International Journal of Multidisciplinary Research and Development
Online ISSN: 2349-4182, Print ISSN: 2349-5979, Impact Factor: RJIF 5.72
www.allsubjectjournal.com
Volume 4; Issue 5; May 2017; Page No. 223-228

Indian civil aviation industry

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Abstract
Aviation as an industry is structurally extremely unattractive. It is very difficult to make profit in this industry. The industry is, weighed down by regulations, and influenced by several uncontrollable factors. The combined effect of these factors is historically the industry has never earned a rate of return above its investors' capital; in fact, it has destroyed more money than it has created. The main objective of the paper is to highlight the major characteristics of the industry. Factors such as cost of oil or security have direct impact on operational effectiveness and risk management of an airline company. Factors such as natural disasters or health emergencies and socio-political culture of a country too affect the financial health of the industry. The paper deals with Indian Civil Aviation Industry. This paper is a theoretical review. by providing some suggestions.

Keywords: aviation industry, foreign direct investment, infrastructure, regulation

Introduction
India's civil aviation industry is on a high-growth trajectory. India aims to become the third-largest aviation market by 2020 and the largest by 2030. The Civil Aviation industry has ushered in a new era of expansion, driven by factors such as low-cost carriers (LCCs), modern airports, Foreign Direct Investment (FDI) in domestic airlines, advanced information technology (IT) interventions and growing emphasis on regional connectivity. India is the ninth-largest civil aviation market in the world, with a market size of around US$ 16 billion. India is expected to become the third largest aviation market by 2020.

"The world is focused on Indian aviation – from manufacturers, tourism boards, airlines and global businesses to individual travellers, shippers and businessmen. If we can find common purpose among all stakeholders in Indian aviation, a bright future is at hand" said Mr. Tony Tyler, Director General and CEO, International Air Transport Association (IATA).

Research Methodology
The paper has been written on the basis of secondary data. The secondary data were collected from published books, journals, research papers, magazines, daily newspaper, internet and official statistical documents.

Ministry of civil aviation ("MCA")
The MCA is responsible for formulating national policies and programs that help develop and regulate the Indian civil aviation sector. It administers the Aircraft Act and Rules, and various other aviation related legislations. The MCA also exercises administrative control over entities like the Directorate General of Civil Aviation ("DGCA") 47 and the Airports Authority of India ("AAI"), and has the authority to enter into Bilateral Airline Service Agreements with other countries.

Till date, the MCA has issued several policies including the Policy on Regional and Remote Area Air Connectivity, Policy Guidelines of Air Freight Stations, Policy for Training of Officers under IATA Training Programs, and Policy on Airport Infrastructure, 2011. Most recently, the MCA has released a comprehensive National Civil Aviation Policy, 2016 ("NCAP 2016").

National civil aviation policy (NCAP) 2016
The Government of India released the National Civil Aviation Policy on 15 June 2016.The NCAP 2016 covers the broad policy areas, such as Regional connectivity, Safety, Air Transport Operations, 5/20 Requirement for International Operations, Bilateral traffic rights, Fiscal Support, Maintenance, Repair and Overhaul, Air-cargo, Aeronautical 'Make in India'. The broad key features of the NCAP are:

- VGF for operation under Regional Connectivity Scheme (RCS).
- Revival of un-served or under-served routes under RCS.
- Introduction of a new Category 'Schedule Commuter Operator' under Commercial Air Transport Operations.
- Rationalization of Category-I routes under Route Dispersal Guidelines (RDGs) on the basis of criteria given in NCAP 2016.
- The requirement of 5 years and 20 aircraft for international operation has been modified to 0 years and 20 aircraft or 20% of the total capacity (in terms of average number of seats on all departure put together) whichever is higher for domestic operations.
- Liberalization of domestic code share points in India within the framework of ASA.

Vision
To create an eco-system to make flying affordable for the masses and to enable 30 crore domestic ticketing by 2022 and 50 crore by 2027, and international ticketing to increase to 20

crore by 2027. Similarly, cargo volumes should increase to 10 million tonnes by 2027.

Mission

Provide safe, secure, affordable and sustainable air travel for passengers and air transportation of cargo with access to various parts of India and the world.

Objectives

- Establish an integrated eco-system which will lead to significant growth of civil aviation sector, which in turn would promote tourism, increase employment and lead to a balanced regional growth.
- Ensure safety, security and sustainability of aviation sector through the use of technology and effective monitoring.
- Enhance regional connectivity through fiscal support and infrastructure development.
- Enhance ease of doing business through deregulation, simplified procedures and e-governance.
- Promote the entire aviation sector chain in a harmonised manner covering cargo, MRO, general aviation, aerospace manufacturing and skill development.

