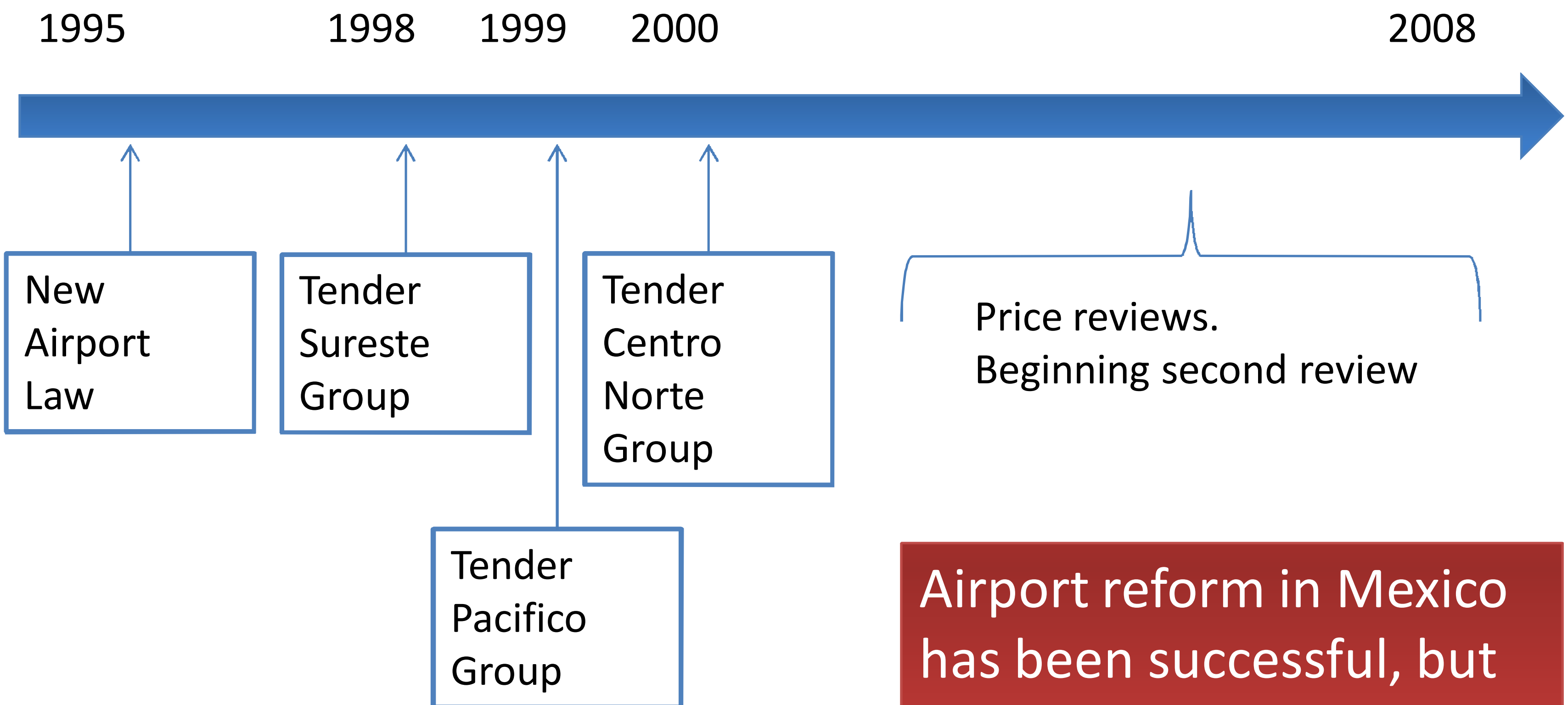
# The Mexican Experience

International Seminar on Airport Concession

# Airport Reform Timeline




Airport reform in Mexico has been successful, but there is room for improvement.

# Overall lessons

## Airport concessioning is a long term process

- Define long term objectives, put user at center stage.
- Define steps to get there.

## Introduce competition where possible

- Few but relevant. In and between airports.
- Anticipate them from the beginning.

## Changes to concession regime will be needed

- Expect changes and prepare for them.
- Introduce flexibility.

# Background

# System overview

## Infrastructure

- 85 airports
- 56 international

## Traffic

- 85 mill pax
- MEX, 25; ATL, 90

## System

## Traffic Structure

- 60% international pax
- 40% national pax

## Concentration

- 60% in 4 airports
- MEX, 30%

MEX ranks 46 among the largest airports in the world.

