RESEARCH ARTICLE

A DISSECT OF INDIAN AIRPORT

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ARTICLE INFO	ABSTRACT
	This study attempts to explore and focuses the framework for developing categories of an *Airports in India*. The airport is the gateway of any country. India's aviation sector has undergone rapid transformation since the liberalization drive that began in 2003. The country has one state-owned airline, Air India, and eight private airline groups, which between them carried just over 70 million domestic and 17 million international passengers in 2014/15. Total passenger numbers handled at Indian airports were 190 million, making it one of the ten largest markets globally. Strong GDP growth, a young population and the expansion of India's vibrant middle class is expected to see India achieve some of the fastest growth of any aviation market in the world over the next 20 years.

INTRODUCTION

History

Indian Aviation Industry is one of the fastest growing airline industries in the world. The history of Indian Aviation Industry started in December 1912 with its first domestic air route between Karachi and Delhi. It was opened by the Indian Air Services in collaboration with the UK based Imperial Airways as an extension of London-Karachi flight of the Imperial Airways. Tata Sons Ltd., the first Indian airline, started a regular airmail service between Karachi and Madras three years later without any backing from the Indian government. During the period of independence, 9 air transport companies were carrying both air cargo and passengers in the Indian Territory. In 1948, the Indian Government and Air India set up a joint sector company, Air India International to further strengthen the Aviation Industry of India. As part of nationalization in 1953 of Indian Airlines (IA) brought the domestic civil aviation sector under the purview of Indian Government. Later till the mid 1990's government-owned airlines dominated Indian aviation industry. When the government adopted the Open-sky policy in 1990 and other liberalization policies the Indian Aviation Indian made underwent a rapid and dramatic transformation.

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By the year 2000 several private airlines have entered into the aviation business in succession and many more were about to enter into the arena. Indian aviation industry today is dominated by private airlines and low-cost carriers like Deccan Airlines, GoAir, and SpiceJet, etc. And Indian Airlines, the giant of Indian air travel industry, gradually lost its market share to these private airlines. According to the report of CAPA, these budget carriers are likely to double their market share by 2010 -- one of the highest in the world.

Brief Introduction

Indian Aviation Industry has been one of the fastest-growing aviation industries in the world with private airlines accounting for more than 75 % of the sector of the domestic aviation market. With a compound annual growth rate (CAGR) of 18 % and 454 airports and airstrips in place in the country, of which 16 are designated as international airports, it has been stated that the aviation sector will witness revival by 2011. In 2009 with increase in traffic movement and increase in revenues by almost US$ 21.4 million, the Airports Authority of India seems set to accrue better margins in 2009-10, as per the latest estimates released by the Ministry of Civil Aviation. This is being primarily attributed because of the increase in the share of revenue from Delhi International Airport Limited (DIAL) and Mumbai International Airport Limited (MIAL). Passengers carried by Indian domestic airlines from January-February 2010 stood at 8,056,000 as against 6,761,000 in the

corresponding period of 2009-a growth of 19.2 %, according to a report released by the Ministry of Civil Aviation.

Size of theIndustry	There are about 450 airports and 1091 registered aircrafts in India Today
Geographicaldistribution	Mumbai, Kolkata, Hyderabad, Delhi, Pune, Bangalore, Chennai
Output per annum	Growth rate of 18% per annum

Also Hyderabad International Airport has been ranked amongst the world's top five in the annual Airport Service Quality (ASQ) passenger survey along with airports at Seoul, Singapore, Hong Kong and Beijing. This airport in Hyderabad is managed by a public-private joint venture consisting of the GMR Group, Malaysia Airports Holdings Berhad and both the State Government of Andhra Pradesh and the Airports Authority of India (AAI).

The Indian aviation sector can be broadly divided into the following main categories:

1. Scheduled air transport service includes domestic and international airlines.
2. Non-scheduled air transport service consists of charter operators and air taxi operators.
3. Air cargo service, which includes air transportation of cargo and mail.

Scheduled air transport service: It is an air transport service undertaken between two or more places and operated according to a published timetable. It includes:

1. Domestic airlines, which provide scheduled flights within India and to select international destinations. Air Deccan, Spice Jet, Kingfisher Airline and IndiGo are some of the domestic players in the industry.

2. International airlines operate from scheduled international air services to and from India.

Non-scheduled air transport service: It is an air transport service other than the scheduled one and may be on charter basis and/or non-scheduled basis. The operator is not permitted to publish time schedule and issue tickets to passengers.

Air cargo services: It is an air transportation of cargo and mail. It may be on scheduled or non-scheduled basis. These operations are to destinations within India. For operation outside India, the operator has to take specific permission of Directorate General of Civil Aviation demonstrating his capacity for conducting such an operation.

Size of the Industry

India is one of the fastest growing aviation markets in the world. A total of 127 airports in the country, which include 13 international airports, 7 custom airports, 80 domestic airports and 28 civil enclaves are managed by The Airport Authority of India (AAI). There are about 450 airports and 1091 registered aircrafts in India today.

Top Leading Companies

Players in Indian aviation industry can be classified into three groups:

- Public players
- Private players
- Start up players

There are three public players: Air India, Indian Airlines and Alliance Air. The private players include Jet Airways, Air Sahara, Paramount airways, Go Air Airlines, Kingfisher Airlines, Spice Jet, Air Deccan and many more. The start up players is those which are planning to enter into the markets. Some of them are Omega Air, Magic Air, Premier Star Air and MDLR Airlines. A tree cannot make a forest, so says an adage. Thus the economy of a nation depends on some sector like the agricultural sector, the health sector, the works and housing sector and most importantly, the Airport, banking sector among others. All these sectors work together and integrate to make the life of a nation. A breakdown in any of these sectors will definitely have untold effects on the progress and success of the nation. The airline industry is important for the global economy. Airports, in particular hub airports, are the backbone of air transportation. Transportation plays a vital role in the changing global economy, linking people and places, facilitating trade and tourism, and encouraging economic competition and specialization. The aviation system offers one of the most significant engines for national economic growth. If managed well, this economic advantage will become ever more important as there is continued movement toward a global economy dominated by services and lighter, high-value manufacturing The airport forms a vital part in the aviation system, because, at this point in the system, the mode of transport changes from the air mode to land mode. Therefore, it is the point of interaction of the three major components of the air transport system: The airport (with related air traffic control), the airline and the user. Aviation is a spatial activity concerned with supplying a transport service: a derived demand arising from the need to match the production of goods and service with their points of consumption. Aviation

is a good example of rapid technological change and the airports that serve it are key elements in its development. Aviation is a challenging field in the age when ùformation becomes readily available arid concepts and techniques to use it proliferate. In particular, we are p1annin in an era when what happens tomorrow needs not resemble today. Yet we often have only today upon which to build our models, and so have to make assumptions that are vulnerable Air travel is growing at a rate that outstrips the capacity of the airport and air traffic control system. Resulting in mounting congestion and delay. The consequences for the air transport industiy and the travelling public are higher cost, greater inconvenience, declining quality of service, and possibly diminished safety. The adequacy of airport and airway infrastnicture to serve ftiture air travel demand is paramount. This infrastructure needs to be properly conceived, planned, expanded, and managed, so as to support a volume of traffic far greater than we have today. Ifnot, congestion and delay in the aviation system will be a constraint on growth that will profoundly affect the society in the next millennium.

India's first civil aviation airport, now known as the Juhu aerodrome, is located just ahead of the Nanavati Hospital on one of suburban Mumbai's arterial roads.When it first opened its gates in 1928, it was known as the Vile Parle Flying Club. The first civil flight that took off from this airport was fittingly piloted by J R D Tata, the father of Indian civil aviation.The flight, part of the Tata Aviation Service, the forerunner to Tata Airlines and Air India, departed from the Drigh Road airstrip, Karachi, on October 15, 1932. After a stopover at Ahmedabad, it landed at the Juhu Aerodrome to complete India's first civil flight. Juhu Aerodrome served as the city's sole airport for 26 years. Today, the aerodrome, which has one runway, hosts a flying club and a heliport. It is occasionally used for shoots by the Mumbai film industry. The Government of India constituted the International Airports Authority of India (IAAI) in 1972 to manage the nation's international airports while the National Airports Authority (NAA) was constituted in 1986 to look after domestic airports.[1][2] The organisations were merged in April 1995 by an Act of Parliament and was named as Airports Authority of India (AAI). This new organisation was to be responsible for creating, upgrading, maintaining and managing civil aviation infrastructure both on the ground and air space in the country.

Role of Airport Infrastructure in National Economy

1. Airports also represent a country's window on the world. Passengers form their first impressions about a nation from the state of its airports. They can be effectively used as symbols of national pride, if we pay sufficient attention to their quality and maintenance.
2. In many remote, hilly and inaccessible areas of the country, air transport is the quickest and sometimes the only mode of travel available. This is especially true of sensitive regions on the borders with our neighbours in the west, north and north-east.
3. Airports need to be integrated with other modes of transport like Railways and Highways, enabling seamless transportation to all parts of the country.

Objectives of Policy

1. To provide a boost to international trade and tourism and enhance the country's image in the community of nations;

2. To provide airport capacity ahead of demand, in order to handle an increasing volume of air traffic and to garner the maximum share of traffic in the region;
3. To enhance airport facilities to make the airport user friendly and achieve higher level of customer satisfaction.
4. To ensure total safety and security of aircraft operations by the introduction of state-of-art air traffic, security and related services;
5. To provide multi-modal linkages;
6. To provide a market orientation to the present structure, bridge the resource gap and encourage greater efficiency and enterprise in the operation of airports, through the introduction of private capital and management skills;
7. To foster the development of a strong airport infrastructure, maintaining a balance between the need for economic viability and the objective of equitable regional dispersal of infrastructural facilities;
8. In the achievement of the above objective, to lay special emphasis on the development of infrastructure for remote and inaccessible areas, especially the North East, the hilly and island regions; and
9. To encourage transparency and clarity in the decision-making processes of Government and its public sector units. Policy has necessarily to change in response to a rapidly transforming global scenario, although the process of transformation has to be progressive, orderly and safeguarded. Looking at what has been achieved in other countries, there is a wide gap which needs to be bridged first.