Global trends in civil aviation

Generally, during good years, airline traffic grows around 1.5-2 times the rate of growth of GDP. During downturns, the ratio turns negative, with traffic falling faster than GDP as seen during 1991 and 2001 slowdown. This ratio did turn negative in 2009again, as global revenue passenger kilometres (RPKM) shrank before staging a recovery in 2010.

IATA's global passenger traffic results for 2015 shows that demand in terms of RPKM rose 6.5% for the full year compared to 2014. This is the strongest result since the global financial crisis and well above the 10-year annual average growth rate of 5.5%. Economic fundamentals were weaker in 2015 due to the slowdown in China, continuing weakness in Europe etc., but these were nullified by the fall in oil prices.

Capacity of airlines in terms of Available Seat Kilometres (AKSM) grew by 5.6% last year. Load factors grew to a record annual high of 80.3%. While all regions in the world experienced positive traffic growth in 2015, carriers in the Asia-Pacific region accounted for one-third of the total annual increase in traffic. Cargo grew by 2.2% in 2015 compared to 2014 which is a slower rate of growth compared to the 5% growth in 2014. This is due to the sluggish trade growth in Europe and Asia-Pacific. The various regions of the world performed as follows: Asia-Pacific, which accounts for around 39% of freight traffic, expanded by a moderate 2.3%; Europe and North America, which between them comprise around 43% of total cargo traffic, were flat in 2015; Latin America suffered a steep decline (-6.0%); Middle East grew strongly, up 11.3%; Africa also saw modest growth of 1.2%. The freight load factor (FLF) fell to an average of 44.1% which compares unfavourably with the average of 45.7% in 2014.

Civil aviation in India

The Indian civil aviation sector is vital to the growth of Indian economy and enhances the globalization. Civil Aviation is a key sector facilitates the growth of business, trade and tourism, with significant multiplier effects across the economy. The civil aviation sector has several key subsegments:

- Airports
- Airlines
- Maintenance repair and overhaul (MRO)
- Air cargo and express industry
- Ground handling
- Aviation academies

This sector is helmed by the Ministry of Civil Aviation (MOCA) which is responsible for formulation of national policies and programmes for the development and regulation of the Civil Aviation sector in the country. The Vision for the MOCA is "Enable people to have access to safe, secure, sustainable and affordable air connectivity services with World Class civil aviation infrastructure".

This Ministry exercises administrative control over attached and autonomous organizations such as Directorate General of Civil Aviation (DGCA), Bureau of Civil Aviation Security (BCAS) and Indira Gandhi Rashtriya Udan Academy and affiliated Public Sector Undertakings like National Aviation Company of India Limited, Airports Authority of India and Pawan Hans Helicopters Limited.

Evolution of the Indian aviation industry

India is the 9th largest civil aviation market in the world, In FY17, civil aviation sector witnessed a growth rate of around 2025 per cent. As of FY16, airports in India witnessed a domestic passenger traffic of about 168.89 million people. Investments worth USD 6 billion are expected in the country's airport sector in 5 years. India's civil aviation market is set to become the world's 3rd1 largest by 2020 and expected to be the largest by 2030.

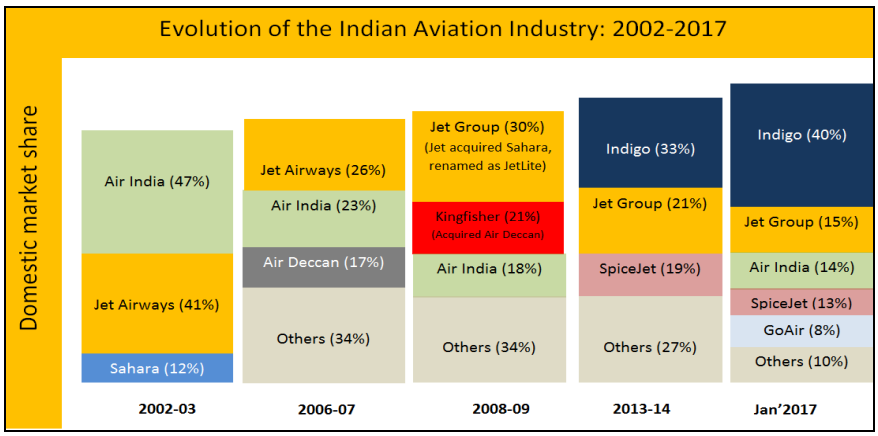

Fig 1

India is the ninth largest civil aviation market in the world with a market size of USD16 billion and aims to become the 3rd largest market by 2020 and the largest by 2030. This is possible due to a host of factors including increased competition, low cost carriers, modern airports which are expanding, improved technology in both air side and city side operations, Foreign Direct Investment (FDI) and increased emphasis on regional connectivity.

