

AVIATION: PANORAMA

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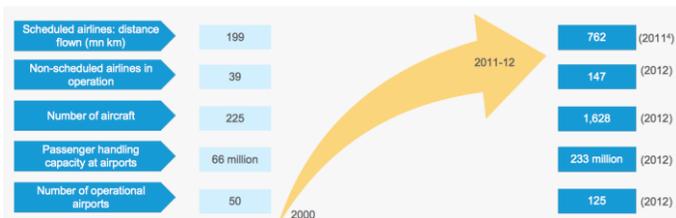
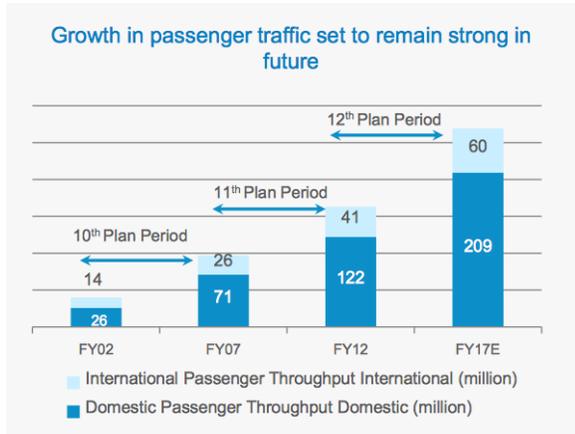
ABSTRACT:

The civil aviation sector is a fast growing market in India and is predicted to continue expanding also in the future. Players in the market are different and after the entrance of low cost companies, air transportation has been considered also as an internal mean of transportation.

INTRODUCTION

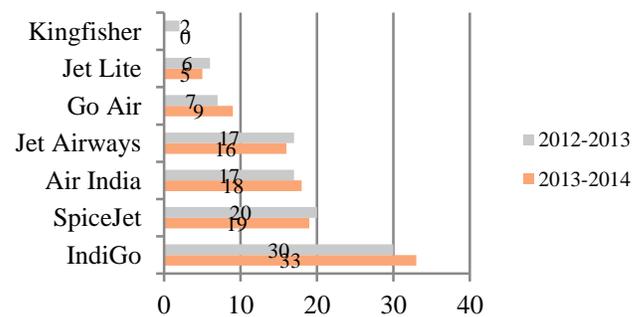
The airlines industry encompasses air passenger transportation (both scheduled and chartered), but ignores air freight transport. The volumes of the industry are defined on the basis of the number of passengers' departures.

The following graphs give the basic numbers related to India's aviation sector.



(Source: IBEF report)

Domestic market share (based on pax-Km)



INDUSTRY STRUCTURE

Buyer power (strong):

- Buyers' sensitivity to price is very high, especially due to the presence of online price comparison sites, corporate travel expense policies for business flyers and competition from low-cost operators.
- Airlines have tried to differentiate themselves in different ways. A common practice is providing additional comforts (e.g. extra space for leg) at additional cost.
- Negligible switching cost strengthens buyer power.

Supplier power (strong):

- Boeing and Airbus form a duopoly of suppliers, especially in the large jetliner category.
- In lower-capacity regional jets and propeller-driven aircraft,

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companies like Embraer, ATR, and Bombardier have also a significant role.

- To decrease suppliers’ power, airlines tend to form alliances with one another, not only in order to get network size economies, but also to have scale economies in fuel and aircrafts’ purchase.

New entrants (moderate):

- The entrance barriers are relatively high especially due to scale economies, which translate also in the ability to supply a wide range of routes.
- CAGR in the last years was high, but is expected to decelerate, which may turn to dissuade new entrants.
- Fuel prices’ fluctuation creates uncertainty in terms of margins achievable, thus further discouraging new players.
- Airline cabotage (provision of domestic transport services in a country by companies based in a different country) is generally forbidden in India making the domestic segment essentially restricted to Indian carriers.

Threat of substitutes (moderate):

- Substitutes are road, rail and marine travel.
- Much of the domestic airline industry connects a small number of major cities, making land transportation a very beneficial alternative to access regions poorly connected by air.
- Indian train network in is large and low cost compared to many air fares, with a wide range of classes.

Degree of rivalry (strong):

- Presence of low-cost operators increases rivalry.
- In this market it is fundamental the maximization of the number of seats sold, leading to the practice of “overbooking”.

REVENUE AND COST DRIVERS

While basic cost and revenue drivers are relevant for all kinds of airlines, airlines must choose to become majorly cost driven (no-frills) or revenue driven (luxury) airlines. The major cost and revenue drivers behind any airlines are as follows:

GROWTH DRIVERS

By 2020, air traffic in India is projected to grow 3.5 times making it the third-largest market in the world, behind the US and China. The main drivers for the growth of Indian civil aviation sector are:

1. High GDP growth in India.

Increase in inbound and outbound tourists, and in medical tourism; disposable incomes expected to increase at an average of 8.5% per annum until 2015.

2. Emergence of low-cost airlines.

The organized retail boom that would require timely delivery of goods, thus contributing to the growth of the air cargo segment.

