOKE
The “Hub and spokes” network

- The predominant type of network these days
  - Historic network for European airlines
  - Adopted (and perfected) by the US airlines after deregulation
- Hub networks have many advantages
  - For hub airlines and their passengers
- But also drawbacks
  - For competitors, for airports
- The main adverse effects of the hubs are linked to competition!
The “Hub and spokes” network

The virtuous circle of the hub system

- Airlines serve routes with less planes, and with bigger planes
- Bigger planes means lower costs per passenger
- With lower prices more passengers come
- More passengers mean bigger planes, more frequencies and new routes
- Bigger planes mean lower costs…
- As a result : access for the average American to air transport!
Advantages of the hub network

- For hub airlines:
  - More destinations with less flights
  - Larger planes, lower costs, more demand
  - More control at the main airport (the hub)

- For passengers
  - More destinations, more frequencies
  - Lower prices (globally)
  - Shorter connections

- For hub airports
  - More business

Drawbacks of hubs

- For other airlines
  - Difficulty of access to hub airports

- For hub airports
  - Congestion
  - Dependence on main hub airline

- For hub airlines:
  - Cost of capacity
  - Management of connections

- For passengers
  - Less direct flights
**Example of hub : AA hubs**

**American Airlines/American Eagle Dallas/Fort Worth Hub**  
(As of March 2003)

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Dallas/Fort Worth International Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA Hub Established</td>
<td>1981</td>
</tr>
<tr>
<td>Eagle Hub Established</td>
<td>1984</td>
</tr>
<tr>
<td>Terminal Location</td>
<td>Terminals A, B, C</td>
</tr>
<tr>
<td>Terminal Size</td>
<td>3,756,311 square feet</td>
</tr>
<tr>
<td>Principal Traffic Flow</td>
<td>East/West/OMNI</td>
</tr>
<tr>
<td>Number of Gates</td>
<td>64 (plus 3 Eagle, and 8 Eagle boarding door)</td>
</tr>
<tr>
<td>Daily AA Jet Departures</td>
<td>471</td>
</tr>
<tr>
<td>Daily American Eagle Departures</td>
<td>229</td>
</tr>
<tr>
<td>AA Nonstop Cities Served</td>
<td>107</td>
</tr>
<tr>
<td>Eagle Nonstop Cities Served</td>
<td>37</td>
</tr>
<tr>
<td>International Routes</td>
<td>25</td>
</tr>
</tbody>
</table>

**Connecting City-Pair Combinations**: Over 3,000 in peak connecting complex.

---

**Example of hub : AA hubs**  
*(2003)*

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Chicago O'Hare International Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA Hub Established</td>
<td>1982</td>
</tr>
<tr>
<td>Eagle Hub Established</td>
<td>1985</td>
</tr>
<tr>
<td>Terminal Location</td>
<td>Terminal 3 – Concourses G, H, K, L</td>
</tr>
<tr>
<td>Terminal Size</td>
<td>1.2 million square feet (688,000 leased by AA)</td>
</tr>
<tr>
<td>Principal Traffic Flow</td>
<td>East/West/Europe/Japan</td>
</tr>
<tr>
<td>Number of Gates</td>
<td>69 (26 American Eagle)</td>
</tr>
<tr>
<td>Daily AA Jet Departures</td>
<td>286</td>
</tr>
<tr>
<td>Daily American Eagle Departures</td>
<td>183</td>
</tr>
<tr>
<td>AA Nonstop Cities Served</td>
<td>57</td>
</tr>
<tr>
<td>Eagle Nonstop Cities Served</td>
<td>24</td>
</tr>
<tr>
<td>International Routes</td>
<td>11</td>
</tr>
</tbody>
</table>

**A total of 469 flights**
Example of hub: Air France hub at CDG Airport (source Air France)

750 flights per day

14,936 connecting flight opportunities weekly each way

76,600 passengers per day on average (arrivals and departures)

21,000 passengers with connecting flights

27,000 items of connecting baggage

7,400 agents with complementary responsibilities

Air France Hub: Weekly connecting flights (less than 2 hours)

Source: Air France, 2002

AFR = Air France / CDG
DLH = Lufthansa / Francfort
KLM = KLM / Amsterdam
BAW = British Airways / Londres-Heathrow
**Air France Hub: daily passengers and connecting passengers**

- 55,600 passengers (connecting passengers are counted once):
- 21,000 connecting passengers, 38% of the total number of passengers of Air France at CDG, 58% of passengers on arriving flights
- 6 connection banks everyday

**Air France Hub: Connection banks**

- **Short and medium haul arrivals**
- **Long haul arrivals**
- **Short and medium haul departures**
- **Long haul departures**

**Source:** Air France, 2002

Nathalie Lenoir Septembre 2007
1-2 Hubs and competition

- The hub network creates a very specific type of competition
  - Competition between hub airlines has to be understood as a competition between hub networks
- The hub creates some perverse effects in terms of competition
  - “fortress” effect
  - Congestion
- The result is higher fares

The hub-specific type of competition

Diagram showing a hub network with routes from City A to City B through Hub 1 and Hub 2, with direct route(s) indicated.
Competition between networks: where we learn that size matters

- An extended network gives an advantage over competitors
  - the goal is to attract passengers wherever they want to go through connections at the hub

- As a result, size and coverage of network matters!
  - Airlines have understood that the more destinations, the more passengers, and the more market share!
  - Bigger size (of network) does not necessarily mean less unit costs (no economies of scale) but more revenues!
  - Airlines are trying to obtain a global world coverage through alliances between hub airlines (see part III)
Competition between networks: where we learn that size matters!