Overview

1.1 Air Traffic: The Airport Authority of India (AAI) manages total 125 Airports in the country, which include 11 International Airports, 94 domestic airports and 28 civil enclaves. Top 5 airports in the country handle 70% of the passenger traffic of which Delhi and Mumbai together alone account for 50%. Passenger and cargo traffic has growth at an average of about 9% over the last 10 years.

1.2 Growth: Estimated domestic passenger segment growth is at 12% per annum. Anticipated growth for International passenger segment is 7% while the growth for International Cargo is likely to grow at a healthy rate of 12%.

1.3 Privatization: Privatization of International Airports is in offing through Joint Venture route. Three Greenfield airports are getting developed at Kochi, Hyderabad and Bangalore with major shareholding of private sector. The work on Bangalore airport is likely to commence shortly. Few selected non-metro airports are likely to be privatized.100% foreign equity has also been allowed in construction and maintenance of airports with selective approval from Foreign Investment Promotion Board.

1.4 Air movements: The total aircraft movements handled in October 2003 has shown an increase of 15.4 percent as compared to the aircraft movement handled in October 2002. The international and domestic aircraft movements increased by 15.4 percent each during the period under review. The reason for increase in aircraft movements is due to increase of operation of smaller aircraft by airlines and the introduction of new airlines viz., Air Deccan in southern

region and international airlines (Air Canada, Polar Air Cargo, Qatar Airways (Freighter), Turkish Airways, Air Slovakia at IGI Airport with effect from October 2003.

1.5 Passenger Traffic: International and Domestic passenger traffic handled in October 2003 has increased by 15.4 percent and 6.7 percent over the period of October 2002 leading to an overall increase of 9.4 percent. The total passenger increased by 9.2 percent, 7.6 percent, 8.9 percent and 17.0 percent respectively at five international airports six developing international airports, eight custom airports and 26 Domestic airports.

1.6 Cargo Traffic: The total cargo traffic handled in October 2003 has shown an increase of 3.5 percent as compared to the cargo handled in October 202. The international and domestic cargo traffic increased by 4.3 percent and 2.1 percent respectively during the period.

Open skies policy

1. Need for Open Skies Policy

A recurring demand often voiced by interested parties is that, in order to promote Travel & Tourism, India should adopt an Open Skies policy. It is argued that the current policy restricts the access of foreign airlines. As a result potential tourists are not offered a choice of airlines or seats when travelling to India. This problem is exacerbated during the holiday season when it is difficult, if not impossible, to get a seat either into the country or out of it. It is argued, therefore, that India should adopt an Open Skies approach to any foreign carrier wanting to fly into India, which literally means allowing them unlimited service, capacity and points of call.

2. Meaning of 'Open Skies'

At the outset we must point out that the concept of 'Open Skies' is much misunderstood in its meaning and implications. Strictly speaking Open Skies means unrestricted access by any carrier into the sovereign territory of a country without any written agreement specifying capacity, ports of call or schedule of services. In other words an Open Skies policy would allow the foreign airline of any country or ownership to land at any port on any number of occasions and with unlimited seat capacity. There would be no restriction on the type of aircraft used, no demand for certification, no regularity of service and no need to specify at which airports they would land. Defined in this manner, it is not surprising that Open Skies policies are adopted only by a handful of countries, most commonly those that have no national carriers of their own and that have only one or two airports. No sovereign country of any eminence practices Open Skies least of all the European Union, UK, USA, Japan, Australia or countries in South East Asia.

3. Bilateral Treaties

However, almost 99 per cent of Members of the International Civil Aviation Organization (ICAO) follow the system of negotiated bilateral treaties determining the aviation relations between two sovereign Contracting parties. In fact, the bilateral aviation regime is considered the fundamental basis for a disciplined and regulated aviation system between the nations of the world. It provides not only regularity of operations through scheduled services but also stipulates the

basis of ownership, number of seats to be utilized, type and certification of aircraft and visiting ports of call. The Bilateral Agreements also protect the different kinds of aviation Freedoms granted to contracting parties by specifying the reciprocal rights to be enjoyed by each.

4. Indian Bilateral Treaties

India has signed over 180 Bilateral Agreements with different countries. In 2002 the total number of seats available was 38.09 million. Of this, the capacity operated was approximately 19.174 million seats. Since the average size of traffic to and from the country is slightly in excess of approximately 14 million passengers, normally the contracted rights should suffice the traffic demand.

5. Utilization of Bilateral Treaty Contracts

It is in the actual utilization of the contracted seats that the problem arises. Of the contracted amount, 50 per cent are to be utilized by the national carrier and 50 per cent by the airline owned by the contracting country. However, whilst the foreign carriers are in a position to use over 70 per cent of their entitlement, the national carrier is only able to utilize 29.4 per cent of their share. It is this shortfall that creates pressure on seats, particularly during peak tourism national carriers do not have sufficient aircrafts to be able to utilize the bilateral rights available to the country and enter into commercial and code sharing arrangements to maximize revenue. Whilst this does improve their profitability in the short run, it has a long-term adverse effect in that it deprives the country of much needed air bridges to bring in tourists and carry trade. Under the present bilateral system, the utilization of the traffic rights on international routes to and from India, as negotiated by the Government of India, is restricted to the two Government owned 'national' carriers - namely Air India and Indian Airlines and either or both these carriers are the Indian designated carriers under the various Air services Agreements. The Operating Permits restrict the privately owned carriers, such as Jet Airways and Air Sahara, to operate only domestic routes within India.

Civil Aviation Policy in India

In the context of a multiplicity of airlines, airport operators (including private sector), and the possibility of oligopolistic practices, there is a need for an autonomous regulatory authority which could work as a watchdog, as well as a facilitator for the sector, prescribe and enforce minimum standards for all agencies, settle disputes with regard to abuse of monopoly and ensure level playing field for all agencies. The CAA was commissioned to maintain a competitive civil aviation environment which ensures safety and security in accordance with international standards, promotes efficient, cost-effective and orderly growth of air transport and contributes to social and economic development of the country.

1. Objectives of Civil Aviation Ministry

a) To ensure aviation safety, security
b) Effective regulation of air transport in the country in the liberalized environment
c) Safe, efficient, reliable and widespread quality air transport services are provided at reasonable prices

d) Flexibility to adapt to changing needs and circumstances
e) To provide all players a level-playing field
f) Encourage Private participation
g) Encourage Trade, tourism and overall economic activity and growth
h) Security of civil aviation operations is ensured through appropriate systems, policies, and practices

2. Private Sector Participation and the Civil Aviation Policy

- Private sector participation will be a major thrust area in the civil aviation sector for promoting investment, improving quality and efficiency and increasing competition.
- Competitive regulatory framework with minimal controls encourages entry and operation of private airlines/ airports.
- Encouragement of private sector investment in the construction, upgradation and operation of new and existing airports including cargo related infrastructure.
- Rationalization of various charges and price of ATF/AVGas will be undertaken to render operation of smaller aircraft viable so as to encourage major investment in feeder and regional air services by the private sector.
- Training Institutes for pilots, flight engineers, maintenance personnel, air-traffic controller, and security will be encouraged in private sector.
- Private sector investment in non-aeronautical activities like shopping complex, golf course, Entertainment Park, aero-sports etc. near airports will be encouraged to increase revenue, improve viability of airports and to promote tourism. CAA will ensure that this is not at the cost of primary aeronautical functions, and is consistent with the security requirements.
- Government will gradually reduce its equity in PSUs in the sector.
- Government will encourage employee participation through issue of shares and ESOP.

3. Security

Strict national civil aviation security programme to safeguard civil aviation operations against acts of unlawful interference have to be established through regulations, practices and procedures, which take account of the safety, regularity and efficiency of flights. A good safety record is a judgment of past performance but does not guarantee the future, although it is a useful indicator. While pilot error is said to be on the decline, factors of fatigue, weather, congestion and automated systems have complicated safety. Airline operators, pilots, mechanics, flight attendants, government regulators and makers all have a stake in making aviation as safe as possible. The International Air Transport Association (IATA), the International Civil Aviation Organization (ICAO), manufacturers and others bodies cooperate in this aim. As world air traffic is expected to double or more by 2020, the accident rate must be reduced in order to avoid major accidents occurring more frequently around the globe.