3. Modernization and setting up new airports across the country.

4. Providing international airport status to major Tier-I and Tier-II cities.

Open sky policy and permission to private operators to operate on international sectors.

5. Encouraging private investments in airlines and airport infrastructure.

6. Facilitative foreign direct investment norms.

Revenue Drivers

Cost Drivers

- Average price per mile per passenger that an airline can charge
- An indicator of revenue efficiency

Luxury carriers have consistently been able to charge a higher price than low-cost carriers, for higher revenue per RPM.

- Number of occupied seats / Total number of seats flown
- Captures efficiency of fixed assets when flying

The load factor indicates how full planes are in flight, but it does not capture how much time they actually spend flying every day.

- Average distance of flight per leg of travel

Longer flight stages

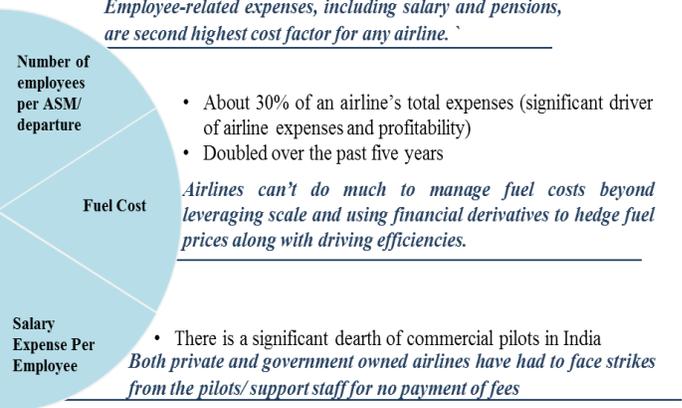
- ✓ lessen the overhead impact of takeoffs & landings
- ✓ reduce delay induced exposure to cascading network disruptions
- ✓ more profitable and drive airline revenues to a large extent

- Number of employees at the airline per seat mile flown
- Measures labor productivity at an airline

Employee-related expenses, including salary and pensions, are second highest cost factor for any airline.

- About 30% of an airline’s total expenses (significant driver of airline expenses and profitability)
- Doubled over the past five years

Airlines can’t do much to manage fuel costs beyond leveraging scale and using financial derivatives to hedge fuel prices along with driving efficiencies.



- There is a significant dearth of commercial pilots in India
- Both private and government owned airlines have had to face strikes from the pilots/ support staff for no payment of fees*

Liberal bilateral service agreements and emphasis on development through public-private partnership (PPP) mode, etc.

Immense growth potential exists in Tier-II and Tier-III markets with airlines on an expansion spree in these markets. The AAI is upgrading and modernizing 35 non-metro airports in the country at an estimated cost of around USD 1 billion, as well as modernizing the Chennai and Kolkata airports.

ENVIRONMENTAL IMPACT OF AVIATION

Aviation has an impact on the environment due both to the noise and the emission of particulates and gases. Despite technological advances, the greenhouse gas emissions from aircrafts have increased by 87 % in the European Union between 1990 and 2006.

Total Climate Effects of Aviation and Future of Environmental Impact

The Intergovernmental Panel on Climate Change (IPCC) has estimated the total impact of aviation to be around 3.5% of anthropogenic climate change, including the impact of CO₂ as well as non-CO₂ effects. The IPCC has also produced a central estimate of the total contribution of aviation in 2050 to be at around 5%. An increase in the number of passengers undertaking air travel offsets the efficiency improvements due to advancement in aircraft technology, leading to a higher contribution in the future.

Methods of Mitigating Environmental Impact

Increase in Fuel Efficiency

Fuel consumption accounts for an airline’s 31% of operating

costs, and thus is the most economical way of reducing environmental impact. Over the last 40 years, commercial aircrafts have become 70% more fuel-efficient and are expected to be 25% more fuel efficient than today in 2025. The next generation aircraft, including Boeing 787 *Dreamliner* and Airbus 350 are 20% more efficient than the current aircrafts’ generation.

Route Optimization

A reduction in the number of unnecessary detours taken by planes can be achieved through the use of a better Air Traffic Management System. The ATMS would generate an optimized combination of direct routes and cruising altitude to obtain up to 18% savings. The ‘Single European Sky’ is an initiative by the European Commission that plans to achieve better use of the European airspace; but is yet to be successfully implemented.

Other Measures

- Use of biofuels can help offset the release of CO₂.
- Improved operating procedures like a Continuous Descent Approach, a single engine taxi, slower cruising speeds etc. can contribute to emissions’ reduction.
- The European Union Emissions Trading Scheme.

Greenhouse Gas Emissions per Passenger Kilometer

The emissions from aircraft on a passenger kilometer basis depend on the length of the journey, the type of aircraft, number of stops, the number of passengers on board and the altitude of flight. Considering all the factors, the total CO₂ equivalent emissions from flights range between 113g/km to about 260g/km. These emissions are comparable to a 4-seater car with one person on board.

TRENDS IN THE AVIATION INDUSTRY



References:

1. www.ibef.org
2. www.marketline.com