- An extended network gives an advantage over competitors
- As a result, size and coverage of network matters!
- As a consequence, in order to understand and analyze competition:
  - Looking at competition at the airport or at the route level is not sufficient (but still informative and useful)
  - We need to define the concept of origin-destination: what matters is the competition (whatever the route taken) between origin cities and destination cities

The hub-specific type of competition

Spoke-Spoke markets are competitive!
Perverse effects of the hub system

- The hubs have anti-competitive effects:
  - The fortress effects: dominant airlines make entry difficult for competitors
- The hub networks create its own congestion
  - The more routes you have, the more congestion
  - Limitations to competition: problematic access to airports
  - (Pressure on costs for airports and airlines due to the need to over-invest)
- Fortress effect and congestion create market power on routes to and from hubs

Why is there less competition at hubs: the fortress effect

- Major airlines have tried to prevent entry at their hubs (and succeeded!)
  - by using all airport capacity: no room for others
    - On most hubs the dominant airline has more than 50% of traffic, and on some, more than 75%
  - by offering many flights on each route: entrants have to match capacity in order to succeed
    - The S shaped curve
  - by leasing gates on long term contracts
    - In 1990, on 66 largest US airports, 85% of gate were rented through exclusive contracts
The S curve

Control of gates
## Control of gates

<table>
<thead>
<tr>
<th>Airport</th>
<th>Total number of jet gates</th>
<th>Gates under exclusive-use leases</th>
<th>Major lease holder and date of lease expirations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charlotte</td>
<td>48</td>
<td>43</td>
<td>34 gates leased to USAir until 2007</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>67</td>
<td>67</td>
<td>50 gates leased to Delta with 9 leases expiring in 2015 and 41 expiring in 2023</td>
</tr>
<tr>
<td>Detroit</td>
<td>86</td>
<td>76</td>
<td>64 gates leased to Northwest until the end of 2008, with all but 10 under exclusive-use terms</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>65</td>
<td>65</td>
<td>49 gates leased to Northwest with 16 leases already having expired and now on month-to-month basis, and remainder expiring at various times ranging from the end of 1997 to 2015</td>
</tr>
<tr>
<td>Newark</td>
<td>94</td>
<td>79</td>
<td>43 gates leased to Continental until 2013, 36 gates leased to the other established airlines until 2018, and 15 gates reserved primarily for international use</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>75</td>
<td>66</td>
<td>50 gates leased to USAir until 2018</td>
</tr>
</tbody>
</table>

Source: GAO’s presentation of the airports’ data.

### Control of gates: results on prices

[Graph showing percentage of average fare higher than at other 33 airports]

Source: GAO’s analysis of DOT’s data.
**Result of fortress effect**

![Diagram depicting hubs and routes](image)

Spoke-Hub markets are much less competitive!

---

**Hubs and congestion**

- In the world, about 150 airports are constrained by capacity problems...
  - most are hubs
  - most major European airports are concerned
- ...and many others are congested
  - most important US airports face delays
- Several factors can explain capacity shortage
  - sheer lack of space (runways, but also gates)
  - but also concentration of flights during the day at hubs
**How to deal with lack of space**

- Different response in the US and in Europe
  - In Europe slots are defined in order to avoid delays
    - no (or few) delays but less landings and take-offs
  - In the USA, Airlines are supposed to coordinate their schedule in order to avoid delays
    - There are delays (sometimes huge ones) but all capacity is used
    - except on a few slot controlled airports (Chicago, New York, Washington National)

- Results in different situations

**The US congestion problem**

- Market is mostly self regulating through delays
  - everybody suffers from delays: passengers and airlines
  - huge amounts of money are lost every year
  - hub airlines suffer from bad image
  - Some are trying to “de-peak” their traffic

- Congestion is in itself a barrier to entry on US airports
  - access theoretically possible, but in fact no room for challengers except if they use secondary non congested airports (strategy of low-cost airlines)
**Peak traffic at hubs (US case)**

Hub airline arrival banks + other airlines traffic

Real Capacity

Delays

06h00 23h00

*Nb* : real capacity is not fixed : it depends on weather, traffic homogeneity...

---

**“De-peaking” traffic at hubs**

Hub airline arrival banks + other airlines traffic

No Delays...

(only works if one airline has large share of traffic !)

---
The European congestion problem

- On most major European airports, slots are allocated through historic rights
  - the “grandfather rights” system (once you get a slot, you keep it in the future, as long as you are effectively using it)
  - only non attributed slots (not many !) can be distributed to challengers
- No sufficient access possible for competitors on European main airports
  - non consistent with liberalization goal of promoting competition

Peak traffic at hubs (European case)

No Delays...
But under-utilization of capacity

Hub airline arrival banks + other airlines traffic

- Theoretical Capacity (always possible)
- Real Capacity
Congestion: two approaches, no solution

- Whether in Europe or in the US, no real solution
  - building infrastructures is one solution but is costly and increasingly difficult
  - it may be preferable to use secondary airports more
  - The European Commission wants to revise the slot attribution process, in order to allow more entry, but hub airlines need space, in order to set up an efficient operation
- Competition will remain limited on main hub airports in the years to come!

Hubs and market power

- Fortress effect and congestion are barriers to entry that create market power
  - definition
- Evidence of market power on routes to and from hubs
  - shown by higher prices
What is market power?

(a situation…) When one buyer or seller in a market has the ability to exert significant influence over the quantity of goods and services traded or the price at which they are sold. Market power does not exist when there is perfect competition, but it does when there is a monopoly, monopsony or oligopoly.

Definition from the Economist

Where do we see higher airfares?