4. Maintenance

- Private sector participation is encouraged in existing maintenance infrastructure of Indian Airlines and Air India like Jet Engine Overhaul Complex (JEOC) and new maintenance facilities including engine overhaul and repairs with up to 100 % foreign equity.
- Indian Airlines has major maintenance facilities for all the types of aircraft in IAL fleet i.e. Airbus-300, Airbus-320, Boeing-737 and Dornier-228. The Engineering Department is responsible for maintenance of aircraft and is answerable to Director General of Civil Aviation (DGCA) in maintaining the Quality Control. The Maintenance of the aircraft is carried out at four major bases located at Delhi, Mumbai, Calcutta and Hyderabad.
- Sahara also has its own NDT Shops, wheels and brake assembly shop, battery charging shop, avionics shop and seat repair shop. It is the only private domestic airline to have its own hangar for aircraft maintenance. It is also the only private domestic airline to have self maintenance capability.
- Air Deccan, Bangalore-based airline, has decided to set up its engineering and maintenance facility for Airbus-320 operations, basing two of a fleet of 11 Airbus jets here. They have also sought land from the Airports Authority of India to build an exclusive hangar to carry out 300 and 500-hour checks, apart from C-Checks and line maintenance. Airport

Infrastructure

In India, airports were totally owned and managed by central government or the armed forces. The Airport Authority of India (AAI), a body functioning under the Ministry of Civil Aviation was responsible for managing the airports in India. It owns 125 airports, 68 of which are operational. The breakdown is as follows:

- 18 international
- 78 Domestic Airports
- 27 civil enclaves at defence airfields.
- 07 Customs Airports

The AAI operate most aspects of the airport (including air traffic control) and procure most of their equipment directly (via global/local tenders). India's airports handle 42 million passengers, of which the four Metro gateway airports (Delhi, Mumbai, Kolkata and Chennai) account for 47% of revenue and 66% of the passengers. Until 2000, there were five major international airports, - Mumbai, Kolkata, Delhi, Chennai and Trivandrum. But the GoI announced a further six airports including Amritsar, Bangalore, Hyderabad, Cochin during the course of 2002. According to projections, Indian air passenger traffic was estimated to grow to 100 million passengers by 2012 from 36.98 million in 1998-99. Growth projections in the cargo front were also promising. Airport infrastructure is linked to development of India's international competitiveness and her ability to attract foreign investments. The policy opened the doors of private investment in this sector, including investments from foreign airport authorities. During the month of October 2003, 5346 thousand aircraft movements (excludes defence & other non-commercial movements), 40.33 lakh passengers and 88.59 thousand tones of cargo were handled at all the airports taken together. A basic timeline of some major events and developments in aviation, particularly those that apply to the development of air traffic control. From the early days, when WWI pilots carried radios into the cockpit to talk

to the ground, through the days when the extent of air traffic control was a line of rotating beacons to help pilots navigate, to the time right before the development of Mode S, this timeline gives an interesting look at how things progressed.

- 1901 - First transatlantic radio transmission
- 1903 - Orville and Wilbur Wright take historic first 120-foot, 12 second flight at Kitty Hawk, NC
- 1914 - first scheduled air service in Florida. Airplane held one passenger, ran twice a day. Company folded within 4 months.
- World War I - first real widespread need for aviation. Demand soars, production increases. Pilots begin taking radios into planes to communicate with people on the ground.
- 1917 - Air mail (first large commercial use of aviation) begun as an experimental service, conducted jointly by Army and Post Office between Washington and New York.
- 1920's - Airlines use radio to transmit weather information to pilots so they can avoid storms.
- 1920 - first transcontinental air service completed. Airplanes still could not fly at night.
- 1921 - Army deployed rotating beacons in a line between Columbus and Dayton, OH. Beacons were visible to pilots and allowed them to fly that route at night.
- 1923 - Post Office takes over this guidance system, and constructed another line that soon extended coast-to-coast.
- 1925 - Contract Air Mail Act - moved airmail service to private sector, the beginning of the creation of a private US airline industry.
- 1925 - Calvin Coolidge appoints a board to recommend a national aviation policy. Key recommendation: government should set standards for civil aviation, outside of the military.
- 1926 - Air Commerce Act - authorized Secretary of Commerce to designate air routes, develop air navigation systems, license pilots and aircraft, and investigate accidents.
- 1927 - Charles Lindbergh's first transatlantic flight - navigation by dead reckoning.
- 1932 - Department of Commerce constructed 83 radio beacons as an aid to navigation during poor visibility. Radio beacons automatically transmitted directional beams that pilots can follow to their destination. Also deployed marker beacons to mark airports in poor visibility conditions.
- 1935 - First air traffic control tower established at the Newark International Airport in New Jersey.
- 1938 - Civil Aeronautics Act - creates the Civil Aeronautics Authority (CAA) as centralized agency to preserve order in aviation industry. Air Safety Board created to regulate carriers on matters of safety.
- 1940 - Safety regulation transferred to CAA, which is renamed the Civil Aeronautics Board (CAB).
- World War II - great boom in demand for aviation. British working on early detection of enemy aircraft, developed radar. Americans devloped IFF (Identify Friend or Foe) to distinguish between enemy and Allied aircraft, installing transponders above Allied aircraft that would signal their identity to radar operators First

move from navigation to surveillance for air traffic control.

- 1940 - British has line of radar receivers along east coast to detect German aircraft when they took off from the Continent.
- 1956 - Two aircraft collide over Grand Canyon, killing 128 people.
- 1958 - Federal Aviation Act - created Federal Aviation Agency, charged with establishing and running a broad air traffic control system to maintain safe separation of all commercial aircraft though all phases of flight. Also assumed jurisdiction over all other aviation safety matters. CAB retained jurisdiction over economic matters.
- 1967 - Department of Transportation formed, took over the FAA, renaming it the Federal Aviation Administration.

100 Years of Civil Aviation in India – Milestones

On 18 February, 1911 the first commercial civil aviation flight took place in India between Allahabad and Naini, a distance of 6 miles when Henri Piquet carried 6500 mails on a Humber biplane. This is considered to be the world's first airmail service and the beginning of civil aviation in India.

In December 1912, the Indian State Air Services in collaboration with UK based Imperial Airways introduced the London-Karachi-Delhi flight, the first International flight to and from India

- In 1915 Tata Sons Ltd. started regular air mail services between Karachi and Madras and on January 24, 1920 Royal Airforce started regular airmail services between Karachi and Bombay.
- Construction of Civil Airports in India started in 1924. Constructions began in Calcutta at Dum Dum, Allahabad at Bamrauli and in Bombay in Gilbert Hill.
- April 1927 saw the setting up of a separate Department of Civil Aviation to look after all civil aviation matters. That year also saw the establishment of Aero Club of India.
- In February 1929, JRD Tata was awarded the first pilot license by Federation Aeronautique International on behalf of the Aero Club of India and Burma. The same year Aga Khan announced a solo air race between London and Bombay. There were three participants - JRD Tata, Man Mohan Singh and Aspy Merchant. The race was won by Man Mohan Singh.
- Lt.Col. Shelmerdine was appointed first Director general of Civil Aviation (DGCA) in 1931 to look after civil aviation regulatory issues.
- In 1932 Tata Airlines came to being as a division of Tata Sons Limited. It started Air Mail services on the Karachi, Ahmedabad, Bombay, Bellary, Madras routes on 15 October. The same year, 1932 also saw the first Indian woman, Urmila K. Parikh get a pilot's license.
- Between 1933 and 1934 a number of Indian airlines – Indian Trans Continental Airways, Madras Air Taxi Services, Indian National Airways etc., commenced operations.
- The Indian Aircraft Act was promulgated in 1934 and was formulated in 1937.

- Hindustan Aeronautics Limited (HAL) set up by Walchand Hirachand in association with the then Mysore Government in 1940 at Bangalore.
- India's first aircraft, the Harlow trainer was rolled out for test flight in July 1941.
- In 1945 the Deccan Airways was founded - jointly owned by the Nizam of Hyderabad and Tatas. Its first flight began in July 1946. In 1946 'Air India' came into being when Tata Airlines changed its name to Air India.
- ☐In 1948 Air India signed an agreement with the Government to operate international services under the name Air India International Ltd. On June 8 the same year Air India inaugurated its international services with a weekly flight between Bombay and London via Cairo and Geneva.
- In 1948 Prem Mathur became the first woman commercial pilot and started flying for Deccan Airways. She obtained her commercial pilot's license in 1947.
- In March 1953 the Indian Parliament passed the Air Corporations Act, and Indian Airlines and Air India International were set up after nationalisation of the entire airline industry. At this time eight formerly independent domestic airlines: Deccan Airways, Airways India, Bharat Airways, Himalyan Aviation, Kalinga Air Lines, Indian National Airways, Air India, Air Services of India were merged.
- 1953 also saw the introduction of India's Civil Helicopter Services.
- In 1956 Ms. Durba Banerjee was inducted as the first woman pilot of Indian Airlines.
- In 1960 India entered the jet age with the introduction of Boeing 707-437 into the fleet of Air India and USA was connected to India for the first time by an Indian airline flight.
- In 1972 the International Airports Authority of India (IAAI) was constituted and Vayudoot airlines (a government owned airline company) started operation in the year 1981.
- In 1984 Squadron Leader Rakesh Sharma of Indian Air Force becomes the first Indian cosmonaut and the 138th man in space spending 8 days in space abroad Salyut 7.
- In 1985 Captain Saudamini Deshmukh commanded the first all women crew flight on an Indian Airlines Fokker friendship F-27 on the Calcutta-Silchar route. She also commanded the first Boeing all-women crew flight on September 1989 on the Mumbai-Goa sector.
- 1985 also saw the establishment of Pawan Hans Helicopters Limited(PHHL) and the establishment of Indira Gandhi Rashtriya Uran Academy (IGRUA) in Fursatganj, Rai Bareli in Uttar Pradesh for training of pilots.
- 1985 was also a very traumatic year for Indian aviation when Air India flight AI 182 between Montreal and Delhi was blown up by terrorists over the Atlantic Ocean. Following this, the Bureau of Civil Aviation Security was established in 1987.
- The National Airports Authority was constituted in 1986.
- In 1989 Indian Airlines became one of the earliest airline of the world to induct A320s type of aircraft from the Airbus company