International passengers grew by 7.6% during the period from Apr 2015 to Jan 2016 to 45.4 million. Domestic passengers grew by 20.6% over the same period last year to touch 138.8 million passengers. Cargo grew by 6.1% to 2.2 million tonnes while Air Traffic Movements (ATM) for the period were 1.48 million, an increase of 10.9% over the same period last year**.**

Key growth drivers

Civil aviation sector is vulnerable to economic cycles, oil price volatility, natural disasters, epidemics and political upheavals. The Indian civil aviation industry has managed to exhibit resilience to the recent global economic slowdown. Some of the key developments during the last decade, which aided the growth of the Indian aviation, include the following:

a. Domestic 'open-skies policy', which allowed several new carriers to enter the market
b. Arrival of Low Cost Carriers (LCC) in India with the launch of Air Deccan, and, subsequently by Spicejet, IndiGo and Go Air
c. Airport modernization planscombined with encouragement of greenfield airport development
d. Liberalization of the international sector with private players permitted to operate overseas, albeit with the 5/20 restriction i.e. 5years of domestic operation and a fleet of 20 aircraft.
e. Greater access of foreign carriers and opening up of international routes at regional airports
f. Increased foreign direct investment limits for airlines and other sub-sectors of the industry like airports, air cargo, ground handling etc.

Indian aviation market

India has a huge untapped domestic market. The growing per capita and propensity to fly makes Indian aviation attractive. International Air Transport Association estimates an amount of 140 billion dollars in the next 20 years for Indian aviation to keep pace with the growing demand. National carrier Air India requires 1.32 billion dollars and other private airlines need 1.18billion dollars to escape from the immediate debt. Government is not in a position to fund this huge amount. The alternative left is to push FDI in airlines to get fresh funds. Government need not have to dilute the ideological stand in airline FDI issue. Strict norms can stop exploitation and misuse of resources. They can consider norms for investing a fixed percent of FDI share on ground also to prevent immediate pull out. During January-August 2016, domestic air passenger traffic rose 23.14 per cent to 64.47 million from 52.36 million during the same period in 2015. Passenger traffic during FY 2015-16 increased at a rate of 21.3 per cent to 85.57 million from 70.54 million in the FY 2014-15.

In July 2016, total aircraft movements at all Indian airports stood at 168,400, which was 14.3 per cent higher than July 2015. International aircraft movements increased by 8.2 per cent to 32,830 in July 2016 from 30,330 in July 2015. Domestic aircraft movements increased by 15.8 per cent to 135,570 in July 2016 from 117,050 in July 2015.

Indian domestic air traffic is expected to cross 100 million passengers by FY2017, compared to 81 million passengers in 2015, as per Centre for Asia Pacific Aviation (CAPA). India is among the five fastest-growing aviation markets globally with 275 million new passengers. The airlines operating in India are projected to record a collective operating profit of Rs 8,100 crore (US$ 1.29 billion) in fiscal year 2016, according to Crisil Ltd.

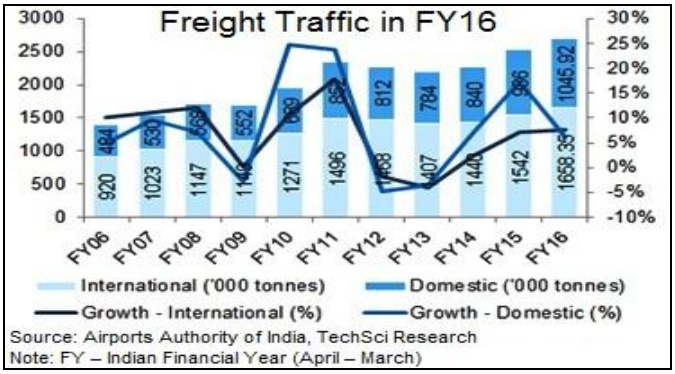

Fig 2

Investment

According to data released by the Department of Industrial Policy and Promotion (DIPP),FDI inflows in air transport (including air freight) between April 2000 and March 2016 stood at US$ 931.05 million.