- Competition between hubs on O-D markets
  - low fares
- Less or no competition on routes to and from hubs
  - higher fares (up to +30%!)
Competition on hubs: how to measure it?

- By definition a hub is a connecting platform
  - the degree of hubbing can be measured by the percentage of connecting traffic

- On major US hubs competition can be measured by concentration and fares:
  - concentration is high (fortress effect) as measured by the Herfindhal index
  - airfares are higher
The Herfindhal index

- A market concentration index, called Herfindahl index, can be computed*. It is equal to the sum of the square of market shares:
  \[ H = \sum_{i=1}^{n} \alpha_i^2 \]

- The higher the index (from 0 to 1), the more important the concentration on the market
  - ex: if two firms share the market 50/50, then \( H = 0.5 \)

*other measures exist

### Competition on hub airports

- Figures give evidence of market power on routes to and from hubs!
  - If herfindhal > 0.3 then price premium positive!
    - Except Houston Hobby (not a hub, southwest)
    - Except St Louis

### Table 3. Hubbing and Airport Concentration at the 30 Largest U.S. Airports

<table>
<thead>
<tr>
<th>Airport</th>
<th>Percent Changing Planes</th>
<th>Airport Herfindahl</th>
<th>Airport Fore Premium</th>
<th>Rank by Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charlotte</td>
<td>75.7%</td>
<td>0.579</td>
<td>18.8%</td>
<td>20</td>
</tr>
<tr>
<td>Atlanta</td>
<td>69.0%</td>
<td>0.347</td>
<td>17.2%</td>
<td>3</td>
</tr>
<tr>
<td>Memphis</td>
<td>67.7%</td>
<td>0.355</td>
<td>24.7%</td>
<td>29</td>
</tr>
<tr>
<td>Dallas/Ft. Worth</td>
<td>65.8%</td>
<td>0.529</td>
<td>15.9%</td>
<td>16</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>62.1%</td>
<td>0.386</td>
<td>8.5%</td>
<td>2</td>
</tr>
<tr>
<td>Salt Lake City</td>
<td>61.3%</td>
<td>0.520</td>
<td>19.1%</td>
<td>28</td>
</tr>
<tr>
<td>St. Louis</td>
<td>56.2%</td>
<td>0.354</td>
<td>4.0%</td>
<td>13</td>
</tr>
<tr>
<td>Chicago-O’Hare</td>
<td>55.7%</td>
<td>0.270</td>
<td>14.8%</td>
<td>1</td>
</tr>
<tr>
<td>Denver</td>
<td>54.1%</td>
<td>0.272</td>
<td>15.3%</td>
<td>7</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>51.0%</td>
<td>0.418</td>
<td>31.5%</td>
<td>15</td>
</tr>
<tr>
<td>Houston-Intercontinental</td>
<td>49.5%</td>
<td>0.543</td>
<td>15.6%</td>
<td>19</td>
</tr>
<tr>
<td>New York–Kennedy</td>
<td>47.3%</td>
<td>0.202</td>
<td>2.9%</td>
<td>6</td>
</tr>
<tr>
<td>Detroit</td>
<td>43.6%</td>
<td>0.296</td>
<td>0.7%</td>
<td>11</td>
</tr>
<tr>
<td>Baltimore</td>
<td>40.5%</td>
<td>0.299</td>
<td>9.1%</td>
<td>26</td>
</tr>
<tr>
<td>Phoenix</td>
<td>33.1%</td>
<td>0.205</td>
<td>-28.4%</td>
<td>9</td>
</tr>
<tr>
<td>Miami</td>
<td>31.0%</td>
<td>0.171</td>
<td>-14.3%</td>
<td>14</td>
</tr>
<tr>
<td>Seattle</td>
<td>27.3%</td>
<td>0.145</td>
<td>8.7%</td>
<td>24</td>
</tr>
<tr>
<td>San Francisco</td>
<td>25.3%</td>
<td>0.145</td>
<td>-1.5%</td>
<td>5</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>25.2%</td>
<td>0.110</td>
<td>-5.3%</td>
<td>4</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>24.9%</td>
<td>0.217</td>
<td>11.2%</td>
<td>22</td>
</tr>
<tr>
<td>Honolulu</td>
<td>22.4%</td>
<td>0.199</td>
<td>-20.8%</td>
<td>17</td>
</tr>
<tr>
<td>Newark</td>
<td>19.6%</td>
<td>0.292</td>
<td>11.5%</td>
<td>12</td>
</tr>
<tr>
<td>Las Vegas</td>
<td>18.9%</td>
<td>0.177</td>
<td>-27.8%</td>
<td>23</td>
</tr>
<tr>
<td>Houston-Hobby</td>
<td>17.3%</td>
<td>0.481</td>
<td>-23.4%</td>
<td>30</td>
</tr>
<tr>
<td>Orlando</td>
<td>16.8%</td>
<td>0.180</td>
<td>-15.6%</td>
<td>21</td>
</tr>
<tr>
<td>Boston</td>
<td>13.8%</td>
<td>0.120</td>
<td>9.0%</td>
<td>10</td>
</tr>
<tr>
<td>Washington D.C.–National</td>
<td>11.1%</td>
<td>0.125</td>
<td>10.7%</td>
<td>18</td>
</tr>
<tr>
<td>Tampa</td>
<td>11.0%</td>
<td>0.181</td>
<td>-12.4%</td>
<td>27</td>
</tr>
<tr>
<td>San Diego</td>
<td>6.6%</td>
<td>0.138</td>
<td>-18.1%</td>
<td>25</td>
</tr>
<tr>
<td>New York–La Guardia</td>
<td>6.2%</td>
<td>0.118</td>
<td>9.5%</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: U. S. D. O.T. Databank IA, second quarter, 1990
II - The characteristics of competition in the air transport industry

- 1 Networks: The backbone of the air transport competition conditions
- 2 Anti-competitive practices
  - Commissions to travel agents
  - Frequent flyer programs
  - Predatory pricing
- 3 Summary of findings

II - 2

2 Anti-competitive practices

- As in all oligopolistic markets, airlines try to limit competition
  - Direct competition is often costly
- They use legal means if they can
  - Means linked to hubs (see earlier)
  - Commissions to travel agents
  - Frequent flyer programs
- But they also engage in less legal practices
  - Predatory pricing/behavior
Legal practices to limit competition

- Commissions to travel agencies
  - Travel agencies get bonuses by an airline when selling more than a specified volume (TACOs: travel agents commission override).
  - As a result, small airlines tickets do not get well distributed.