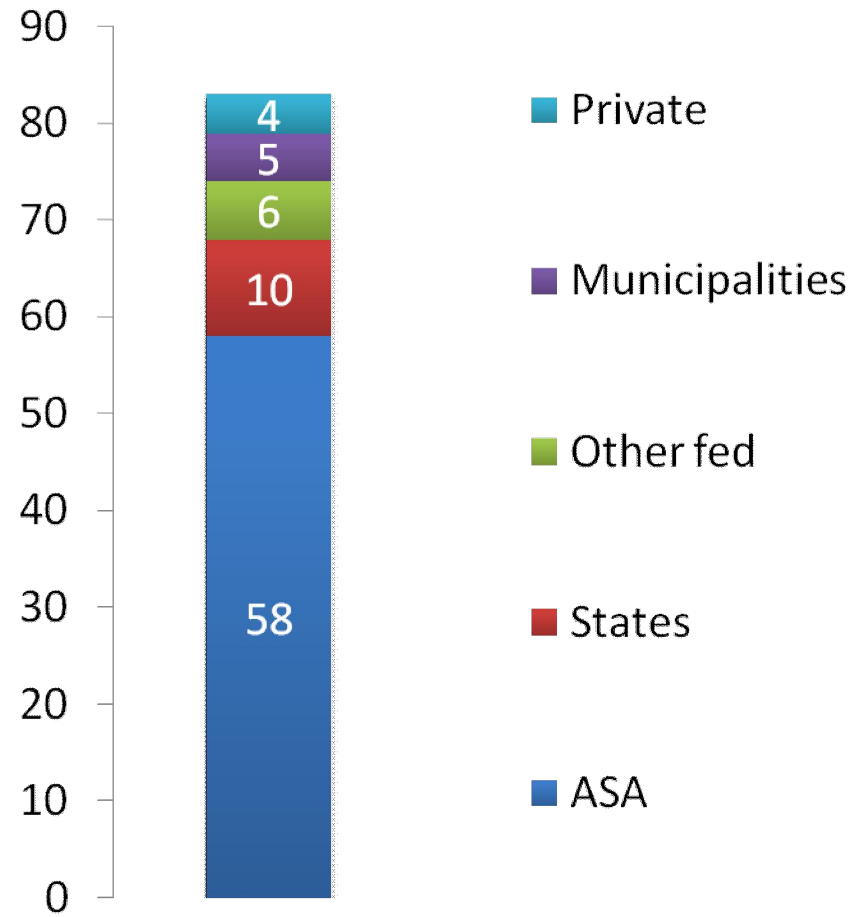
# Traffic is highly concentrated

| Airport | Pax | % |
|---|---|---|
| Mexico City | 25.7 | 30.3 |
| Cancun | 11.3 | 13.3 |
| Guadalajara | 7.3 | 8.6 |
| Monterrey | 6.5 | 7.7 |
| Subtotal | 50.9 | 60.0 |
| Others | 34.0 | 40.0 |
| Total | 85.0 | |


Four airports attended 60% of passengers in 2007.
MEX is involved, as origin or destination, in the transportation of 50% of all passengers, 66% in domestic routes.

# Prior to reform

In 1998, the government agency, ASA, operated 58 of 83 airports




ASA operated all aspects of airports, basic airport services (runway, platforms, terminals, etc.) and some complementary services (fuel).

# Awareness for reform

- Increasing awareness in the early 90s that reform was needed in all transportation infrastructure.
  - Performance was not good.
    - Poor operation by government, large subsidies.
    - Lack of resources to modernize.
  - Taking advantage of NAFTA needed a structural change in all transportation sectors (ports, railroads and airports).
- New laws were enacted in all areas of transportation that allowed private sector participation (new Airport Law in 1995).
- Lack of resources following crisis of 1995 further accelerated the process.

# Reform process

# Issues to consider

- How to transfer the activity to private sector without loosing control?
- How to design the transfer process to introduce transparency and competition?
- How to assure a good price regulation when needed?
- How to deal with airports with little traffic?

# Reform process

**Planning**
- Guidelines
- Regional grouping

**Transfer**
- Public tender 15%
- Public Offering 85%

**Consolidation**
- Permanence restictions
- Technological transfer

# Guidelines overall objectives

- Conserve, modernize and widen airport infrastructure.
- Increase the levels of security and efficiency.
- Improve the quality of airport, complementary and commercial services, and at the same time guarantee that they are provided in a competitive and non-discriminatory way for the benefit of users.
- Promote the development of the air and airport industry at a regional level.
- Guarantee at all moments the continuity of services in all airports.

# Grouping

- Formation of four groups of airports with 35 of ASA's airports.
  - Ciudad de México (1):
  - Sureste (9)
  - Centro-Norte (13)
  - Pacifico (12)
- A strong regional pattern is evident (at least in the names of the groups)


Sureste
Centro-Norte
Pacifico
Ciudad de México

# Airport selection

- Individual airport selection:
  - Traffic levels
  - Growth potential
- Grouping considerations:
  - Strong regional pattern.
    - Certain deviations to allow some groups to have a better mix of airports in industrial cities and beach destinations.
  - Each group had an "anchor" airport with a traffic level of more than 5 million passengers.

# Pax by group and airport, 2007

| Sureste | | Pacifico | | Centro-Norte | |
|---|---|---|---|---|---|
| **Cancún** | **11,340** | **Guadalajara** | **7,333** | **Monterrey** | **6,560** |
| Mérida | 1,268 | Tijuana | 4,740 | Culiacán | 1,138 |
| Cozumel | 511 | Puerto Vallarta | 3,139 | Acapulco | 1,057 |
| Villahermosa | 854 | Los Cabos | 2,901 | Ciudad Juárez | 909 |
| Oaxaca | 514 | Hermosillo | 1,338 | Mazatlán | 905 |
| Veracruz | 977 | Guanajuato | 1,274 | Chihuahua | 855 |
| Huatulco | 376 | Morelia | 599 | Zihuatanejo | 675 |
| Tapachula | 211 | La Paz | 630 | Tampico | 580 |
| Minatitlán | 189 | Aguascalientes | 464 | Torreón | 522 |
| | | Mexicali | 608 | Durango | 279 |
| | | Los Mochis | 290 | Zacatecas | 277 |
| | | Manzanillo | 249 | San Luis Potosí | 264 |
| | | | | Reynosa | 191 |
| | **16,239** | | **23,565** | | **14,213** |