Key investments and developments in India's aviation industry include:

- Airbus SAS has signed an agreement with Karnataka-based Aequs Aerospace, an aircraft component maker, for the supply of over 100,000 titanium machined parts for its A320 new engine option (NEO) aircraft.
- Boeing Company, an American plane maker, and Tata Advanced Systems Ltd (TASL), a fully owned subsidiary of Tata Sons, have entered into a joint venture to set up a new facility in Hyderabad to manufacture Boeing AH-64 Apache helicopter fuselages.
- GoAir, India's fifth-biggest carrier by passengers travelled, has signed a memorandum of understanding (MoU) with Airbus to buy 72 A320neo aircrafts, valued at US$ 7.7 billion, as part of an expansion drive.
- Lockheed Martin Corporation plans to make India a manufacturing base for its F-16V fighter jets, C-130J Super Hercules military transport planes and helicopters.
- Auto components maker Bharat Forge Ltd (BFL), the flagship company of the US$ 3 billion Kalyani Group, has formalised agreement with Rolls-Royce Plc, under which BFL will supply critical and high integrity forged and machined components for a range of aero engines.
- The Ministry of Civil Aviation has signed Memorandum of Understanding (MoU) with Finland, Kazakhstan, Kenya, Sweden, Norway, Denmark, Oman and Ethiopia for increased co-operation between the countries in terms of additional seats, sharing of airlines codes, increased frequencies and additional points of call, during the International Civil Aviation Negotiations (ICAN),2015 held in Antalya, Turkey.
- Tata Advanced Systems (TASL) has signed a joint venture

with American aircraft manufacturing major, Boeing, to establish a centre of excellence for manufacturing aerostructures for Apache helicopter initially and collaborate on integrated systems development opportunities in India in the long term.

- US-based aircraft manufacturer Boeing plans to assemble one of its two helicopters namely, Chinook (heavy-lift) or Apache (attack type) in India, thus becoming yet another global company to invest in India encouraged by the 'Make in India' campaign.
- Airbus, leading European aircraft manufacturer, plans to invest US$ 40 million to set up a pilot and maintenance training center in New Delhi, which will be operational by the end of 2017.
- Airbus also expects India's aviation industry to grow at over 10 per cent annually in the next decade, almost double the average growth rate of the global aviation industry.

Opportunities for foreign investment in the aviation industry

Foreign investment in India is governed by the provisions of the Foreign Exchange Management Act, 1999 ("FEMA"), the regulations made there under by the Reserve Bank of India ("RBI"), and the Industrial Policy and Procedures issued by the Department of Industrial Policy and Promotion, the Secretariat for Industrial Assistance, the Ministry of Commerce and Industry, and the Central Government (the "FDI Policy").

Foreign investors are permitted under the FDI policy to invest in helicopter services/seaplane services, ground handling services, maintenance and repair organizations, flying training institutes, and technical training institutions. However, the most significant foreign direct investments have traditionally been undertaken in airports and airline operators.

Investment in airline operators

A significant amount of the total FDI in the Aviation sector is made in companies operating Scheduled and Non-Scheduled domestic passenger airlines. Scheduled Operators provide air transport services between two or more places and operate according to a published time table or with flights so regular or frequent that they constitute a recognizably systematic series, each flight being open to use by members of the public. Whereas, Non-Scheduled Operators provide air transport services that may be on charter basis and/or a non-scheduled basis. Such operators are not permitted to publish time schedules or issue tickets to passengers.

To obtain status as a Scheduled or Non-Scheduled Operator the applicant must either be an Indian citizen, or a company which has its principal place of business within India, its chairman and at least 2/3 of its directors must be citizens of India, and its substantial ownership and effective control should be vested in Indian nationals.

FDI in Civil Air Transportation Services

Up to 49% FDI is permitted in Scheduled Air Transport Services/Domestic Scheduled Passenger Airlines and Regional Air Transport Services through the automatic route. NRI's are permitted a full 100% FDI in these segments under the automatic route.

Further, 100% FDI is also permitted in No Scheduled Air Transport Service and Helicopter and Sea Plane Services requiring DGCA permission through the automatic route.