- Frequent flyer programs
  - Gives incentives to passengers to use one airline (or one alliance of airlines) by rewarding him. Works well if network is spread out (disadvantage to small airlines).

Illegal practices: predatory pricing and behavior

- Refers to the strategies designed to get rid of competitors
  - Used if profit after competitors get out compensates losses during predatory episode.
  - Predatory pricing forbidden (it is forbidden to sell below cost almost everywhere).

- Although forbidden, it is used by airlines, because the “crime” is usually difficult to prove
  - Cost is a fuzzy concept as well as price.
  - Behavior is more conclusive.
Predatory pricing : a story

- Airline A flies from its hub H (incumbent airline)
- Airline B (the challenger) comes to hub H and opens new service to D
- Airline A does the same, and cut prices on new service : \( p_A < p_B \)
- After some time, airline B is driven out of the market, because it cannot match Airline A price
- After Airlines B goes away, airline A does the same
- When is it normal behavior, and when is it not?

A story : setting

- We have two airlines :
  - Reno Air flies mainly from Reno
  - Northwest has a hub in Minneapolis
A story: setting

Initial situation

A story: entry phase

- We have two airlines:
  - Reno Air flies mainly from Reno
  - Northwest has a hub in Minneapolis
- In 1993 Reno Air opens service from Reno to Minneapolis
**a story: entry phase**

Entry from airline B

**a story: reaction phase**

- Northwest does the same, and open routes from Reno to LA, San Diego and Seattle where Reno Air operates
- Northwest set fares under those of Reno air, and offer overrides to travel agents for reservations to/from Reno
- Northwest fares from Minneapolis to LA, San Diego, and Seattle drop
**a story: reaction phase**

Entry from airline B
and reaction from A

**a story: end of war**

- Reno Air exits the market
- Northwest exits the Reno market, and raises fares on Minneapolis markets
**a story: end of war**

![Diagram showing the end of war between Airline A and Airline B]

After exit from B!

---

**Predatory pricing : a story**

Looks a lot like predatory pricing/behavior!

- Northwest preserves its Minneapolis markets
- Passengers have higher fares
- Reno air is hurt
**Predatory pricing**

- Evidence of it in the US airline industry
  - And suspicions in Europe but no data to prove it
- Points out to market power: ability to sustain high prices to recoup losses after predatory episode
- Signaling « game »: important to build a reputation for toughness, in order to deter entry
  - If predatory prices are not observed it may be because entry is effectively deterred!

---

**II - The characteristics of competition in the air transport industry**

- 1 Networks: The backbone of the air transport competition conditions
- 2 Anti-competitive practices
- 3 Summary of findings
3 Summary of findings

- Competition is shaped by the hub network
  - Competition between hub networks
  - Anti-competitive effects of airline strategies at hubs
- Size of hub network matters
  - An extended network is a competitive advantage
  - The more destinations, the more passengers
- There is a global shortage of infrastructure capacity
  - Another constraint on competition, by lack of space and because of hub flights programming
- As in all oligopolistic markets, airlines try to limit competition:
  - Anti-competitive practices to keep under scrutiny

Plan of presentation

- Introduction: what can economic theory tell us?
- I- History of competition: regulation and deregulation of the air transport markets
- II- The characteristics of competition in the air transport industry
- III- The competing actors
- IV- Conclusion: future of competition and the role of the Authorities
III - The competing actors

1. Actors and strategies
   - the major airlines
   - the charter airlines
   - the “low-cost” airlines
   - high speed rail

2. The US market

3. The European market

4. The International markets

5. Summary of findings
The major airline

- Global strategy: transports everybody, everywhere
  - Extended network, hub strategy
  - Transports passengers and freight
  - High and low fare passengers
  - Alliances strategy with other majors
- High costs
  - Being global is costly
- Much sensitivity to economic situation
  - Difficult situation for several of those airlines today

The “low-cost” airline

- A “niche” strategy
  - direct routes, short haul
  - high traffic routes, leisure and business
  - low price
- Low costs
  - secondary airports, limited service, internet ticket sell...
- High growth market in Europe: +37% a year between 2001 and 2003
  - already existing in the USA (Southwest)
- High profitability
The Charter Airline

- A “niche” strategy
  - Non scheduled: not year-round routes
  - Leisure travels, tourist market
  - Package holidays
  - Low yield passengers
- Low costs
  - Limited service, no marketing structure
- About half of cross-border intra-European traffic
- Tend to turn to medium and long haul destinations
  - Because of “low costs” competition on short haul.