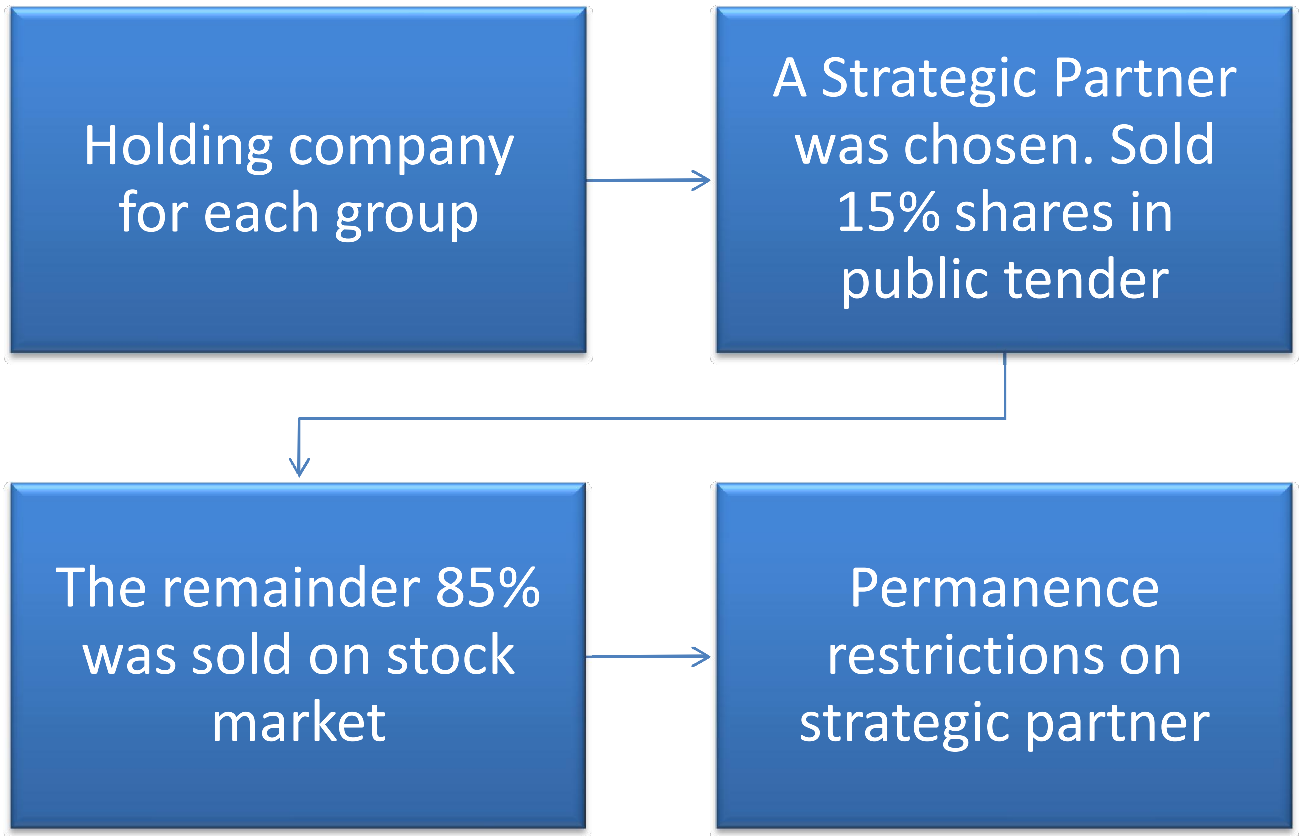
# Issues in grouping

- Grouping may be good (economies in activities like administration, procurement, etc.)
- However, regional grouping can weaken competition, without other tangible benefits.
  - Not a problem for all airports. Mexican topography is difficult and distance between airports is large in most cases (~200 km).
  - Access to airports by surface transportation is difficult (i.e., there are no passenger trains in Mexico).
  - The problem is limited to few but important airports in Mexico.
    - New airports are likely to be built where demand is growing faster and there is already an airport nearby.
  - **Need to consider present and future airports in regional grouping policy. Airports are long term ventures!**