FDI by Foreign Airlines

Prior to 2012 foreign airline companies were prohibited from investing in both Scheduled and Non-Scheduled airlines. However, pursuant to Press Note 6 of 2012 issued by the Ministry of Commerce and Industry, the Government opened the segment to FDI by foreign airlines. Currently, FDI is only permitted up to 49% of the company's paid up capital, and must be done through the government approval route. Further, the cap of 49% includes both FDI and FPI/FII investments. All foreign nationals likely to be associated with the Scheduled and Non-Scheduled air transport service must first obtain security clearance and all technical equipment imported as result of the investment shall require clearance from the Ministry of Civil Aviation. It should also be noted that to acquire a Scheduled or Non-Scheduled Operator's permit, substantial ownership and effective control and management of the company must remain within India.

FDI Guidelines for the Indian Aviation Sector

Domain	FDI Cap	Approval Requirement
Airports – greenfield projects	100%	Automatic*
Airports – existing projects	100%	Automatic
Scheduled air transport service/ Domestic scheduled passenger airline	100% (49% for foreign airlines, 100% for non-airline players)	Automatic up to 100% (Non-resident Indians) Automatic up to 49%, government approval beyond 49% (foreign investors)
Non-scheduled air transport service	100% (49% for foreign airlines, 100% for non-airline players)	Automatic up to 49%, government approval beyond 49% (foreign investors)
Helicopter services/ Seaplane services requiring DGCA approval	100%	Automatic
Ground handling services subject to sectoral regulations and security clearance	100%	Automatic
Maintenance and repair organizations; flying training institutes; technical training institutions	100%	Automatic

Source: UK India Business Council and recent announcements made by the Indian Civil Aviation Ministry in June 2016
Note: Information published by the government of India in May 2015.
**Automatic: Entry allowed without prior approval from the government or the Reserve Bank of India*

Fig 3

Government Initiatives

Government agencies project that around 500 brownfield and Greenfield airports would be required by 2020. The private sector is being encouraged to become actively involved in the construction of airports through different Public Private Partnership models, with substantial state support in terms of financing, concessional land allotment, tax holidays and other incentives.

In the Union Budget 2016-17, the government introduced various proposals for Maintenance, Repair and Overhaul (MRO) operations for airplanes. These include customs and excise duty exemption for tools and tool-kits used in MRO works. The government has also scrapped the one-year restriction for utilisation of duty free parts apart from allowing import of unserviceable parts by MROs for providing exchange. As per revised norms, the foreign aircraft brought in to India for MRO work would now be permitted to stay up to six months or as extended by aviation regulator Directorate General of Civil Aviation (DGCA). Such foreign aircraft would also be henceforth permitted to carry passengers in the flights at the start and end of its period of stay in India.

Some major initiatives undertaken by the government are:

- The Ministry of Civil Aviation has finalised and put forward for approval to the Union Cabinet, the new aviation policy, which includes proposals such as allowing new airlines to fly abroad, introduction of more regional flights and a new formula for granting bilateral flying rights.
- The Indian Space Research Organisation (ISRO) has signed a memorandum of understanding (MoU) with the Airports Authority of India (AAI), aimed at providing space technology for construction of airports.
- The Government of India is planning to boost regional connectivity by setting up 50 new airports over the next three years, out of which at least 10 would be operational by 2017.
- Airports Authority of India (AAI) plans to develop city-side infrastructure at 13 regional airports across India, with help from private players for building of hotels, carparks and other facilities, and thereby boost its non-aeronautical revenues.
- Directorate General of Civil Aviation (DGCA), India's aviation regulator, has signed an agreement with United States Technical Development Agency (USTDA) for India Aviation Safety Technical Assistance Phase II, aimed at bringing in systemic improvements in the area of operation, airworthiness and licensing.
- The Government of India has given site clearance to Delhi Mumbai Industrial Corridor and Development Corporation (DMICDC) for setting up of a Greenfield Airport for public use near Bhiwadi in Alwar district of Rajasthan and has granted 'in-principle' approval to 13 other greenfield airport projects.
- The Airports Authority of India (AAI) plans to revive and operationalise around 50 airports in India over the next 10 years to improve regional and remote air connectivity.
- Gujarat is expected to get a second international airport at Dholera. The state government has formed Dholera International Airport Co. Ltd. and is obtaining approvals from the union government.
- The Directorate General of Civil Aviation (DGCA) has given its approval to Air India's maintenance, repair and overhaul (MRO) unit.
- The Government of India has decided to award airports in Kolkata, Chennai, Jaipur and Ahmedabad on management contract. AAI has issued the 'Request for Qualification' document for these four airports.

