CAPA INDIA

CAPA: India under-prepared for major airport capacity challenge

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CAPA: India under-prepared for major airport capacity challenge, requires US$40 billion investment in 50 greenfield airports by 2025

In a recent report CAPA has found that India is under-prepared for the growth challenges ahead and will need to plan for massive investment of up to US$40 billion in airport development by 2025, including the construction of up to 50 greenfield airports.

Transformational growth ahead

Indian aviation is set for transformational growth. CAPA projections show airport passenger traffic growing from 143 million in 2010/11 to 452 million by 2020/21. Over the same period the scheduled airline fleet is expected to grow from 430 to 1,030 aircraft, while general aviation could see even faster growth from 750 to over 2,000 aircraft. These forecasts are based on an average GDP growth rate of 8% per annum, however if India achieves its target rate of 9% the demand for air travel could increase even faster.

The incremental growth in Indian domestic airport passengers in the last decade is striking. The increase between 2001 and 2011 was three times the growth that had been achieved in the previous 50 years. And with strong growth expected to continue, but this time off a dramatically expanded base, the task ahead is enormous.

Incremental Domestic Passengers Handled at Indian Airports by Decade since 1951
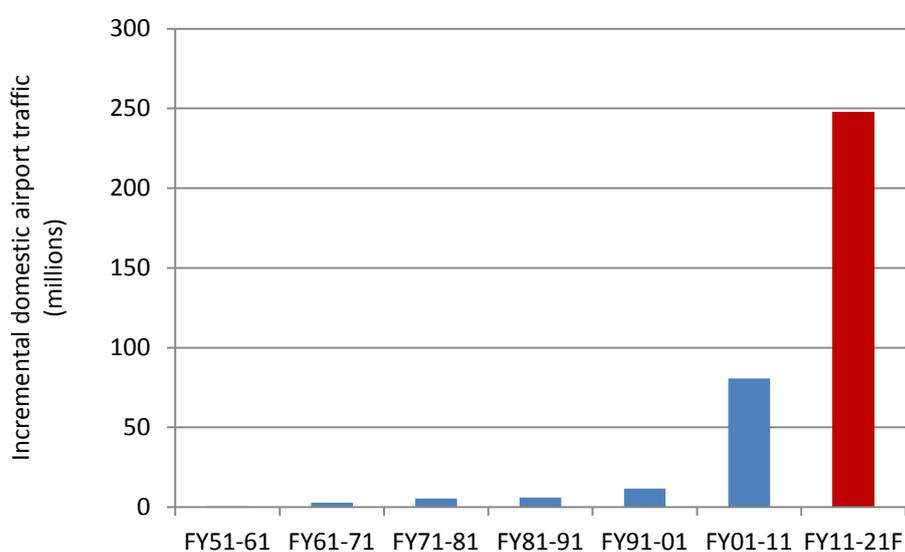

Source: CAPA (FY21 data is a CAPA projection), DGCA

The growth projections for India are staggering, but they are not without precedent. China's airport traffic grew from 134 million to 564 million passengers in the ten years from 2000 to 2010. India reached a similar base of 143 million passengers in 2010 and CAPA is projecting traffic of 452 million by 2020, slightly slower growth than was achieved in China.

This rate of growth will require huge investment in airport and other infrastructure, but our analysis indicates that India is currently under-prepared to meet these challenges.