The charter airline business model

Scheduled airline
- Sell seats to passengers on scheduled flights:
- Airline tries to fill up planes by mixing high fare and low fare passengers in order to optimize profit.
- Costs are mostly fixed when flight has been scheduled

Charter airline
- Sell flights to tour-operators
- Charter airline tries to find enough clients ready to buy flights to keep planes and crews busy
- Success depends on aircraft utilisation, not on passengers!
- Only few people are needed to deal with clients

<table>
<thead>
<tr>
<th>Airline</th>
<th>/ Country</th>
<th>/ Pax (millions)</th>
<th>/ RPK’s (Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUI Group</td>
<td>/ Europe</td>
<td>/ 19.5</td>
<td>/ 55.6</td>
</tr>
<tr>
<td>Thomas Cook</td>
<td>/ Europe</td>
<td>/ 14.25</td>
<td>/ 40.87</td>
</tr>
<tr>
<td>MyTravel Airways</td>
<td>/ Europe</td>
<td>/ 9.28</td>
<td>/ 25.7</td>
</tr>
<tr>
<td>LTU Intal Airways</td>
<td>/ Germany</td>
<td>/ 5.9</td>
<td>/ 18.4</td>
</tr>
<tr>
<td>First Choice Airways</td>
<td>/ UK</td>
<td>/ 5.8</td>
<td>/ 14.56</td>
</tr>
<tr>
<td>Transavia Airlines</td>
<td>/ Netherlands</td>
<td>/ 4</td>
<td>/ 7.5</td>
</tr>
<tr>
<td>Monarch Airlines</td>
<td>/ UK</td>
<td>/ 3.1</td>
<td>/ 9.4</td>
</tr>
<tr>
<td>Spanair</td>
<td>/ Spain</td>
<td>/ 2.5</td>
<td>/ 4.8</td>
</tr>
<tr>
<td>Air Transat</td>
<td>/ Canada</td>
<td>/ 2.4</td>
<td>/ 9.9</td>
</tr>
<tr>
<td>Excel Airways</td>
<td>/ UK</td>
<td>/ 2.3</td>
<td>/ 6.4</td>
</tr>
</tbody>
</table>

High speed Rail

- A short haul operator
  - Competes with air on less than 3h-3h30 rail routes (typically Paris Marseille) : total travel time is the same as with air!
  - From city centers to city centers
- Low prices
  - partly because of infrastructure subsidies
- More environmental friendly
  - More efficient energetically less emissions
  - But electricity still has to be produced
**III - The competing actors**

- 1 Actors and strategies
- 2 The US market
  - figures
  - where do they compete?
  - competition between majors
  - the low-cost market
  - competition between low-cost airlines and majors
- 3 The European market
- 4 The International markets
- 5 Summary of findings
2 : The US market

- Only majors (and their regional partners) and low-cost airlines
  - no charter market
- Competition between the majors
  - between their hubs.
- Competition between majors and low-cost
  - Threat to the majors
- Competition between the low-cost
  - very limited so far, only Southwest has a large market share

The US market (2005)

<table>
<thead>
<tr>
<th>Airline</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>16.9%</td>
</tr>
<tr>
<td>American</td>
<td>15.8%</td>
</tr>
<tr>
<td>United</td>
<td>13.0%</td>
</tr>
<tr>
<td>Northwest</td>
<td>8.6%</td>
</tr>
<tr>
<td>Continental</td>
<td>7.9%</td>
</tr>
<tr>
<td>US Airways</td>
<td>...,</td>
</tr>
<tr>
<td>America West</td>
<td>...,</td>
</tr>
<tr>
<td>Alaska</td>
<td>...,</td>
</tr>
<tr>
<td><strong>Total ATA network majors</strong></td>
<td><strong>73.1%</strong></td>
</tr>
<tr>
<td>Southwest</td>
<td>11.7%</td>
</tr>
<tr>
<td>Jetblue Airways</td>
<td>3.0%</td>
</tr>
<tr>
<td>AirTran Airways</td>
<td>2.1%</td>
</tr>
<tr>
<td>Song</td>
<td>1.7%</td>
</tr>
<tr>
<td>Ted</td>
<td>1.7%</td>
</tr>
<tr>
<td>Independence Air</td>
<td>...,</td>
</tr>
<tr>
<td>frontier airlines</td>
<td>...,</td>
</tr>
<tr>
<td>Spirit Airline</td>
<td>...,</td>
</tr>
<tr>
<td><strong>Total US low costs</strong></td>
<td><strong>24.1%</strong></td>
</tr>
</tbody>
</table>
Where do they compete?
(*US domestic market*)

- **US low-cost:** ~24%
- **US majors:** ~73%

**Short haul, domestic high traffic routes**

**Origin-destination markets through hubs**

**Competition on the US market: the majors**

- Build barriers to entry in fortress hubs
- Compete with other majors between hubs
  - spoke-spoke routes competitive
  - hub-spokes routes with little or no competition, except by low-cost
**Competition between majors**

![Diagram showing competition between majors and hub-spoke routes]

**Competition on the US market**: the majors

- Build barriers to entry in fortress hubs
- Compete with other majors between hubs
  - spoke-spoke routes competitive
  - hub-spokes routes with little or no competition, except by low-cost
- Operate mainly on domestic markets
  - Where they are “attacked” by low costs
- Huge firms with high costs
  - Weight of long history
  - Try to lower costs but it is hard work!
Costs on the US market

<table>
<thead>
<tr>
<th></th>
<th>cost (cent per ASM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMR Corp.</td>
<td>11,07</td>
</tr>
<tr>
<td>UAL Corp.</td>
<td>11,73</td>
</tr>
<tr>
<td>Delta</td>
<td>10,47</td>
</tr>
<tr>
<td>Northwest</td>
<td>9,17</td>
</tr>
<tr>
<td>Continental</td>
<td>9,58</td>
</tr>
<tr>
<td>US Airways</td>
<td>12,46</td>
</tr>
<tr>
<td>America West</td>
<td>8,05</td>
</tr>
<tr>
<td>Alaska Airlines</td>
<td>10,84</td>
</tr>
</tbody>
</table>