# Issues in grouping

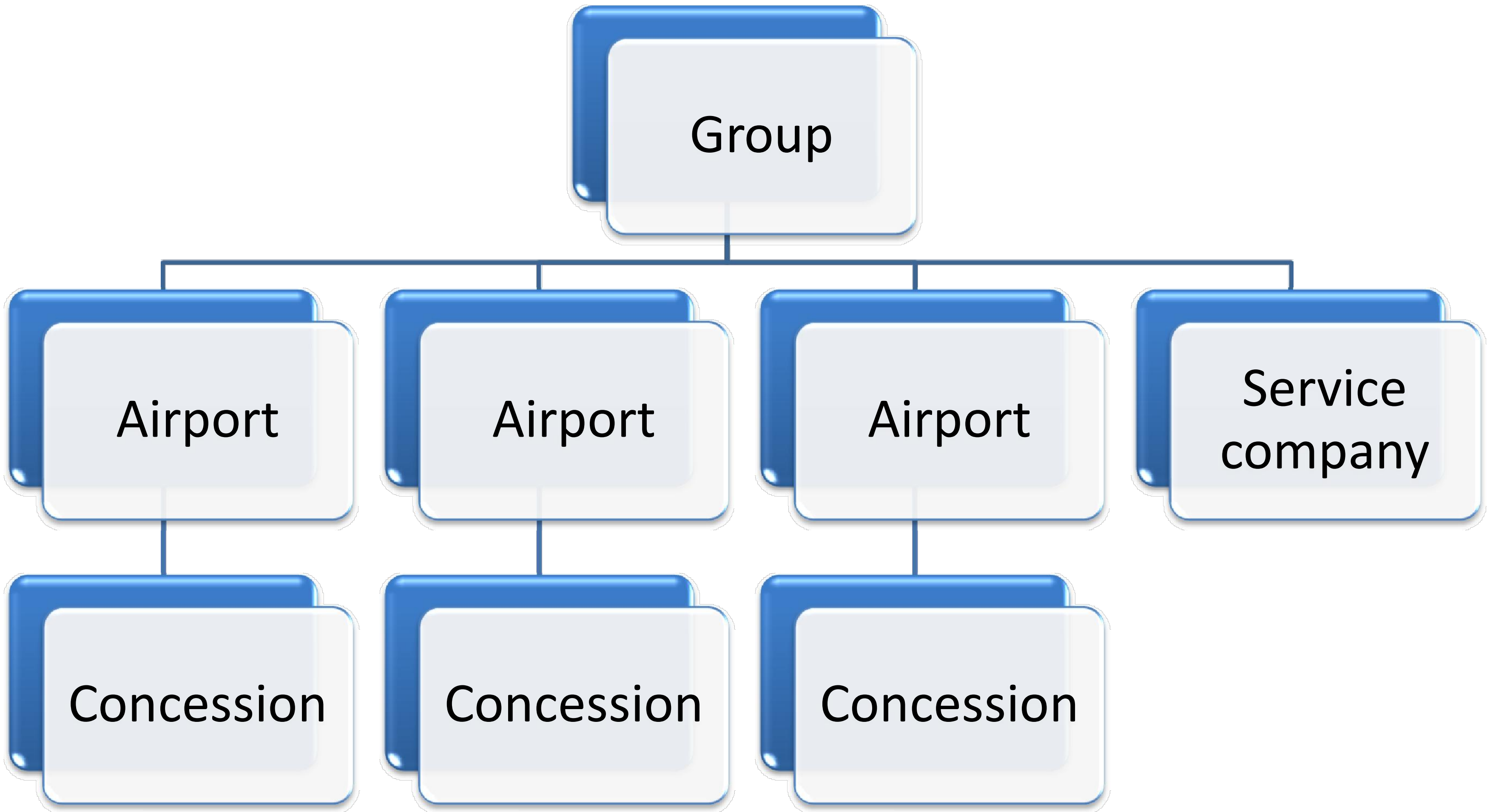
- In Mexico, grouping appears to be related more to non-geographical considerations, such as cross subsidies.
  - All groups have a large profitable airport and small airports. Some loose money. There is an implicit cross subsidy.
  - This is a problem since regulation does not deal with this issue (for example, price regulation is set on an individual airport basis)
- It begs the question: How to deal with small airports?
  - Explicit transfer policy?
- **Grouping may be good but does not necessarily be geographically based, particularly if it weakens competition.**

# Transfer process

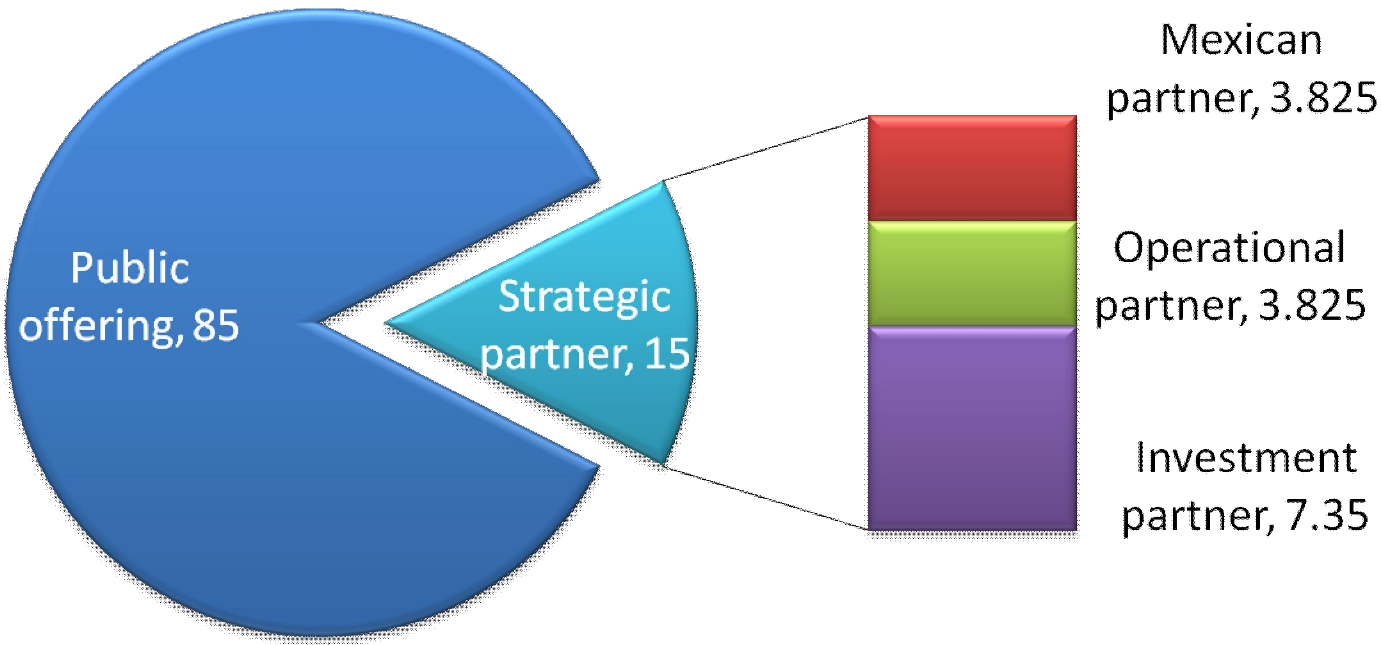



The Strategic Partner had to prove expertise in Mexican businesses and international recognition in airport operations. Could only participate in one group.