- 1990-91 saw the entry of private airlines after the de-regulation of the civil aviation sector. Private airlines were given permission to operate charter and non-scheduled services under the 'Air Taxi' Scheme. The East West Airlines was the first national level private airline to operate in the country after almost 37 years.
- In 1990 Captain Nivedita Bhasin of Indian Airlines at 26 became the youngest pilot in civil aviation history to command a jet aircraft. She also became the first woman check pilot on an Airbus A300 aircraft.
- 1990 was also a land-mark year for Indian civil aviation and Air India when Air India entered the Guinness Book of World Records for largest evacuation effort by a single civilian airline when it flew over1,11,000 people from Amman to Mumbai in 59 days operating 488 flights just before the Gulf war began.
- In 1994, following the repeal of the Air Corporation Act private airlines were permitted to operate scheduled services and a number of private players including Jet Airways, Air Sahara, Modiluft, Damania Airways, NEPC Airlines and East West Airlines commenced domestic operations.
- In 1995 India's six private airlines accounted for more than 10% of domestic traffic. Many foreign airlines started providing international services. In 1995, 42 airlines operated air services to, from, and through India.
- In 1995 Airport Authority of India (AAI) was constituted after the merging of the International Airport Authority of India with National Airports Authority.
- In 1998 Dr. Kalpana Chawla became the first Indian-born woman to fly to space as part of a NASA team. 1998 also saw the first Private Airport come up in the country in Cochin, Kerala.
- * 1999 was another tragic year in the history of Indian civil aviation when the IC 814 flight of Indian Airlines was hijacked to Kandahar.
- 2003 saw the ushering in all the'Low Cost Carriers' in the country when Air Deccan started its services.
- In 2004 Government approved setting up of private airports at Hyderabad and Banglore.
- In the December of 2004 Indian Scheduled carriers with a minimum of 5 years of continuous operations and a minimum fleet size of 20 aircraft, were permitted to operate scheduled services to international destinations.
- 2005 saw the rebranding of Indian Airlines as Indian. It also saw the entry of the Kingfisher Airlines. This year the Government designated Air India, Indian Airlines, Jet Airways and Air Sahara to operate international services.
- In 2006 the Government approved the restructuring and modernization of Mumbai and Delhi Airport through Public Private Partnership.
- 2007 saw the Regional Airlines Policy being announced wherein licenses were given for operation of airlines within a particular region.
- In 2008 the path breaking Greenfield Airports Policy of the Government was announced.
- To regulate the economic aspects of airports, the Parliament passed the Airports Economic Regulatory Authority (AERA) Bill and the AERA was set up in 2009.

- The brand new integrated terminal T-3 was inaugurated in New Delhi's Indira Gandhi International Airport in July 2010 and in December 2010 Pawan Hans started its Sea Plane Services Jal Hans.
- At present India is the 9th largest aviation market in the world with 82 operational airports, 735 aircraft, 12 operational scheduled airlines and 121 non-scheduled operators. The number of air passengers travelling in India is expected to cross 50 million.

Highlights

- The number of Domestic passengers carried in 2000-2001 was about 14 million which increased to more than 45 million in 2009-10 registering more than 3 fold growths in 10 years period.
- The number of international passengers carried in 2000-2001 was around 4 million in 2000-2001 which increased to almost 12 million in 2009-10, showing about 3 fold increases in the 10 years period.
- The amount of cargo carried also increased substantially over the 10 years period from 2000-2001 to 2009- 10. While the Domestic Cargo increased by almost 2 times and the international cargo increased by more than 2 times during the same period.
- The passengers carried by Air India on-non Scheduled revenue carries decreased from 1.56 lakh in 2000- 2001 to 1.04 lakh in 2008-09.
- Indian civil aviation sector has continued to experience high passenger growth (domestic traffic CAGR is 17% from 2009 to 2011), and if the trend continues it could rank among the top three aviation markets in the world by 2020.

Airports in India

Agra Airport	Delhi Airport	Mumbai Airport
Ahmedabad Airport	Goa Airport	Nagpur Airport
Amritsar Airport	Guwahati Airport	Patna Airport
Bangalore Airport	Hyderabad Airport	Pune Airport
Bhubaneswar Airport	Imphal Airport	Trivandrum Airport
Calicut Airport	Indore Airport	Vadodara Airport
Chennai Airport	Jaipur Airport	Varanasi A
Cochin Airport	Kolkata Airport	
Coimbatore Airport	Lucknow Airport	

Barring the exception of recession, it can be said that the civil aviation industry has witnessed a sea-change in India. Gone are the days, when passengers traveling via air had to depend upon the national carriers of the country, to make their trip. Today, with the advent of private airlines and their subsidiary budget carriers, traveling via air is not just confined to business and leisurely travelers. Due to the drastic development of the industry, over the last few years, airports in India also have been modernized. In the past few years, there has been a revolutionary change in the ground services provided by the leading airports of the country. Both domestic and international airports have tried to fulfill the requirements of the passengers, waiting to board their flights. To handle the massive growth of the airline industry in India, new and modern airports have come all over the country. International air travel has also witnessed a great upsurge in recent times

The **Airports Authority of India** (**AAI**) under the Ministry of Civil Aviation is responsible for creating, upgrading, maintaining and managing civil aviation infrastructure in India. It provides Air traffic management (ATM) services over Indian airspace and adjoining oceanic areas. It also manages a total of 125 Airports, including 11 International Airports, 8 Customs Airports, 81 Domestic Airports and 25 Civil enclaves at Military Airfields. AAI also has ground installations at all airports and 25 other locations to ensure safety of aircraft operations. AAI covers all major air-routes over Indian landmass via 29 Radar installations at 11 locations along with 89 VOR/DVOR installations co-located with Distance Measuring Equipment (DME). 52 runways are provided with Instrument landing system (ILS) installations with Night Landing Facilities at most of these airports and Automatic Message Switching System at 15 Airports. AAI's implementation of Automatic Dependence Surveillance System (ADSS), using indigenous technology, at Kolkata and Chennai Air Traffic Control Centres, made India the first country to use this technology in the South East Asian region thus enabling Air Traffic Control over oceanic areas using satellite mode of communication. Performance Based Navigation (PBN) procedures have already been implemented at Mumbai, Delhi and Ahmedabad Airports and are likely to be implemented at other Airports in a phased manner. AAI is implementing the GAGAN project in technological collaboration with the Indian Space Research Organization (ISRO), where the satellite based system will be used for navigation. The navigation signals thus received from the GPS will be augmented to achieve the navigational requirement of aircraft. First phase of technology demonstration system was completed in February 2008.

History

Airports Authority of India (AAI) was constituted by an Act of Parliament and came into being on 1 April 1995 by merging erstwhile National Airports Authority and International Airports Authority of India. The merger brought into existence a single Organization entrusted with the responsibility of creating, upgrading, maintaining and managing civil aviation infrastructure both on the ground and air space in the country.

Functions

- Design, Development, Operation and Maintenance of international and domestic airports and civil enclaves.
- Control and Management of the Indian airspace extending beyond the territorial limits of the country, as accepted by ICAO.
- Construction, Modification and Management of passenger terminals.
- Development and Management of cargo terminals at international and domestic airports.
- Provision of passenger facilities and information system at the passenger terminals at airports.
- Expansion and strengthening of operation area, viz. Runways, Aprons, Taxiway etc.
- Provision of visual aids.
- Provision of Communication and Navigation aids, viz. ILS, DVOR, DME, Radar etc.

Airports in Kerala

Calicut International Airport also known as Karipur Airport, is an International Airport serving the city of Kozhikode (Calicut), Kerala, India. Calicut Airport is one of the three international airports of Kerala, located at Karippur in Malappuram district, near Calicut (Kozhikode). It received the status of an international airport on February 2, 2006, which led to development in its infrastructure, for handling the operation of international flights from its terminal. Currently, it holds the distinction of being the 12th busiest airport in India, and 11th in cargo handling, in terms of its passenger traffic.

Formation

Calicut airport gained its sanction after a long period of struggle, which began in 1977, under the leadership of freedom fighter late K.P. Kesava Menon. In the 1990s, Gulf Malayalis played an important part in the development of the airport - they collected funds for the purpose, when the Union Government said it did not have funds. This led to the inception of, the Malabar International Airport Development Society, which helped raise funds for the airport's development. Consequently, major developments of facilities, such as extension of runway from 6,000 feet to 9,000 feet to facilitate operation of big-bodied aircraft, were carried out, with loans from HUDCO.

Modernization

Airports Authority of India has played a vital role in the modernization of Calicut Airport. The facilities provided in the airport have been increased, which has paved the way for the steady increase in the passenger traffic from the airport as well as the operations of foreign airlines. A number of airlines, operating from the airport, have sought night parking facility. Currently, the airport offers 10 parking bays. International departure terminal started its operations on May 14, 2007. In the recent time, a spacious international arrival terminal has also been opened to passengers, which is as spacious as the departure terminal.

Airlines

Currently, five domestic airlines are operating from Calicut Airport. The national carriers Air India (with destination to Mumbai, Trivandrum, Chennai), Air India Express (with destination to Cochin, Mangalore, Mumbai, Trivandrum), and Indian Airlines (flying to Chennai, Coimbatore, Delhi, Mumbai) operate from this airport. The private carriers, operating from this airport, are JetLite (Mumbai) and Kingfisher Airlines (to Bangalore, Chennai, Cochin, Goa, Mangalore, Trivandrum). The international airlines, operating from Calicut Airport, are Air Arabia (to Sharjah), Air India (destined to Damam, Riyadh, Jeddah), Air India Express (to Abu Dhabi, Al Ain, Bahrain, Doha, Dubai, Kuwait, Muscat, Salalah, Sharjah), Bahrain Air (Bahrain), Emirates Airline (to Dubai), Etihad Airways (Abu Dhabi), Indian Airlines (Bahrain, Doha, Dubai, Kuwait, Muscat, Sharjah), Oman Air (Muscat), Qatar Airways (Doha) and Saudi Arabian Airlines (Jeddah, Riyadh).