Source ITA Presse, cies US, année 2002

Competition on the US market: the majors’ problems

- Suffered from drop in demand after sept. 11, 2001
  - US majors have most of their activity in domestic markets: very sensitive to US economic conditions
- Suffer from successful competition from the low costs carriers
  - Mostly on domestic markets
- As a result several ailing airlines
  - Several majors concerned: Delta, Northwest, United Airlines, Us Airways…
  - Are beginning to recover (since 2006)
The « Low Costs » airlines in the USA

- Southwest (major)
- America West (major)
- JetBlue (major)
- AirTran (major)
- Frontier
- National
- Trans Air
- Spirit
- ....

† Sun Country
† Valuejet (bankruptcy in 1996)
† Vanguard (bankruptcy)
† Metrojet (subsidiary Us Airways, 1998- end 2001)
† United Shuttle (reintegrated in United)
† Continental Lite
† Song (subsidiary Delta - April 2003, reintegrated in 2006)

The “Champion” : Southwest

- Began operating in 1971, served the global US market after 1978, became a major in 1990, is today the 4th domestic airline in the US
- Average stage length 880 km, average passenger travel 1 150 km, average price $85,
- 59 airports, no hub, 338 routes, domestic traffic
- 34 years of profit
Southwest invented the “low-cost” concept

- High traffic short haul routes, served with high frequencies
  - take large share of market from the start (on 100 first routes, has on average 69% of market share)
- Low prices, possible because of low costs
- use of secondary airports, for costs reasons but primarily to avoid direct competition with the majors (and avoid barriers to entry)
- direct sales (phone, internet) : same reasons
- progressive development (10-15% a year no more)

Competition on the US market : the low-cost airlines response

- The strategy of low-cost airlines (and the whole concept) is a response to the anti-competitive strategy of majors
- The whole point is to « by-pass » the barriers erected by the majors
  - by using other airports : non hub airports
  - by not using the classical distribution channels, where competition is distorted by the majors
  - by offering mainly direct flights
  - by focusing on low prices
Competition between low-cost and majors

How to use secondary airports: The example of Washington-Baltimore

- 3 airports: Reagan Washington National (DCA), Washington Dulles (IAD), and Baltimore (BWI)
- Southwest entered the market in 1993 at BWI: low prices, high frequencies
- After a period of intense competition, UA and USAir had to cut back frequency at IAD and DCA
Result of low cost competition

<table>
<thead>
<tr>
<th>Hub City</th>
<th>Carrier</th>
<th>Hub Premium 1988</th>
<th>Hub Premium 1995</th>
<th>Hub Premium 1997</th>
<th>1997 Low-Fare Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>Delta</td>
<td>47%</td>
<td>38%</td>
<td>20%</td>
<td>24</td>
</tr>
<tr>
<td>Charlotte</td>
<td>US Airways</td>
<td>34%</td>
<td>51%</td>
<td>59%</td>
<td>0</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>Delta</td>
<td>45%</td>
<td>64%</td>
<td>67%</td>
<td>1</td>
</tr>
<tr>
<td>Denver</td>
<td>United</td>
<td>-4%</td>
<td>13%</td>
<td>10%</td>
<td>17</td>
</tr>
<tr>
<td>Detroit</td>
<td>Northwest</td>
<td>2%</td>
<td>21%</td>
<td>15%</td>
<td>28</td>
</tr>
<tr>
<td>Memphis</td>
<td>Northwest</td>
<td>33%</td>
<td>36%</td>
<td>36%</td>
<td>6</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>Northwest</td>
<td>23%</td>
<td>41%</td>
<td>44%</td>
<td>3</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>US Airways</td>
<td>12%</td>
<td>46%</td>
<td>57%</td>
<td>1</td>
</tr>
<tr>
<td>Salt Lake City</td>
<td>Delta</td>
<td>21%</td>
<td>-11%</td>
<td>-15%</td>
<td>28</td>
</tr>
<tr>
<td>St. Louis</td>
<td>TWA</td>
<td>24%</td>
<td>3%</td>
<td>14%</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: predatory pricing in the US airline industry, C. Oster, J. Strong

III - 2

The future of competition on the US market

- Majors have difficulties to adapt
  - they cannot raise barriers against the low-cost
  - they have high costs
- More entry of low-cost on majors markets
  - because of low-cost expansion
- In the future equilibrium between low-cost and majors
  - good for competition and for the passenger
  - majors have to lower their costs (restructuring ?)
  - What market shares for low costs?
III - The competing actors

1. Actors and strategies
2. The US market
3. The European market
   - where do they compete?
   - competition between the European majors
   - the European low-cost airlines
   - low-cost airlines, majors and charters
4. The international markets
5. Summary of findings

III - 3

3: The European market

- A different setting
  - majors, low-cost, charters, and...rail
- Competition between the majors
  - between their hubs.
  - competition but also partnerships
- Competition between majors and charters
  - not a new feature, limited competition
- Competition between low-cost and the others
  - low-cost are new actors in the European market
Where do they compete?
(European market)

- **Charter airlines**
  - Leisure market, short to medium haul, tourist destinations

- **Low-cost**
  - Intra-European Leisure market, medium haul
  - Origin-destination markets through hubs, business and leisure, connecting passengers and direct flights

- **European majors**
  - Short haul, high traffic routes, leisure and business, no connections

**Competition between the majors**

- The European majors are trying to restructure through alliances and acquisitions
  - Air France / KLM merger in May 2004