# Design of group holding company



## Required structure




**Integration of Strategic Partner (15% of shares):**
Mexican partner (MP), at least 25.5% of equity.
Airport operational partner (OP), at least 25.5% of equity.
Investment partner *(IP) (optional)*: At most 49% of equity.

# Rights of Strategic Partner

- Chairs in the board.
- Appoint General Director.
- Veto rights in certain matters (i.e., increase in equity, mergers).
- Option to buy 5% additional equity.
- Right (and obligation) to sign a technological transfer and technical assistance contract for 15 years (very important for operational control). Fee currently about 5% of operating income.

# Restrictions for the Strategic Partner

- Permanence
  - Together, the MP and the OP must maintain at least 51 per cent of equity of the Strategic Partner for at least 10 years.
  - The Strategic Partner should maintain in the holding company the share of equity corresponding to the MP and OP for at least 10 years, releasing a fifth each year after that, if they want to.
  - The IP must maintain its equity position in the Strategic partner for at least three years after the first public offering.
- Other
  - The Strategic Partner should always maintain a ratio of Debt to Assets lower than 0.5.
  - The Strategic Partner or its shareholders can not have more than 20% of the holding company (has been relaxed).

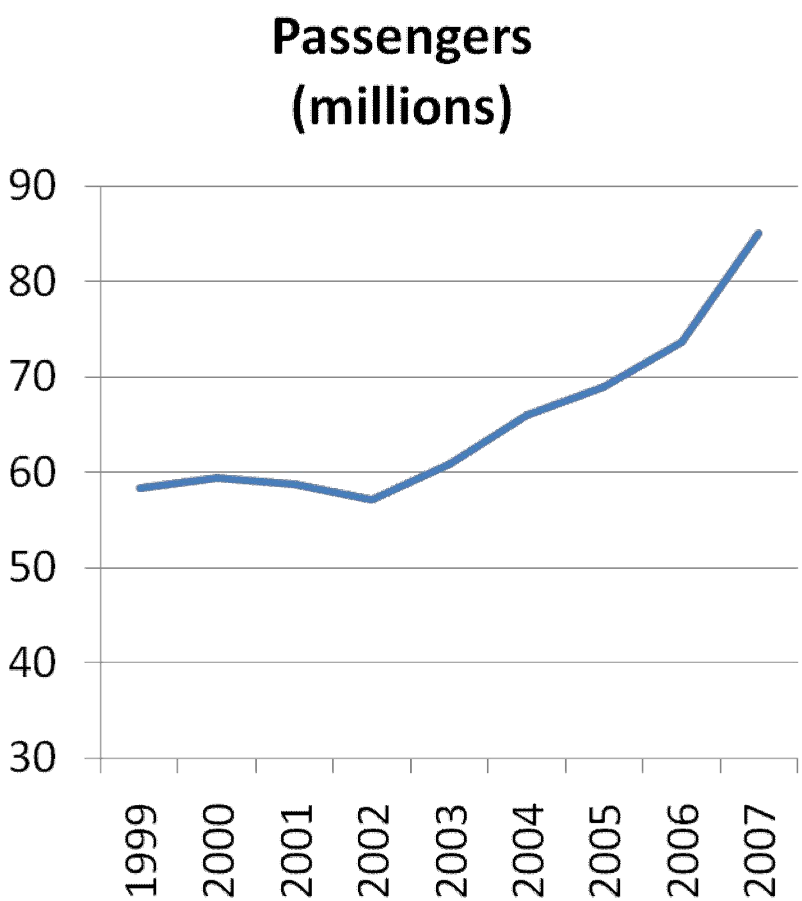
# Results of tender

| Group | Date | Paid for 15% (mmd) | Paid for 100%* (mmd) |
|---|---|---|---|
| Ciudad de Mexico | Pending | - | - |
| Sureste | December, 1998 | 120 | 800 |
| Centro-Norte | June, 2000 | 88 | 586 |
| Pacifico | August, 1999 | 261 | 1,740 |

* Implicit payment based on 15% paid.

| Group | Operating partner |
|---|---|
| Sureste | Copenhagen Airports A/S |
| Pacifico | AENA – Aeropuertos Españoles y Navegación Aérea |
| Centro-Norte | ADPM - Aeroports du Paris Management |

# Transfer process results.



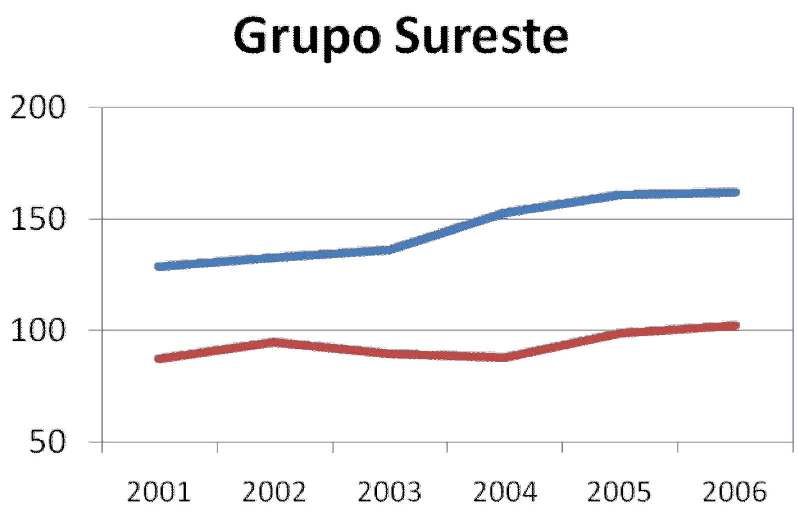

- Successful transfer:
  - No major operational problems.
  - No financial problems for groups.
  - Investments as required.
  - Modernization
- Room for improvement:
  - Airports that loose money.
  - Minor operational problems.
  - Relatively high prices.
  - Cost reductions.