Passenger Facilities

- Inline Baggage System
- Three User-Friendly Conveyor Belts
- Stainless Steel Chairs (in security-hold area)
- Escalators
- Elevators
- Fast-Food Counters
- Luggage Room
- Jewellery Shop
- Handicraft Stall
- Traffic Direction Poles
- Restaurant
- Cyber Cafe
- Leather Sleeperettes for Transit Passengers

Cochin International Airport also known as Nedumbassery Airport and CIAL, is the largest and busiest airport in Kerala, located at Nedumbassery, 25 km (16 mi) north of Kochi, in India. For the financial year 2010-11, it was the seventh busiest airport in India in terms of overall passenger traffic and fourth busiest in terms of international passenger traffic. The airport is the primary base for Air India Express operations and is a focus city for Air India, GoAir, IndiGo, Jet Airways, JetLite, SpiceJet and Kingfisher Airlines. Cochin International Airport is the first airport in the country developed under a public-private partnership (PPP) model. The airport pioneered the concept of private investment in the airport sector after being incorporated as a public limited company, receiving investments from nearly 10,000 non-resident Indians (NRIs) from 30 countries. The airport handled 4.3 million passengers and had air traffic movements (ATM) of about 411 per week for the year 2009–10. The airport handles approximately 800 aircraft per week, with 10,800 passengers each day. 8 domestic airlines and 16 international airlines connect Kochi with nearly 40 destinations nationally and internationally. Cochin International Airport has the state-of-the-art facilities and traditionally designed architecture unique to Kerala. Cochin Airport has three different terminals to channelize the services. The domestic terminal is comparatively small and it can handle around 500 passengers at a time. There are over 20 check-in counters including 5 premium check-in counters while the waiting room can accommodate over 400 passengers. A small food court and recreational area is also available for the passengers. The international terminal is large and spacious with 37 dedicated check-in gateways and 5 premium check-in counters. CIAL is the fifth airport in the country that uses the in-line baggage screening system in place of the conventional manual X-ray scanning machines. In addition there are more than 20 passport verification counters and 4 baggage carousels to ensure a smooth flow of traffic. The cargo terminal of CIAL has some of the best facilities in the country. It has already registered an annual growth of 25 per cent and has handled about 40000 MT of cargo last year. It has a Center for Dry Cargo (CDC), where the cargo meant for import or export are inspected, a Center for Perishable Goods (CPC), which is the largest cold storage facility in the country and the Transshipment Cargo Complex that offers warehouse facilities for the cargo.

Trivandrum International Airport is located in Thiruvananthapuram and is the first airport in the state of Kerala, India. It is the first International airport in a non-metro city in India. TIA is considered as an "all weather" airport in the country and is ISO 9001-2000 certified. It is the 8th busiest airport in the country in terms of international passenger traffic and 10th busiest in terms of overall passenger traffic.

The Trivandrum International terminal is located approximately 3.7 km (2.3 mi) due west from the central business district, 16 km (9.9 mi) from Kovalam beach, 9.4 km (5.8 mi)[citation needed] from Technopark Trivandrum and 21 km (13 mi) from the proposed Vizhinjam International Seaport. It is the second busiest airport in Kerala in terms of domestic and international traffic after Cochin International Airport. In addition to civil operations, Trivandrum Airport also caters to the IAF (Indian Air Force) and the Coast Guard for their strategic operations. IAF have an exclusive apron to handle all their operations. Trivandrum airport also caters for the Rajiv Gandhi Academy for Aviation Technology which carries out pilot training activities.

Passenger airlines – The players

Indian Airlines

Indian Airlines was founded in 1953. Today, together with its fully owned subsidiary Alliance Air, it is one of the largest regional airline systems in Asia with a fleet of 62 aircraft(4 wide bodied Airbus A300s, 41 fly-by-wire Airbus A320s, 11 Boeing 737s, 2 Dornier D-228 aircraft and 4 ATR-42). It has many firsts to its credit, including introduction of the wide-bodied A300 aircraft on the domestic network, the fly-by-wire A320, Domestic Shuttle Service, Walk-in Flights and Flexi-fares. The airlines network spans from Kuwait in the west to Singapore in the East and covers 75 destinations - 57 within India and 20 abroad. The Indian Airlines international network covers Kuwait, Oman, UAE, Qatar and Bahrain in West Asia, Thailand, Singapore, Yangon and Malaysia in South East Asia and Pakistan, Nepal, Bangladesh, Myanmar, Sri Lanka and Maldives in the South Asian sub-continent. Indian Airlines is presently fully owned by the Government of India and has total staff strength of around 18562 employees. Its annual turnover, together with that of its subsidiary Alliance Air, is well over Rs.4000 crores (around US$ 1 billion). Indian Airlines flight operations centre around its four main hubs- the main metro cities of Delhi, Mumbai, Calcutta and Chennai. Together with its subsidiary Alliance Air, Indian Airlines carries a total of over 7.5 million passengers annually.

Indian, formerly Indian Airlines was a major Indian airline based in Delhi and focused primarily on domestic routes, along with several international services to neighbouring countries in Asia. It was state-owned, and was administered by the Ministry of Civil Aviation. It was one of the two flag carriers of India, the other being Air India. The airline officially merged into Air India on 27 February 2011.O n 7 December 2005, the airline was rebranded as Indian for advertising purposes as a part of a program to revamp its image in preparation for an initial public offering (IPO). The airline operated closely with Air India, India's national carrier. Alliance Air, a fully owned subsidiary of Indian, was renamed Air India Regional. In 2007, the Government of India announced that Indian would be merged into Air India. As part of the merger process, a new company called the National Aviation Company of India Limited (now called Air India Limited) was established, into which both Air India (along with Air India Express) and Indian (along with Alliance Air) would be merged. Once the merger was completed, the airline - called Air India - would continue to be headquartered in Mumbai and would have a fleet of over 130 aircraft.

Air India

Air India is the flag carrier airline of India owned by Air India Limited (AIL), a Government of India enterprise. The airline operates a fleet of Airbus and Boeing aircraft serving various domestic and international airports. It is headquartered at the *Indian Airlines House* in New Delhi. Air India has two major domestic hubs at Indira Gandhi International Airport and Chhatrapati Shivaji International Airport, and secondary hubs at Chennai International Airport and Netaji Subhas Chandra Bose International Airport, Kolkata. The airline formerly operated a hub at Frankfurt Airport which was terminated on account of high costs. However, another international hub is being planned at the Dubai International Airport. Air India was once the largest operator in the Indian subcontinent with a market share of over 60%. Indifferent financial performance and service, labor trouble pushed it to fourth place in India, behind low cost carriers like IndiGo, Spicejet, and its full service rival Jet Airways. Between September 2007 and May 2011, Air India's domestic market share declined from 19.2% to 14%, primarily because of stiff competition from private Indian carriers.[9][10] However, after financial restructuring and enforcement of strict rules and regulations, the airlines showed signs of turning around. In March 2013, the airlines posted its first positive EBITDA after almost 6 years. The airlines bolstered its financial and physical performance with a 44 per cent slash in its operating losses in 2013-14 and an almost 20 per cent growth in its operating revenue since the previous financial year.[12] As of January 2014, Air India is the third largest carrier in India, after IndiGo and Jet Airways with a market share of just above 19%. The airline was invited to be a part of the Star Alliance in 2007. Air India completed the merger with Indian Airlines and some part of the agreed upgrades in its service and membership systems by 2011. In August 2011, Air India's invitation to join Star Alliance was suspended as a result of its failure to meet the minimum

standards for the membership. However, in October 2011, talks between the airline and Star Alliance resumed. On 13 December 2013, Star Alliance announced that Air India and the alliance have resumed the integration process and the airline would join the alliance in July 2014.

Air Sahara

Air Sahara has established itself as one of the leading players in the Indian Aviation industry. Air Sahara is part of the multi-crore Sahara India Pariwar. Sahara India Pariwar has interests in Public Deposit Mobilization, Media & Entertainment, Housing & Infrastructure, Tourism, Consumer Products and Information Technology. Starting on a modest scale and a capital of only Rs.2000 in 1978, Sahara India Pariwar has traversed a long way to become an icon in Indian entrepreneurship. Air Sahara began operations on December 3, 1993 following the Indian government's decision to open the skies to the private sector. It operated with a fleet of only two Boeing 737-200s. Today, its fleet includes advanced aviation technology New Generation Boeings 737-700s and 737-800s and Classics 737-400s and a fleet of 7 Canadair Regional Jets. The fleet also includes four highly advanced Helicopters (Dauphin and Ecureuil), which provide efficient charter services. Offering 119 flights with 11800 seats on a daily basis, Air Sahara flies to various destinations in India, which include important cities like Delhi, Bangalore, Mumbai, Kolkata, Lucknow, Hyderabad, Pune, Chennai and others. The airline has recently added Colombo, Srinagar, Coimbatore, Ahmedabad, Jaipur, Gorakhpur, Allahabad, Bhubaneshwar, Ranchi and Kochi to its route network. Air Sahara also operates flights to Dibrugarh, Guwahati, Varanasi, Patna and Goa. The airline is currently undergoing a complete overhaul and restructuring exercise. Air Sahara has redefined itself in terms of an efficient and punctual airline with a high record of on-time-performance and dispatch reliability. Efforts are being made to increase connectivity and offer convenient timings. A major investment programme has been launched for the modernization and enhancement of its fleet. Fleet review and route rationalization have become the focus points of Air Sahara's strategy. Five new Boeings have been added to the fleet in the last one year. These were used to add new destinations and increase frequency on existing routes. In the second phase of its expansion four Canadair Regional Jets have been added to the fleet this year serve on regional routes. Air Sahara has introduced initiatives such as Steal-a-seat flexi fare options, Sixer/Super Sixer and Square Drive/Super Four. The Sixer initiative recently won the 'The Pacific Asia Travel Association' (PATA) award for the year 2003, at Bali, Indonesia. Air Sahara's frequent flyer programme called Cosmos offers faster accruals, lower redemption bars and requires no minimum balance for redemption.