Economic benefits of aviation industry

The linkage between growth in aviation and its impact on economic and social development is well recognized. According to the International Civil Aviation Organization (ICAO), every USD 100 expenditure in air transport produces benefits worth USD325 for the local economy. In addition, every 100 additional jobs in air transport result in 610 new jobs created in the local economy.

Some of the key economic benefits of air transport sector are

a. Over 3.7 billion passengers will fly this year. Thus, aviation is a key enabler for the global economy.
b. Air transport facilitates world trade - each day USD 16 billion worth of goods are transported by air which is 1/3rd of all global trade by value.
c. Air transport is indispensable for tourism, which is a major growth engine for developing economies like India. International Air Transport Association (IATA) estimates that over 53% of international tourists now travel by air.
d. The air transport industry is a major generator of employment and economic activity in a country. 3.4 per cent of the global economy relies on aviation. According to IATA, the aviation industry generates a total of almost 58 million livelihoods globally. The aviation industry directly employs 8.7 million people, creates 9.7 million indirect jobs through purchase of goods and services by companies in its supply chain, 4.6 million induced jobs through spending by aviation industry employees and 35 million direct and indirect jobs through catalytic impact of air transport on tourism sector.
e. The contribution of air transport to the global economy is estimated at USD 2.4 4 trillion, including direct, indirect, induced and catalytic effects of tourism.

Findings of the study

a. India is among the five fastest growing aviation markets globally with 275 million new passengers travelling and will displace the United Kingdom as the third largest in 2026. Domestic air passenger flow was 81.09 million in 2015, compared with 67.38 million in 2014, witnessed a growth of 20.34 per cent on Y-o-Y basis, which is highest among the top seven domestic airline markets in the world, outpacing China.
b. ASEAN constituted about 16 per cent of international passenger flow from and to India in 2015. However, the distribution of passengers between ASEAN countries and India is skewed. Flow of ASEAN passengers coming to India has been much lower than the Indian passengers going to ASEAN or transit through ASEAN. Hubs like Bangkok, Singapore and Kuala Lumpur equipped with bigger and performing airlines continue to attract passengers and air cargos from India. Today, out of 10 ASEAN countries, only five ASEAN countries like Malaysia, Myanmar, Singapore, Vietnam and Thailand

have direct flights with India and vice versa. For the rest five ASEAN countries (Cambodia, Indonesia, Lao PDR, the Philippines, Brunei), there is no direct flight but have inter-connection from other airports, of which Indonesia and the Philippines are two prominent ASEAN countries with which India has substantial business and tourism interests.

c. India's airlines such as Air India, Air India Express, Jet Airways, Indigo and Spice Jet carry on average 37 per cent of the total international passenger flows from and to India, out of which, about 5.5 per cent of passengers are carried between India and ASEAN countries. Airlines from ASEAN countries carry twice the size of international passengers from and to India, compare to the passengers carried by all Indian airlines together. In ASEAN countries, airlines are mostly from Singapore (Singapore Airlines, Silk Air and Tiger Airways), Malaysia (Air Asia, Malaysia Airlines and Malindo Airways) and Thailand (Thai Airways and Bangkok Airways).
d. Airlines having direct flights between Bangkok, Kuala Lumpur and Singapore and Indian metro cities have reasonably higher frequencies, compare to Tier I cities. However, Tier I cities in southern part of India are relatively better connected with Singapore and Kuala Lumpur, mostly by ASEAN airlines. Therefore, seat capacity utilisation is strongly in favour of ASEAN airlines of about 80-90 per cent, whereas utilisation rate of Indian airlines is about 43-45 per cent each between India and Singapore and India and Bangkok. Poor utilisation rate of about 3.48 per cent seat capacity has been witnessed between Indian cities and Kuala Lumpur.
e. It is in our interest to ensure that air connectivity between ASEAN and India keep up with soaring traveller demand. With more flights to more destinations, business people will travel more, and so will tourists. As passenger traffic goes up, business will increase and investments will follow in that cyclical order. Our airlines will, therefore, have to be ready to serve the rising demand of air services between India and ASEAN.

Conclusion

India has very high potential in the aviation Industry but still it is going through tough time. Indian aviation Industry has high growth rate as disposable income of the people is growing and most of the people tending to upgrade their lifestyle. The government and industry need to work closely to address the various opportunities and challenges in the aviation sector. With the right policies and a relentless focus on quality, cost and passenger interest, India would be well placed to achieve its vision of becoming the third largest aviation market by 2020 and the largest by 2030.

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