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Comparison of Airport Traffic Growth in India 2010-2020 v. China 2000-2010
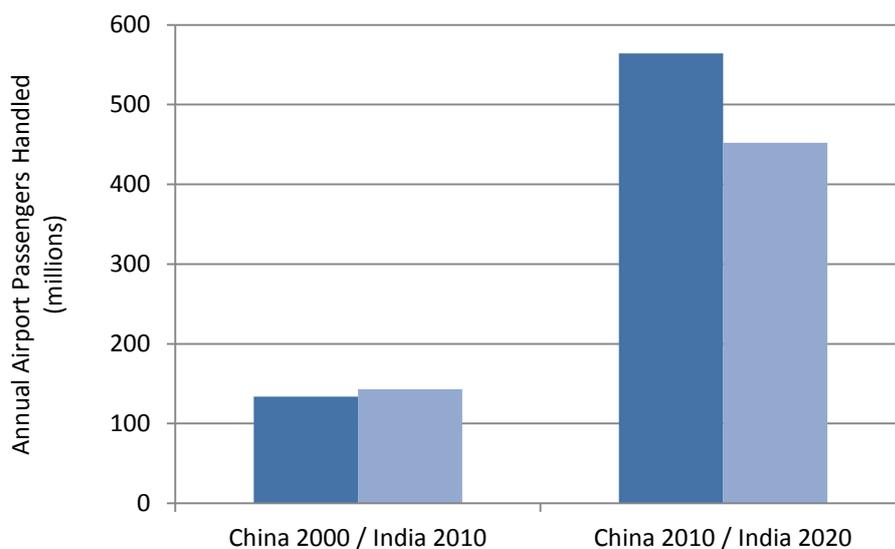
Source: CAPA, AAI, CAAC

India needs massive investment in infrastructure

In the 11th Five Year Plan period from 2007-2012, US$425 billion was invested in overall infrastructure, which fell short of the planned US$500 billion. The private sector was expected to contribute 50% of this capital, adopting a debt:equity ratio of 70:30.

During this period the private sector played an unprecedented role in terms of its contribution to the development of airports which, with one exception at Cochin, had previously been the exclusive domain of the state-owned airport operator. Total investment by private airport operators in the construction of greenfield airports at Bangalore and Hyderabad, and the modernisation and expansion of Delhi and Mumbai airports, totalled INR300 billion (USD5.4 billion). At the same time the Airports Authority of India (AAI) invested INR125 billion (USD2.3 billion) in upgrading Chennai, Kolkata and 35 non-metro airports.

India's 12th Five Year Plan from 2012-2017 was initially expected to see planned infrastructure investment of US$1 trillion, however this assumed an average GDP growth rate of 9% per annum. With recent moderation to below 7% and the likelihood that growth will remain below target for the next 12-18 months, planned expenditure has been reduced to US$800 billion. Estimated investment in the airport sector is set at INR675 billion (USD12.7 billion) of which almost 75% is expected to be contributed by the private sector.

Domestic funding will not be sufficient to support this level of activity. But if foreign investment is to be attracted, India will need to provide external capital with greater confidence with respect to market risks. This will require clarity on the regulatory framework, improved governance, enhanced coordination between stakeholders and stronger execution capabilities. At a time when global capital is limited and risk aversion has increased due to the European debt crisis, India is competing with other investment destinations and needs to focus on creating an enabling and predictable environment.

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Airport infrastructure requirements are significantly underestimated

Overall investment requirements in airport infrastructure are significantly underestimated. But what is of greatest concern is that in an industry which requires a long term horizon looking 20-30 years ahead, there is no capacity plan for the Airports Authority of India (AAI) beyond 2017. And even this is largely theoretical in nature, since an in-depth structural capacity review has not been conducted. If the base infrastructure assessment is incorrect, the forward plans will not be appropriate.

The recent slowdown in growth has taken some of the attention away from such issues, but this is a short-term phenomenon. It will not be long before India resumes sustained double digit traffic growth and at many airports across the country capacity constraints will be encountered sooner rather than later. Since airport capacity cannot be created overnight there is a need to adopt a proactive approach to airport development, identifying and preparing for potential constraints. Private operators are understandably keen to maximise the throughput of their airports before competing facilities are built. Efficient use of infrastructure is desirable, but there must be greater transparency of the airport master plans, and preparing for the future must not be left too late.

Land scarcity will be the key challenge

Land scarcity will be the major challenge for airport development in India in the coming years. India is already facing a shortage of land, particularly in the larger towns and cities, and this issue will only intensify with the increase in urbanisation. McKinsey estimates that India's urban population will grow from 20% of the total in 1991 to 37% by 2025. By 2030 India is expected to have 55 cities with a population of more than 1 million.