Air Services of India

Air Services of India was a private airline based at Juhu Aerodrome in Mumbai, in India. The airline was merged into the Indian Airlines Corporation in 1953.

History

The airline was formed in 1936 and initially served routes on the Kathiawar Peninsula and to Poona.[2] with aircraft like the de Havilland Dragonfly, Airspeed Courier, Percival Vega Gulls and de Havilland Fox Moths. In the beginning of 1939, it opened a new line between Kolhapur and Juhu Aerodrome in Mumbai. The thrice a week service was officially inaugurated by the Maharaja of Kolhapur, who showed considerable interest in the project, subsidised the service and built an airport at Kolhapur. [3] In 1941, Air Services of India was purchased by The Scindia Steam Navigation Company Ltd. and became known as the Scindia line.[2] Services resumed on 3 May 1946 after World War 2 with a small fleet of De Havilland Dragon Rapides and 11 former United States Air Force Douglas C-47 Skytrains converted for civilian use.[4] By 1953, when the Air Corporations Act was passed, it had an extensive network from Cochin to Lucknow and became Line 7 of the Indian Airlines Corporation.

Jet Airways

Jet Airways is the second of India's two major airlines based in Mumbai, both, in terms of market share [5] and passengers carried, after IndiGo.[6] It operates over 3000 flights daily to 76 destinations worldwide. Its main hub is Mumbai, with secondary hubs at Delhi, Kolkata, Chennai, Bengaluru.[7] It has an international hub at Brussels Airport, Belgium. **Jet Airways**

In May 1974, Naresh Goyal founded Jetair (Private) Limited with the objective of providing Sales and Marketing representation to foreign airlines in India. In 1991, as part of the ongoing diversification programme of his business activities, Naresh Goyal took advantage of the opening of the Indian economy and the enunciation of the Open Skies Policy by the Government of India, to set up Jet Airways (India) Private Limited, for the operation of scheduled air services on domestic sectors in India. Jet Airways has emerged as India's largest private domestic airline and has been acclaimed by frequent travellers as the most preferred carrier offering the highest quality of comfort, courtesy and standards of in flight and ground service and reliability of operations. It currently has a market share of 46.7% per cent and operates a fleet of Boeing and ATR72-500 turbo-prop aircraft. Jet Airways has been voted India's 'Best Domestic Airline' consecutively and won several national and international awards, including the 'Market Development Award' for 2001 awarded by Air Transport World.

History

Jet Airways was incorporated as an air taxi operator on 1 April 1992. It started commercial operations on 5 May 1993 with a fleet of four leased Boeing 737-300 aircraft from Malaysia Airlines. In January 1994 a change in the law enabled Jet Airways to apply for scheduled airline status, which was granted on 4 January 1995. Naresh Goyal – who already owned Jetair (Private) Limited, which provided sales and marketing for foreign airlines in India – set up Jet Airways as a full-service scheduled airline to compete against state-owned Indian Airlines. Indian Airlines had enjoyed a monopoly in the domestic market between 1953, when all major Indian air transport providers were nationalised under the Air Corporations Act (1953), and January 1994, when the Air Corporations Act was repealed, following which Jet Airways received scheduled airline status. Jet began international operations from Chennai to Colombo in March 2004. The company is listed on the Bombay Stock Exchange, but 80% of its stock is controlled by Naresh Goyal (through his ownership of Jet's parent company, Tailwinds). It has 13,177 employees

(as at 31 March 2011). In January 2006 Jet Airways announced that it would buy Air Sahara for US$500 million in an all-cash deal, making it the biggest takeover in Indian aviation history. It would have resulted in the country's largest airline but the deal fell through in June 2006. On 12 April 2007 Jet Airways agreed to buy out Air Sahara for INR14.5 billion (US$340 million). Air Sahara was renamed JetLite, and was marketed between a low-cost carrier and a full service airline. In August 2008 Jet Airways announced its plans to completely integrate JetLite into Jet Airways. In October 2008, Jet Airways laid off 1,900 of its employees, resulting in the largest lay-off in the history of Indian aviation. Jet Airways and their rival Kingfisher Airlines announced an alliance which primarily includes an agreement on code-sharing on both domestic and international flights, joint fuel management to reduce expenses, common ground handling, joint utilisation of crew and sharing of similar frequent flier programmes. On 8 May 2009 Jet Airways launched its low-cost brand, Jet Konnect. The decision to launch a new brand instead of expanding the JetLite network was taken after considering the regulatory delays involved in transferring aircraft from Jet Airways to JetLite, as the two have different operator codes. The brand was launched on sectors that had 50% or less load factor with the aim of increasing it to 70% and above. Jet officials said that the brand would cease to exist once the demand for the regular Jet Airways increases.

According to a PTI report, for the third quarter of 2010, Jet Airways (Jet+JetLite) had a market share of 22.6% in terms of passengers carried, thus making it a market leader in India, followed by Kingfisher Airlines with 19.9%. In July 2012, Jet Airways officially sought government approval to join Star Alliance. In June 2011, Jet Airways banned carrying fish, crab, meat, poultry products and liquid items as check-in baggage. Jet is the first domestic airline to impose such a ban. Jet claimed that passengers complained of their baggage getting soiled by seepage from bags containing meat products. Early in 2013, Etihad Airways, one of the flag carriers of the United Arab Emirates based out of Abu Dhabi planned to buy a stake in Jet Airways. On 24 April 2013, Jet announced that they were ready to sell a 24% stake to Etihad at US$379 million. Earlier, in September 2012, the government of India announced that foreign airlines can take up a stake of up to 49% in Indian airlines, thereby making this deal possible. Etihad, which had already purchased stakes in 4 other loss making airlines, said, they were "concentrating on future potential rather than past performance", and were ready to take up the stake in Jet.[18] Initially, Jet announced that they were likely to sign the stake sale deal with Etihad between 22 January and 3 February, which they later confirmed to as 25 January. However, the date passed by and the deal was further postponed.Meanwhile, Jet Airways concentrated well on revenues, costs and network side, which resulted in the airline making profits for the first time since the rupee depreciation. Nikos Kardassis, the Chief Executive Officer of Jet Airways said "The combined impact of higher yields and lower costs (ex-fuel) have resulted in significantly lowering the breakeven seat factor levels in the business."[22] The airline announced a *sale* on its website, which offered 2 million seats for travel within India, till 31 December 2013. This sale was announced a little over one month after rival low-cost carrier SpiceJet announced a sale, which was expected to have triggered a fare-war.[23] High airfares throughout 2012 due to grounding of Kingfisher Airlines caused passengers to opt out of air travel, leading to negative growth in traffic for the first time since

2009. Jet Airways planned to attract more passengers by subsequently lowering the fares, which was followed by SpiceJet again. With two airlines offering cheaper travel, India's flag carrier started losing passengers and it too offered cheaper tickets. This was followed by IndiGo and GoAir, resulting in a full-fledged fare war.[24]

Subsidiaries

Jet Lite

JetLite was a wholly owned subsidiary of Jet Airways. It was established as Sahara Airlines on 20 September 1991 and began operations on 3 December 1993 with two Boeing 737-200 aircraft. Initially services were primarily concentrated in the northern sectors of India, keeping Delhi as its base, and then operations were extended to cover all the country. Sahara Airlines was rebranded as Air Sahara on 2 October 2000. On 12 April 2007 Jet Airways took over Air Sahara and on 16 April 2007 Air Sahara was renamed as JetLite. JetLite operated a fleet of mixed owned–leased Boeing 737 Next Generation aircraft and Bombardier CRJ-200ER. JetLite ceased operations on 25 March 2012 after merger with Jet Konnect. The Bombardier jets were phased out but the Boeings remained in service and operated for JetKonnect. JetLite offered a buy on board service called **JetCafé**, offering food for purchase.

Jet Konnect

JetKonnect, formerly Jet Airways Konnect, is the low-cost brand of Jet Airways. It was launched on 8 May 2009. It operates a fleet of Boeing 737 Next Generation aircraft. The rationale for launching Jet Konnect was to close down loss-making routes and divert the planes to more profitable routes with higher passenger load factors. Jet already ran a low-cost airline named JetLite. According to Jet Airways, the decision to launch a low-cost brand instead of expanding the existing JetLite was taken to avoid the regulatory delays associated with moving excess aircraft and assets from Jet Airways to JetLite, which have separate operating codes. Jet Konnect offers a no frills flight where meals and other refreshments have to be purchased on board. To identify if the flight is a full service or Konnect the flight numbers for Konnect are in the series 9W 2000-2999. Jet Airways merged the JetLite brand into Jet Konnect on 25 March 2012. Jet Airways offers eight business class seats in Konnect to cash in on Kingfisher Airlines' woes. In December 2012, Jet Airways placed an order for 5 ATR 72-600 aircraft to "enhance regional connectivity". The first aircraft was delivered the same month, leased from GECAS and was operated for JetKonnect. Jet Airways serves 52 domestic destinations and 21 international destinations, a total of 73 in 19 countries across Asia, Europe and North America. Short-haul destinations are served using Boeing 737 Next Generation. ATR 72-500s are used only on domestic regional routes, while long-haul routes are served using its Airbus A330-200 and Boeing 777-300ER aircraft. London, England was the airline's first long-haul destination and was launched in 2005. Since 2007 Jet Airways has had a scissors hub at Brussels Airport in Belgium for onward trans-atlantic connections to Canada and the United States. The recession forced Jet Airways to discontinue the following routes: Ahmedabad–London, Birmingham-Brussels, Amritsar–London, Bangalore–Brussels, Mumbai–Shanghai–San Francisco and Brussels-New York. It also had to put an indefinite delay on its expansion plans. Jet Airways was forced

to lease out seven of its ten Boeing 777-300ERs to survive the financial crunch. Due to the recession all flights to North America were operated on an Airbus A330-200 replacing the Boeing 777-300ERs. It also had to sell a brand-new, yet-to-be-delivered Boeing 777-300ER in 2009 and had to defer all new aircraft deliveries by at least two years. The airline planned to restore the Mumbai-Shanghai route by the end of 2011 but never went through with it. As the economic crisis in the eurozone countries worsened, Jet also closed the Delhi-Milan route. Jet Airways is planning to relaunch service to New York's JFK International Airport via Abu Dhabi starting May 1, 2014.