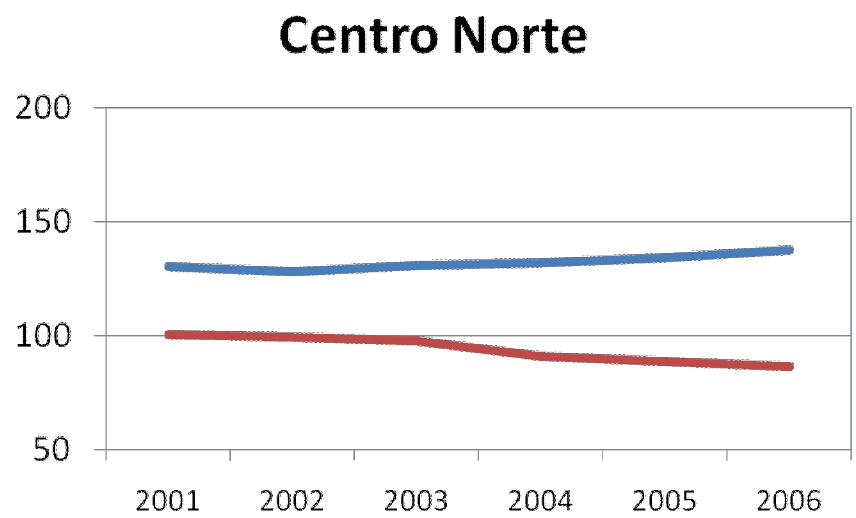
| Selected Financial Indicators 2001-2006[1] | | | | |
|---|---|---|---|---|
| | Sureste | Centro-Norte | Pacifico | TRL[2] |
| EBITDA Margin | 59.0 | 45.8 | 64.0 | 47.8 |
| EBIT Margin | 36.3 | 29.6 | 37.8 | 28.0 |
| Net Income Margin | 23.9 | 20.2 | 21.8 | |
| Net Income / Equity | 3.3 | 3.7 | 2.0 | 4.1 |
| Average growth in revenues | 4.8 | 1.1 | 3.8 | |
| Average growth in op expenses | 3.4 | -2.9 | 0.4 | |

1/ Cumulative for the period 2001-2006.
2/ Average of 50 airports reported in Transport Research Laboratories (TRL).

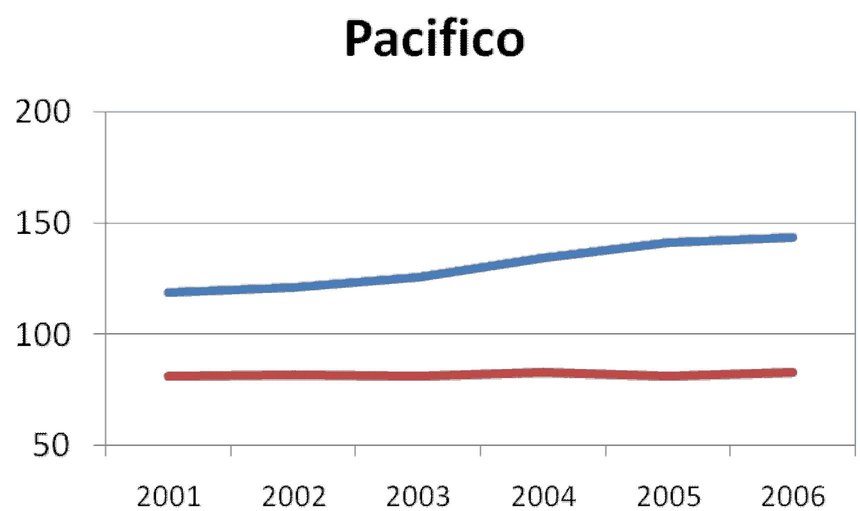
High EBITDA but low net income is the result of how the particular concession process was designed, which has a very low debt-equity ratio(more on this later)

# Revenues and operational cost per passenger




Increase in earnings driven by growth in revenues, rather than cost reductions.



# Regulation and competition

# Regulation

- A concession is required to build and operate an airport.
- Concessions are granted through public tenders, except in some special cases (i.e., by request of state governments).
- Concessions are granted for 50 years, renewable for another 50 years.
- A Master Development Program (MDP) guides the investment plan for the airport and must be reviewed every 5 years
- Once approved, investments in the MDP are mandatory for the following 5 years and the *concessionaire* is required to invest the agreed upon amount.

# Ownership restrictions

- Vertical:
  - Airlines can not have more than 5% of airports equity, and vice versa (Airport Law).
- Horizontal:
  - Mergers and acquisitions need authorization from the FCC.
  - Participants in tenders for new concessions have to be cleared by the FCC.

# Regulation services categories

- **Airport services.** Basic services provided by concessionaire.
  - Runways, taxiways, platforms, terminal facilities, hangars, boarding facilities, parking spaces;
  - Security, rescue, ground traffic control, lighting and visual aids;
- **Complementary services**. Passenger and airplane support services that can be provided by an airline, the airport or a third party under contract with the previous two.
  - Ramp services, passenger check-in, catering;
  - Aircraft cleaning, maintenance, repair, fuel in-to-plane and related activities.
- **Commercial services***.* Services that are not considered essential for the operation of an airplane or the airport (space for restaurants, shops, car rentals, advertising, etc.).