- Ultimately, the market will be shared between 3 main competing groups:
  - Lufthansa (+ Austria, SAS)
  - Air France (+ Alitalia, KLM)
  - British Airways (+ Iberia)

- Not much competition between majors on local markets foreseeable
The European low-cost airlines

- Follow the strategy designed by Southwest and adapt it to the European market
  - short haul, high traffic routes, secondary airports
  - low costs, low prices, simple marketing centered on price
  - ticket sales mainly through the internet (~90% for Easyjet and Ryanair)

- They have entered the market after liberalization (beginning of 1990’s)
  - many new actors in 2002-2005: about 50 low-cost airlines in 2004

The European low-cost airlines

- A European originality: the strategy of ancillary revenues
  - Idea: supplement revenues by developing new services, or by charging for formerly free services
  - Strategy developed by Ryanair, Flybe, Easyjet…
  - Examples of new services: car rentals, train or bus tickets, hotel booking…
  - Example of existing services: food on board, checked-in baggage (5£ Ryanair, 4£ Flybe), seat assignment (8 £ flybe)

- 15% of revenues for Ryanair in 2005! (5£ per pax)
Low-cost airlines in Europe

- Ryanair (1985)
- Easyjet (1995)
- Virgin express (1996)
- SkyEurope (sept. 2000)
- BasiqAir (dec. 2000)
- Germania (nov. 2001)
- Bmibaby (mars 2002)
- MyTravelLite (oct. 2002)
- Germanwings (oct. 2002)
- Flybe
- …and others
- Buzz (Septembre 1999) bought Ryanair in april 2002
- Goodjet(2002, bankruptcy)
- Go (bought in 2002 by Easyjet)
- Debonnair (octobre 1999)
Ryanair: Figures

- Fleet and network:
  - 91 B 737 (March 2005)
  - 9 bases: Luton, Stansted, Shannon, Dublin, Glasgow, Bruxelles, Stockholm, Frankfort, Milan
  - 217 routes, 65 airports

<table>
<thead>
<tr>
<th>Year Ended</th>
<th>March 31, 2004</th>
<th>March 31, 2005</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers</td>
<td>23.1m</td>
<td>27.6m</td>
<td>+19%</td>
</tr>
<tr>
<td>Revenue</td>
<td>€1.074bn</td>
<td>€1.337bn</td>
<td>+24%</td>
</tr>
<tr>
<td>Profit after tax (Note 1)</td>
<td>€226.6m</td>
<td>€268.9m</td>
<td>+19%</td>
</tr>
</tbody>
</table>

Source Ryanair

Ryanair destinations
Easyjet: Figures (2005)

- The firm:
  - Created in 1995
- Fleet and network:
  - 54 B737 + 55 A319
  - 212 routes, 64 cities
  - 15 bases in Europe: London Luton, Stansted, Geneva, Liverpool, Nice, Amsterdam, Paris Orly...
  - Stage length: 926 km
- Financial results:
  - Revenues: £1341m
  - Profit: £68m
  - Ancillary revenues: 7%
- Traffic:
  - Load: 85.2%

**Traffic**

<table>
<thead>
<tr>
<th>Année</th>
<th>PAX annuels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>30 000</td>
</tr>
<tr>
<td>1996</td>
<td>420 000</td>
</tr>
<tr>
<td>1997</td>
<td>1,140,000</td>
</tr>
<tr>
<td>1998</td>
<td>1,880,000</td>
</tr>
<tr>
<td>1999</td>
<td>3,670,000</td>
</tr>
<tr>
<td>2000</td>
<td>5,996,000</td>
</tr>
<tr>
<td>2001</td>
<td>7,664,000</td>
</tr>
<tr>
<td>2002</td>
<td>11 400 000</td>
</tr>
<tr>
<td>2003</td>
<td>20 300 000</td>
</tr>
<tr>
<td>2004</td>
<td>24 300 000</td>
</tr>
<tr>
<td>2005</td>
<td>29 600 000</td>
</tr>
</tbody>
</table>

Données Easyjet

Easyjet: traffic

![Graph showing Easyjet's passenger growth from 1995 to 2005](image)
**Low-cost and majors**

- Large cost differential
- Different strategies: idem USA
  - low-cost focus on short haul routes with high traffic
  - they use secondary airports (Beauvais-Dublin)
  - they sell low priced tickets
- They are beginning to bother the majors
  - legal dispute Ryanair / Air France about airport “subsidies”
  - “low-costs” take a part of majors business market (20% of passengers on Ryanair for example)

**Low costs and Charters**

- Same level of costs
- Different markets in general
  - scheduled for low-cost, non scheduled for charters
  - low-cost stay in Europe (typically, 1000 km routes), Charters go further (medium haul)
  - but some markets are the same: north/south short haul tourist markets (UK to Spain, Portugal)
- Low costs airlines may take a small part of the traditional charter market
  - independent travelers (20% of charter market) on some non too seasonal routes
And rail ....?

- On short haul routes, high speed rail is also a competitor with “winning cards”:
  - Access to city centers
  - Low prices
- Compete with majors on feeder routes
  - But intermodal agreements can lead to abandon of air routes (Paris-Brussels)
- Potential competition with low costs?
  - Low costs mainly avoid HST routes so far
  - Market segmentation: shorter routes for HST, and longer routes for air?