Also, Jet Airways will introduce the Mumbai-Paris route using the Airbus A330 aircraft from Mid May 2014 - a mid-day departure from Mumbai to reach evening in Paris CDG and Leaving CDG Paris in night arriving next morning in Mumbai similar to Air India's schedule on Delhi-Paris route.

Air Deccan

Air Deccan is a unit of Deccan Aviation Private Limited, India's largest private heli-charter company. Formed in 1995, Deccan Aviation Private Limited has carved a niche for itself in the Indian aviation scene with its reputation for providing speedy and reliable heli-services for company charters, tourism, medical evacuation, off-shore logistics and a host of other services. The company has a modern fleet of ATR-42-320 aircraft, one of the finest and most efficient Turbo-Prop aircraft flying. ATR is a European joint venture between Alenia Aeronautica and EADS. The ATR 42 has become a reference aircraft amongst airlines around the world, by offering a safe, easy to maintain and comfortable aircraft operating on the regional market with the best economics on short haul sectors. To date, ATR has sold over 650 aircraft to more than 100 operators in 73 countries all around the world.

The company has adopted a 'lean-and-mean' approach to staffing and aims at maintaining a low aircraft-to-employee ratio. A good work culture coupled with a skilled workforce is the backbone of the company.

Kingfisher Airlines

Kingfisher Airlines Limited was an airline group based in India. Its head office is in Andheri (East), Mumbai and registered office in UB City, Bangalore. Kingfisher Airlines, through its parent company United Breweries Group, has a 50% stake in low-cost carrier Kingfisher Red. The airline had been facing financial issues for many years.[4] Until December

2011, Kingfisher Airlines had the second largest share in India's domestic air travel market. However due to a severe financial crisis faced by the airline at the beginning of 2012, it has the lowest market share since April 2012.

Kingfisher Airlines was established in 2003. It is owned by the Bengaluru based United Breweries Group. The airline started commercial operations in 9 May 2005 with a fleet of four new Airbus A320-200s operating a flight from Mumbai to Delhi. It started its international operations on 3 September 2008 by connecting Bengaluru with London. Kingfisher's head office is located in Kingfisher House Western Express Highway Vile Parle (E) Mumbai, India and its registered office is located in UB City, Bangalore. Its head office was previously in the Kingfisher House in Vile Parle (East), Mumbai. In 2012 Vijay Mallya was trying to sell the Vile Parle Kingfisher House. The airline had shut down its operations when on 20 October 2012 the DGCA suspended its flying license. This suspension had been due to failure to give an effective response to the show-cause notice issued by DGCA. However, The airline had locked out its employees for several days before this suspension. On 25 October 2012, the employees agreed to return to work.[6] On 7 June 2010 Kingfisher became a member elect of the Oneworld airline alliance when it signed a formal membership agreement. Kingfisher confirmed on 20 December 2011 that it will join the Oneworld airline alliance on 10 February 2012. Kingfisher would have been the first Indian carrier to join one of the big airline alliances. However on 3 February 2012, owing to bad financial situation and two days after the International Air Transport Association (IATA) clearing house suspended Kingfisher Airlines; the airlines participation to Oneworld has been put on hold. In February 2013 the Indian government announced the withdrawal of both domestic and international flight entitlements allocated to the airline, The CEO has quit on 17 Feb 2014.

Spice Jet

SpiceJet is an Indian low-cost airline owned by the Sun Group of India. It has its registered office in Chennai, Tamil Nadu, and a corporate office in Gurgaon, Haryana. It began service in May 2005, and by December 2013, it had a market share of 19.1% in the Indian domestic market, which makes it the third largest carrier, ahead of Air India, and GoAir.

History

The origins of SpiceJet track back to February 1993 when ModiLuft, one of India's first post-deregulation airlines that was launched by the Indian industrialist S K Modi, in technical partnership with the German flag carrier Lufthansa. The airline project was started in February 1993 by S. K. Modi, Ashutosh

Dayal Sharma and Kanwar K. S. Jamwal and on 5 May 1993 took the first flight from New Delhi to Mumbai. The airline actually started operations within three months of its conception – a record of kinds in itself. It maintained very high standards in flight safety, ground maintenance, and on-time performance, owing to a strong support from Lufthansa AG. The team consisting of Indian and German technical staff and pilots was built by Kanwar K S Jamwal, general manager Projects, a thorough professional himself, was responsible for setting up the Airline and its operations. Captain R. L. Kapur and Retired First officer Cdr. S. Raj, along with a team of airline experts helped further, in meeting the highest standards in the aviation industry and in conforming to the Indian Aircraft Rules set by the Director General Civil Aviation. The first two batches of the cabin crew were extensively trained at the flight crew training facility at Frankfurt. Modiluft was perhaps the only Airline to achieve an average aircraft utilisation of a minimum 12 hours per day in Indian Skies. This was no ordinary feat, as it required constant supervision, resources and a team of thorough professionals at every level to make this possible.ModiLuft was the only airline in India to fly a three class configuration compared to others airlines, It had a First, Business and an Economy Class and an incident free track record of flying. It used Boeing 737-200 aircraft leased from Lufthansa. ModiLuft did not last very long specially because the business parity of the German and Indian partners was not the same and problems arose. Then the co-operation was broken off and ModiLuft acquired Boeing 737-400 aircraft to replace the 737-200s from Air UK, but the future of ModiLuft was already sealed and the airline ceased operations in 1996. However, the air-operating certificate (AOC) of ModiLuft did not lapse and the airline due to lack of funds changed hands and renamed Royal Airways. In 2004, management of the airline was taken over by Sanjay Malhotra and Ajay Singh, who renamed the company, raised funds and restarted operations. Thus, Spicejet was born following the low-cost model.[7] SpiceJet leased 3 Boeing 737-800 Next Generation jet aircraft. SpiceJet chose to buy in modern Boeing NGs.[8] On 7 March 2005, the Airports Authority of India approved three overnight parking slots (for aircraft) to SpiceJet, with two in Delhi and one in Mumbai.

SpiceJet opened bookings on 18 May 2005 and results followed immediately as over 37,000 were booked out in just one day, setting a new record in the Asian continent. *Red Hot Special Fares* were introduced ranging from (US$1.70) to (US$13). The first flight was flagged off by the Union Minister of Civil Aviation, Shri. Praful Patel. The first Boeing 737-800 aircraft left Delhi for Mumbai via Ahmedabad on 24 May 2005.[11] It was very successful and by 2008, it was India's second-largest low-cost airline in terms of market share. In late 2007 media billionaire Keyur Patel of Fuse Group was

approached by the company for investment in SpiceJet of US $ 20M. On 15 July 2008 billionaire Wilbur Ross suggested he would invest □3.45 billion (US$58 million) in the airline. SpiceJet accepted an offer in principle from a US-based private equity firm that would make these funds available. Indian media baron Kalanidhi Maran acquired 37.7% in the business in June 2010.[12][13] In early 2012, SpiceJet suffered from a loss of over □390 million (US$6.5 million) as fuel prices were reported to have jumped up by as high as 90%. The money that SpiceJet spent on fuel has exceeded well over 50% spiraling the airline into losses. As of 2011 Spicejet owed the state Rs. 366 million for availing airport facilitiesOn 9 January 2012, the Directorate General of Civil Aviation, reported that several airlines in India, including SpiceJet, have not maintained crucial data for the flight operations quality assurance or the FOQA. The Bombay stock exchange later announced that ever since June 2011, Spicejet had been suffering losses in millions of rupees. BSE reported that SpiceJet suffered a loss of □719.64 million (US$12 million) in March–June, □2400.67 million (US$40 million) in June–September and □392.60 million (US$6.6 million) in September–December.The airline's quarterly income also went down in June–September 2011, but somehow the airline managed to pull its income up to □11758.34 million (US$200 million) by December to recoup cumulative losses. Despite the losses, Kalanithi Maran doubled his stake in Spicejet to 16% by investing □1 billion (US$17 million) in the airline. Maran believed that SpiceJet was going through financial distress because of the steadily rising costs of Jet fuel. The airline's market share at the time was a little over 16% making it the fourth largest airline in India. Neil Mills said that the airline was making preparations so as to directly import jet fuel reducing operational costs. The year end turned out well enough for SpiceJet as the airline returned to making profits.

2013 and beyond

Contrary to reports that SpiceJet will be selling a stake to Tigerair, SpiceJet launched its first interline pact with Tigerair on 16 December 2013. The first phase allows SpiceJet to sell SpiceJet to Tigerair flights in one booking reservation while the second phase allows Tigerair to sell Tigerair to SpiceJet flights in one booking reservation. All SpiceJet flights to Singapore will be via Hyderabad. On October 31, 2013, SpiceJet ushered in a new era with the appointment of Sanjiv Kapoor as the COO. The other major changes in top management included roping in Kaneswaran Avili as the new CCO and R. Neelakantan as the CFO

Indian CivilAviation Industry

** Vision**

Enable people to have access to safe, Secure, sustainable and affordable air services in World Class civilization

Mission

1 To create world class infrastructure facilities
2 To establish regulatory framework in consonance with international standards
3 Connect presently unserved or undeserved areas.
4. Devolap skilled man power according to the needs of the industry.