# Intra-airport competition

- Airport and complementary services must be provided to all users on a uniform and regular basis:
  - Non-discriminatory in quality, opportunity and price
- Airport operators must arrange for competitive options in complementary services.
  - Can only limit providers because of space, efficiency or security considerations
  - In that case, contracts must be awarded in a tender process to the provider which offers the best conditions.
- No major problems in the application of these rules for the majority of services.
- However, localized problems in slot allocation, fuel into plane and ground transportation.

# Slot allocation

- MEX presents congestion problems. It has been declared congested  for several hours during the day.
- The declaration imposes obligations for slot allocation:
  - First 4 years, build a pool from abandoned slots and auction them.
  - Following years, retire 10% of slots from each airline and auction them.
- Mechanism difficult to implement, but has not been replaced with alternative which guarantees fairness and transparency. This is an important competition problem that needs to be addressed.

# Into plane fuelling

- Production and distribution of jet fuel is reserved to Pemex, a public company.
- At airports, into plane fuelling is reserved to ASA, for “security reasons”.
- Security is not a compelling enough reason to prevent competition. Other parts of the world do it without problems.

# Ground transportation

- Taxis to and from the city are an important part of total transportation price.
- Becoming more important as cost of flight has decreased (LCCs).
- Taxis at airports need a federal permit.
- Because of unions, there is no competition in some airports and prices are high. Airports sometimes prefer to avoid the problem.
- Need to integrate federal approved taxis with cities public transportation system.

# Price regulation

# Price regulation

- Airport law states that the regulator may impose price regulation if the Federal Competition Commission (FCC) declares that there are no reasonable competitive conditions.
- Airport law does not contemplate price regulation in complementary and commercial services.
- Between 1998 and 2000, previously to the tender processes of the airport groups, the FCC declared the non existence of adequate competition conditions in the 34 airports that formed the three groups to be privatized.
- Price regulation was imposed in those 34 airports.

# Price regulation

- Price regulation takes the form of a joint price cap for each airport.
- The operator is free to fix individual service prices as long as overall revenues divided by traffic do not exceed the joint price.
  - A unit of traffic is either a terminal passenger or a 100 kilograms of cargo.
- The joint price is adjusted annually by inflation and an efficiency factor.
- The joint price and the efficiency factor is reviewed every five years, based on the MDP.
  - In between period adjustments are possible if traffic changes abruptly.

# Price regulation

- A <u>dual tier</u> scheme is in place.
  - Regulated revenues are those derived from airport services and those charged for access to providers of complementary services.
- Currently regulated services represent between 70 and 80% of overall revenues.
- The single most important charge is the Passenger Charge which accounts for about 80% of regulated revenues and more than 50% of overall revenues.
- Revenues from commercial services have increase steadily from 3~5% to around 20~25%. In airports around the world commercial revenues represent an average of 43%.

# Dual versus single tier controversy

- Mexican FCC favors the single tier approach.
  - Commercial revenues cannot be generated without aeronautical facilities so that they must be considered the same business (it is not the same as a shopping mall).
  - When airports have substantial market power they enjoy it in both, airport and commercial activities. Price regulation is not efficient if it only deals with one of two complementary activities.
  - Commercial revenues are generated by airline traffic, so that the benefit of commercial activities must be shared with airlines and passengers.
  - It is difficult to separate costs among activities that share facilities.

# Price regulation performance

- Specific price regulation chosen plus tender process did not favored users.
- Efficiency factor has not have an impact.
- Price determination procedure is unnecessarily complex (prone to errors and regulatory capture).
- May need serious adjustment in the medium term.