Future of European markets

- A strong growth for low-cost
  - Nearly 20% of European traffic in 2004 (5.2% in 2000)
- Restructuring of majors
  - in a medium growth context (4-5% a year)
- Competition for all
  - more competition than on the US market
  - how many low-cost airlines will survive?
  - Competition of low-cost with charters and majors
- An equilibrium to find
  - between majors, charters and low-cost airlines
III - The competing actors

- 1 Actors and strategies
- 2 The US market
- 3 The European market
- 4 The international markets
  - competition and cooperation
  - the alliances
- 5 Summary of findings

III - 4

4 The international markets

- Competition…
  - Fierce on some markets (price wars on north Atlantic markets)
  - most markets are competitive
- …and cooperation
  - Alliance policies among all international airlines to achieve global world coverage
  - Three main alliances: Oneworld, Skyteam, Star Alliance, with 54.6% of world traffic (RPKs, 2005)
### Oneworld

- Aer Lingus
- American Airline
- British Airwyas
- Cathay Pacific
- Finnair
- Iberia
- LanChile
- Qantas Airways

**Passengers:** 234 millions  
**Market Share:** 11.3%  
**Network and fleet**  
- 1855 aircraft  
- 576 destinations  
- 134 countries

### SkyTeam

- Aeroflot  
- Aeromexico  
- Air France + KLM  
- Alitalia  
- Continental  
- CSA Czech Airlines  
- Delta Air Lines  
- Korean Air  
- Northwest

**Passengers:** 357 millions  
**Market share:** 17.3%  
**Network and fleet**  
- 3199 aircraft  
- 658 destinations  
- 137 countries

- **New arrivals:** China Southern Airlines
**Star Alliance**

- Air Canada
- Air New Zealand
- All Nippon Airways
- Asiana
- Austrian Airlines
- Bmi British Midland
- LOT-Polish Airlines
- Lufthansa
- Mexicana
- Scandinavian
- Singapore Airlines
- Spanair
- TAP Portugal
- Thai Airways
- United Airlines
- US Airways
- Varig

Passengers : 387 millions  
Market Share : 18.7%  
Network and fleet  
- 822 destinations  
- 152 countries

---

**The 6th freedom carriers : new opportunities**

- Some carriers take advantage of 6th freedom rights*, and of their geographical position
  - Ex: Emirates in Dubai, a long haul–long haul hub!

---

[Diagram showing connectivity of regions: Europe, India, North America, Southeast Asia, Australasia, Africa, Dubai]
The 6th freedom carriers: new opportunities

- Some carriers take advantage of 6th freedom rights, and of their geographical position
  - Ex: Emirates in Dubai, a long haul–long haul hub!
  - But also Singapore Airline, Thai Airways, Japan Airline…
- They collect and redistribute traffic over the hub
  - Enough traffic to serve secondary routes
  - Take demand away from long haul airlines: Qantas overseas market share dropped from 41% to 28% in 10 years

III - The competing actors

- 1 Actors and strategies
- 2 The US market
- 3 The European market
- 4 The international markets
- 5 Summary of findings
5 Summary of findings

- In the US or European markets, restructuring of large airlines, more concentration to come
  - ex: AA buys TWA, merger Us Air / America West
  - ex Air France buys KLM
- Majors grouped into three main alliances
  - ultimately three main airlines groups covering the world
- Low-cost airlines provide an alternative to majors on short haul markets in Europe and in the US
  - They are developing also in other parts of the world!

Conclusion: future of competition and the role of the Authorities
Regulatory setting

- For better or for worse, air transport has been largely deregulated
  - USA
  - Europe
  - International markets
- This trend will go on, and more markets will become open to competition
  - More international markets
  - Trend strongly encouraged by the USA except on domestic market

Competition structure

- Competition will remain limited in air transport
  - Size of networks matters
  - Capacity constraints will worsen with traffic increases
  - Evolution towards a few (three ?) groups of airlines, with worldwide networks
Competition structure

- Competition will remain limited in air transport
- On international markets competition may be enough to ensure low prices
  - Depends on the number of alliances, and their coverage of the world
- On local markets, non hub airlines (low-cost airlines?) will provide competition by using alternate airports
  - In Europe, also competition of high speed rail, and complementarity on short haul markets
Competitors

- Global airlines may emerge, nationality of airlines becoming irrelevant progressively
  - already fading in Europe with the notion of European airline
  - consolidation of alliances process
- There is room for “Niche” strategies, to serve market that the global airlines are not good at or willing to serve
  - Charters
  - Low-cost airlines

Competition and the Authorities

- Competition may work after all in the air transport industry
  - equilibrium between majors, low-cost, charters
- As in all oligopolistic markets, there is and will be anti-competitive behavior
  - especially in the hub framework
- What remains for the Authorities in a deregulated market, is to ensure “fair” competition
  - by ensuring access to the markets, watching them, and preventing (or penalizing) anti-competitive behavior
Role of the Authorities

- Monitor the markets:
  - traffics, prices, airlines financial situation...
  - give all actors in the industry a fair access to information
- Look for anti-competitive practices and prevent them as far as possible
  - monitor competition conditions
  - make sure airlines have access to the markets
- Monitor partnerships and mergers
  - in order to avoid monopolization

Remaining questions

- Internationalization of airlines
  - On what conditions: safety and security aspects, social aspects...
- What Authorities?
  - In a global airline industry, there is a need for a “global” Authority, even if local ones remain useful: ICAO?
- Some countries may want to stay aside
  - In order to “keep” the domestic market for national airlines (China?)
As a conclusion, “food for thought”

- Without being excessively pessimistic, it is legitimate to ask what will become of competition and of air transport if energy prices go way up.
  - Then ticket prices will go up
  - Demand will go down, or at least increase slower
    - depending on price increases and on the evolution of people’s revenues
  - Weaker airlines will go bankrupt
  - Competition will diminish
  - Air transport may become (again) a luxury for richer, fewer people!