Airports have massive land requirements and will have to fight with other users of land, for what will be an increasingly expensive asset. In fact, the cost of land may ultimately impact the viability of many airport projects. And if airports are pushed to the extremities of cities because of the cost and availability of land, significant investment will be required in surface transportation options. Distant airports which are difficult to access will deter some traffic and consequently economic opportunities will not be maximised.

The Land Acquisition Bill which will shortly be considered by Cabinet will lead to a further increase in prices as the legislation seeks to protect the rights of landowners whose property is acquired for major projects. Navi Mumbai and Nagpur airports have been held up because of protracted negotiations on the fair market price for the required land parcels. In the case of Navi Mumbai acquisition costs are set to increase to USD1 billion, a figure which could impact the project viability.

CAPA believes that is critical to start the process now of identifying and allocating land for future airport development across all Indian states. For example, although the Greater Noida Airport project in Uttar Pradesh is not proceeding for now, the land allocated to the airport should not be released for other use as a second Delhi airport will be required in the 2020s by which time land will not be easily available.

The Airports Authority of India has identified the need for additional land at numerous existing airports in order to carry out planned upgrades and expansion. The AAI has submitted requests to the relevant State governments. The table below identifies the nature of the request and the government response.

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State	Airport		Land Requested by AAI	State Government Reaction
Andhra Pradesh	▪	Kadapa	37 acres	Positive
	▪	Rajahmundary	966 acres	Positive
	▪	Tirupati	425 acres	Positive
	▪	Vijayawada	465 acres	Positive
	▪	Warrangai	435 acres	Under Consideration
Arunachal Pradesh	▪	Daparizo	34 acres	No Response
Assam	▪	Dibrugarh	227 acres	Negative
	▪	Guwahati	215 acres	Under Consideration
	▪	Jorhat (CE)	77+9 acres	Negative on 77 acres, partially positive on 9 acres
	▪	Lilabari (North Lakhimpur)	25 acres	Positive
Bihar	▪	Gaya	200 acres	Positive
	▪	Patna	227 plus shifting of railway track	Land request Under Consideration but shifting of railway track not accepted.
Chhattisgarh	▪	Raipur	2206 acres	Under Consideration
Goa	▪	Goa	20 acres	Positive
Gujarat	▪	Ahmedabad	67 acres	Under Consideration
	▪	Bhavnagar	490 acres	Under Consideration
	▪	Jamnagar	17 acres	No Response
	▪	Kandla	232 acres	Under Consideration
	▪	Porbandar	276 acres	Under Consideration
	▪	Rajkot	52 acres	No Response
	▪	Surat	2632 acres	Positive
Himachal Pradesh	▪	Kangra	26 acres	No Response
Jammu & Kashmir	▪	Jammu	138 acres	Positive
Jharkhand	▪	Ranchi	582 acres	Positive

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	▪ Deoghar	53 acres	Positive
Karnataka	▪ Belgaum	370 acres	Positive
	▪ Hubli	Balance 27 acres	Positive
	▪ Mangalore	55 acres	Positive
	▪ Mysore	122 acres + diversion of national highway	Under Consideration
Kerala	▪ Calicut	137 acres	Positive
	▪ Trivandrum	170 acres	Positive
Lakshadweep	▪ Agatti	10 acres	Positive
Madhya Pradesh	▪ Indore	2542 acres	Under Consideration
	▪ Jabalpur	469 acres	Positive
Maharashtra	▪ Akola	175 acres	Under Consideration
	▪ Aurangabad	245 acres	Under Consideration
Meghalaya	▪ Tura	57 acres	No Response
Nagaland	▪ Dimapur	279 acres	Negative
Orissa	▪ Bhubaneshwar	132 acres	No Response
	▪ Jharsuguda	413 acres	Positive
Rajasthan	▪ Bikaner	50 acres	Under Consideration
	▪ Jaipur	60 acres	Under Consideration
	▪ Kishangarh	442 acres	Under Consideration
	▪ Kota	14 acres	Response Awaited
	▪ Udaipur	145 acres	Under Consideration
Tamil Nadu	▪ Chennai	20 acres	Positive
	▪ Coimbatore	594 acres	Positive
	▪ Madurai	610 acres	Positive
	▪ Salem	563 acres	Under Consideration
	▪ Tiruchirapalli	439 acres	Positive
	▪ Tuticorin	586 acres	Positive
	▪ Vellore	1046 acres	Under Consideration
Tripura	▪ Agartala	303 acres	Partially Positive