# Tender process

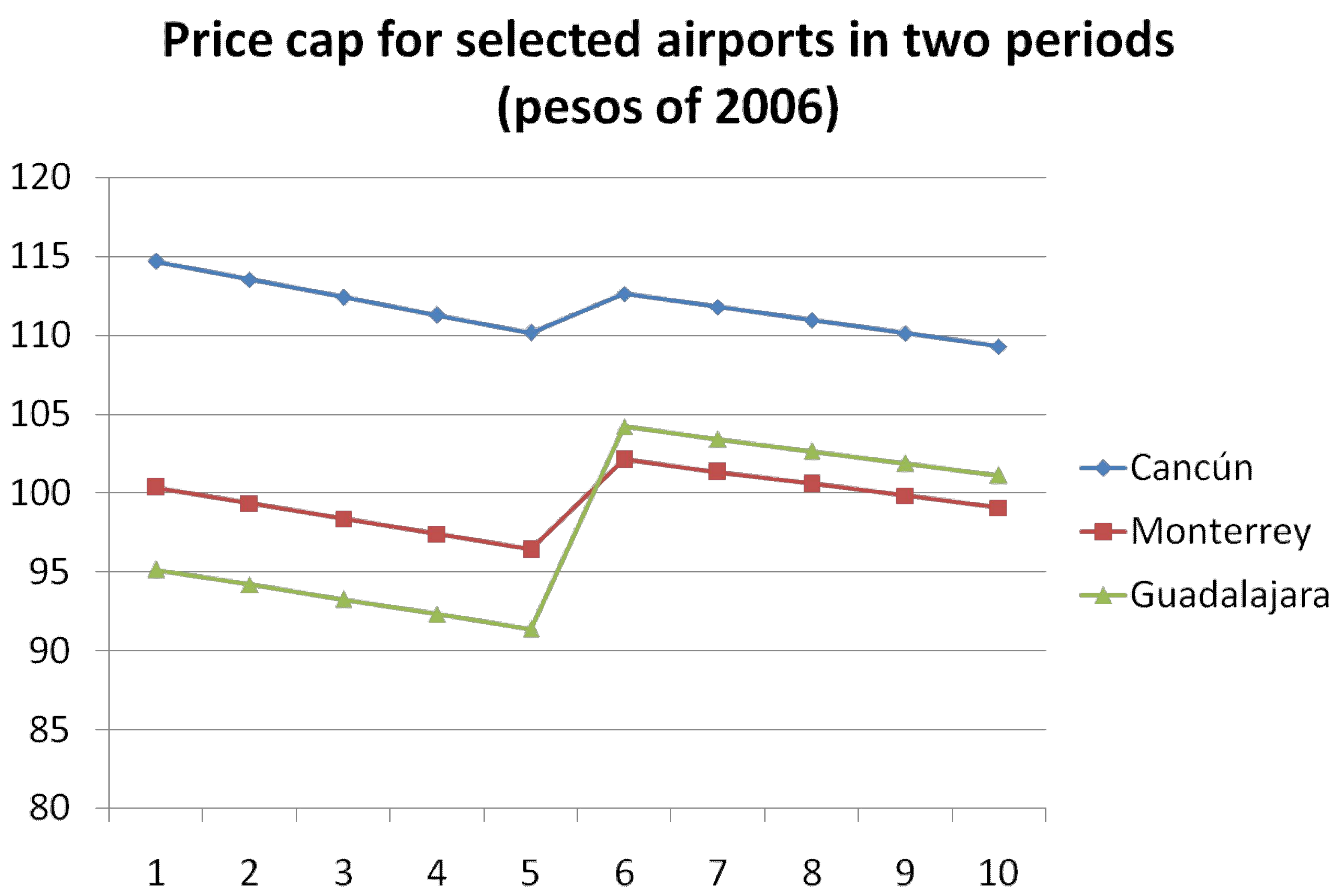
- Highest bidder as criteria.
- Critical variable for tender was the Reference Value, basically a “promise” to receive a certain discounted cash flow during the lifetime of the concession.
- The Reference Value is not related to physical assets or other variable in the accounting books.
  - There is no equivalent to the UK’s regulatory asset base.
- The Reference Value was chosen to maximize government revenues.
- Most airports have market power. Government extracted monopoly rents through the bidding process(ex-ante competition).

| Initial Reference Value and Value Paid (Pesos) | | | |
|---|---|---|---|
| | Reference value (1) | Paid (2) | Ratio (2)/(1) |
| Sureste | 4,302 | 7,740 | 1.8 |
| Pacifico | 4,758 | 16,353 | 3.4 |
| Centro-Norte | 3,312 | 5,760 | 1.7 |

The difference between the Reference Value and the amount actually paid can be explained in part by commercial services.

# Ineffectiveness of efficiency factor

- 31 of 34 airports experienced and increase in the price cap the year following the revision (a “jump”)
- 24 of 34 airports have a larger average price cap in the second period than the first period, in real terms.
- Effectiveness of productivity factor should reflect in decreasing prices. The jump is a design issue that will not go away.



Price cap for selected airports in two periods
(pesos of 2006)
120
115
110
105
100
95
90
85
80
1
2
3
4
5
6
7
8
9
10
Cancún
Monterrey
Guadalajara

# Price cap determination

$$NPV_0 = TV_{15} + \sum_{n=1}^{15} \left[ \left( \left( TM_n \times UT_n \right) - E_n \right) \div \left( 1 + r \right)^n \right]$$

| | |
|---|---|
| NPV | Net present value of the cash flow of the regulated business, before taxes (Reference value). |
| TV | Terminal value. |
| TM | Maximum joint price. |
| UT | Units of traffic. |
| E | Expenditures related to the regulated business, without depreciation or amortization, plus all investments. |
| r | Rate of return. |
| n | Index. |

$$TV=\left(\sum_{i=1}^{REM} NCF\times(1+g)^{i}\times(1+r)^{-i}\right)\div(1+r)^{15}$$

| | |
|---|---|
| TV | Terminal value. |
| REM | Years remaining in the concession |
| NCF | Cash flow corresponding to the last year of explicit projection, normalizing for non-recurring investments |
| g | Average growth rate in units of traffic corresponding to the last 5 years of explicit projections. |

# Process of determination

- Reference value (given).
- Explicit projections of traffic, expenditures and investments for the next 15 years (MDP).
- Implicit projections for all the years until the concession ends.
- Estimation of rate of return (calculated).
- Assume TM constant.
- Solve for TM, get a new Reference Value to do the exercise again in 5 years.

# Issues in price cap determination

- Information intensive.
- Sensitivity to projection errors is large.
- Economic interpretation is difficult.
  - Not linked to accounting books, valuation is difficult.
- Not tax neutral.
- No rescue value. Users will probably pay concession more than once (highway example).

# Price may need strong adjustment

- Payment profile is difficult to assess.
- Paying reference value with more reference value has limits.
  - Airport with looses have this problem aggravated.

# Price regulation lessons

- Balance users and government needs.
  - Airports are long term competitiveness factors.
- Keep it as simple as possible.
- Learn from others.
- Be flexible.

# Overall lessons

## Airport concessioning is a long term process

- Define long term objectives, put user at center stage.
- Define steps to get there.

## Introduce competition where possible

- Few but relevant.  In and between airports.
- Anticipate them from the beginning.

## Changes to concession regime will be needed

- Expect changes and prepare for them.
- Introduce flexibility.

Tanks.