5. Deploy advace technologiesfor the optimal growth of the sector.

How Aviation Industry is effecting Indian Economy

Ten years back ther were just two Airline both state owned. In the last ten years the economy has opened up .India has experienced growth rate of 24% per year.

The main factors which effect the Indian economy are:-

1) Increase no of domestic Airlines
2) Low cost Airlines
3) India's improving Economy

*The other factors are:-

1) Increase in no: of business traveller to different countries.
2) Increase in no: of tourist and business enterprises.
3) Increase business trade due to the rapidly growing economy and free trade agreement with neigbhouring countries.
4) Favourable Govt: policies and tax reforms

Role of Airport of Infrastructure in National Economy

1. Airports also represent a country's window on the world. Passengers form their first impressions about a nation from the state of its airports. They can be effectively used as symbols of national pride, if we pay sufficient attention to their quality and maintenance.
2. In many remote, hilly and inaccessible areas of the country, air transport is the quickest and sometimes the only mode of travel available. This is especially true of sensitive regions on the borders with our neighbours in the west, north and north-east.
3. Airports need to be integrated with other modes of transport like Railways and Highways, enabling seamless transportation to all parts of the country.

India Growth Industry

- India's domestic aviation market expansion has been the strongest in the world
- India is currently the 9th largest aviation market in the world
- It is expected that the civil aviation market will register a compound annual growth rate more than 16% in the 2010 - 2013Passenger traffic has grown at 18% year on year basis and the year 2010 closed at 90 million passengers both domestic and international.
- India is the fastest growing aviation market and expected to be begin 4-5 big aviation market by 2020 and 3rd in terms of domestic market after US and China. During the last two decades from a fleet of only about 100 the scheduled operators now have reached 435 aircraft connecting the nation and the world.

RESULTS AND DISCUSSION

The recent lengthy queues at Airport terminal highlighted the difficulties of managing the challenge of increasing global mobility and the annual growth in air traffic of 18% on year

on year. Passenger numbers are projected to increase, with more than 280 million people expected to travel through the Indian Airport at the year 2020. As a result, the pressure on border authorities to balance security with a good passenger experience and to show the India as efficient and open for business will inevitably grow. This challenge, of course, does not just apply to India; it applies in equal measure in immigration facilities around the world. The Civil Aviation Sector in India witnessed phenomenal growth in the past few years. Domestic and International passenger traffic grew from 22.3 million and 19.3 million in 2005 to 51.6 million and 34 million in 2010 respectively.

AIRPORTS

Presently, India has 136 airports, of which 94 are owned by the Airports Authority of India (AAI). Of 136 airports in India, 82 are operational. The airports can be categorised as:

AIRPORTS	NUMBERS
International airports, including joint venture airports	17
Domestic airports	79
Customs airports	8
Civil enclaves	24
Others	8

Source: www.ibef.org accessed on 2nd November 2010

LIST OF DOMESTIC AIRLINES

AIRLINES	COMMENCED OPERATIONS
Air India	October 1932
Air India Express	April 2005
Kingfisher	August 2003
GoAir	June 2004
IndiGoAirlines	August 2006
Jet Airways	May 1993
Jet Lite	April 2007
Kingfisher Airlines	May 2005
MDR Airlines	March 2007
Paramount Airways	October 2005
SpiceJet	May 2005

Source: Ministry of Civil Aviation accessed on 30th October 2010

Market Share

Jet Airways and Jet Lite (previously Air Sahara)	27.7%
Kingfisher Airlines and Kingfisher Red (previously Air Deccan)	20.7%
Air India (previously Indian Airlines)	18.6%
IndiGo	13.6%
SpiceJet	12.4%
GoAir	5.4%
Paramount Airways	1.5%

Legend: Jet Airways, Kingfisher Airlines, Air India, IndiGo, SpiceJet, GoAir, Paramount Airways
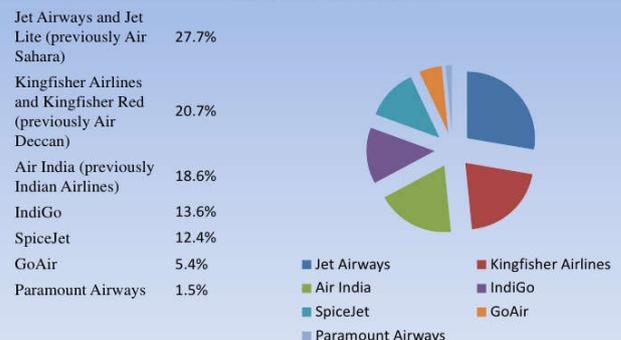
Source: http://dgca.nic.in/reports/MARKET.pdf accessed on 9th November 2010

Key Statistics (Nov-2011)

MARKET SHARE OF SCHEDULED DOMESTIC AIRLINES

Source : DGCA report nov-2011
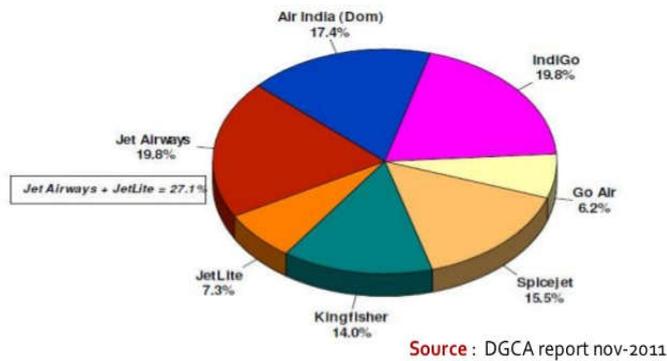
Key Statistics : (Nov-2011)

CAPACITY VS DEMAND

Source : DGCA report nov-2011
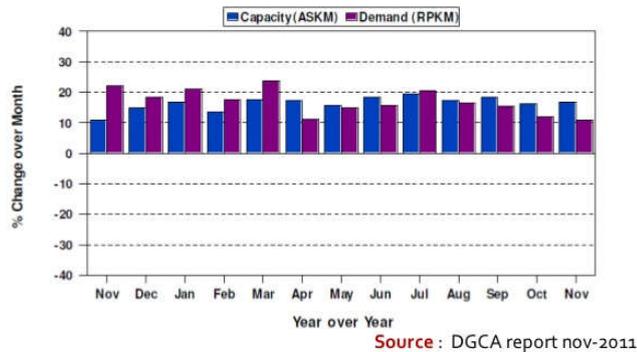
Key Statistics : (Nov-2011)

SEAT FACTORS OF SCHEDULED DOMESTIC AIRLINES

Source : DGCA report nov-2011
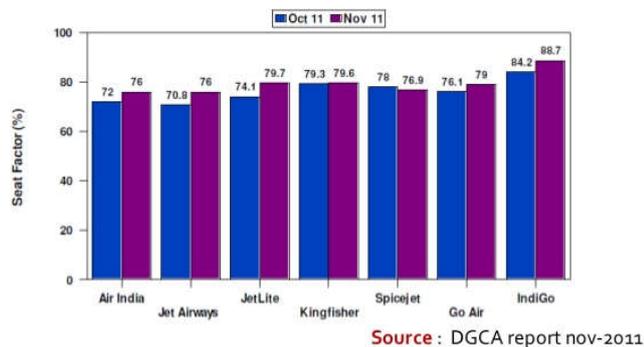
Busiest Airports by Passenger traffic

Source : IATA

SWOT Analysis

Strengths

- Rapidly growing economy
- Growing population and middle class
- Dispersed tourist attractions
- Long history of Civil Aviation
- Indigenous entrepreneurship
- Good safety record

Opportunities

- Growth of inbound and outbound traffic
- Development of India as a prime tourism and medical services destination
- Increased integration with the global economy
- Cross country travel by students
- Need for an aviation hub between Dubai and Singapore
- Disaster relief and medical evacuation
- Helicopter' sector has significant growth opportunities

Weaknesses

- Limited infrastructure
- High costs of operation
- Lack of R&D; foreign dependence
- Inadequate trained manpower
- Slow cargo growth
- Absence of MRO facilities
- Lack of comprehensive IT based systems
- Underdeveloped ATM and ANS
- Poor organisational culture in National carrier

Threats

- Global terrorism
- Cyclical economic downturns
- Development of substitutes
- Congestion of air space
- International factors
- LCCs of foreign countries

Government Agencies :

AAI
- manages 127 airports in the country, which include 13 international airports, 7 custom airports, 80 domestic airports and 28 civil enclaves.
- There are over 450 airports and 1091 registered aircrafts in the country.

Ministry of Civil Aviation
- "Enable the people of India to have access to safe, secure, sustainable and affordable air services with world class civil aviation".

DGCA
- Endeavour to promote safe and efficient Air Transportation through regulation and proactive safety oversight system.

The total air traffic in India touched 85.6 million in 2010 as against 41.6 million in 2005. The cargo sector has also seen an increasing trend from 0.8 million tons in the year 2005 to 1.3 million tons in the year 2010. Similarly, aircraft movement increased from 838 thousand in 2005-06 to 1394 thousand in 2010-11. The total passenger throughput in India in 2010-11 grew to 87 million from 40 million in 2000-01. Airports Council International (ACI) estimates (2010-15) suggest that passenger traffic in India in 2015 shall be of the order of 177.71 million whereas as per long term forecasts by ACI (2008-27), the passenger traffic is likely to increase to 580.78 million in 2027, at a growth rate of 9.2% per annum.- 50%.

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