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	▪ Kamalpur	51 acres	No Response
Union Territory	▪ Port Blair (Andaman & Nicobar Islands)	711 acres	Negative
	▪ Puducherry	386 acres	Positive
Uttarakhand	▪ Dehradun	167 acres	Under Consideration
	▪ Pantnagar	176 acres	Positive
West Bengal	▪ Bagdogra	118+23 acres	For 118 acres, negative. For 23 acres partially positive.
	▪ Behala	38 acres	No Response
	▪ Malda	61 acres	No Response

Source: CAPA. Please note that the information above is the latest available, however it may have changed since the data was sourced.

Airports are critical enablers of economic activity

Airports play a critical role in facilitating economic development. At present airport capacity is concentrated in the six metro cities, driving benefits to those states. The chart below shows that these states occupy six of the seven highest rankings for per capita airport passengers (Delhi is not shown in the chart below as it has an outlier result of 2.14 due it being a city state). Other state governments will need to play a more active role in encouraging airport development and air connectivity if they wish to drive growth and investment.

Per Capita Airport Traffic in States with the Highest Overall Traffic FY11 (Delhi is excluded)
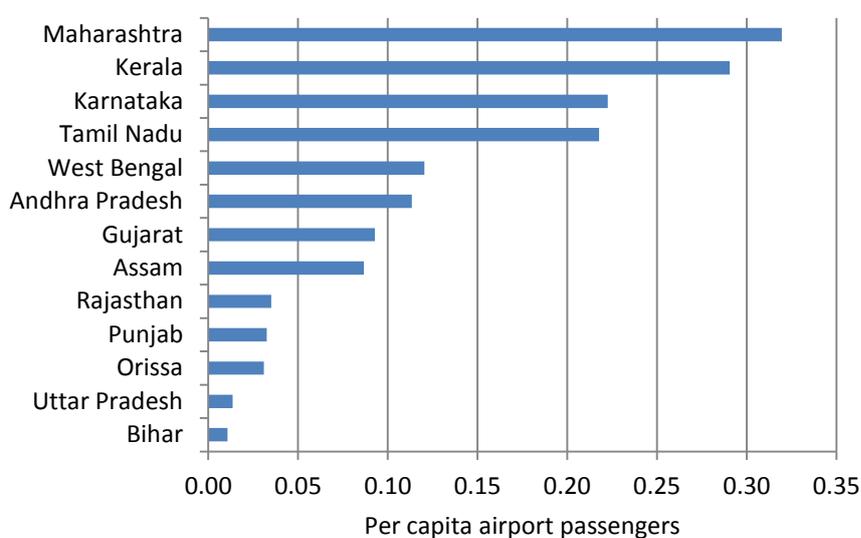

Source: CAPA, AAI

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Kerala has the highest per capita traffic ratio outside of the six states with metro airports, with a unique traffic mix dominated by international passengers due to the strong flows of expatriate labour between the state and the Gulf. This is followed by Gujarat, recognised as one of India's most industrialised states, it also has the largest number of operational airports.

In contrast, two of India's most populous states, Uttar Pradesh and Bihar, which have a combined population of 304 million are under-performers in air traffic. The sheer size of these states - Uttar Pradesh would be the sixth largest country in the world by population – make them pivotal for India's economic success.

Countries and Indian States with Populations in excess of 100 million
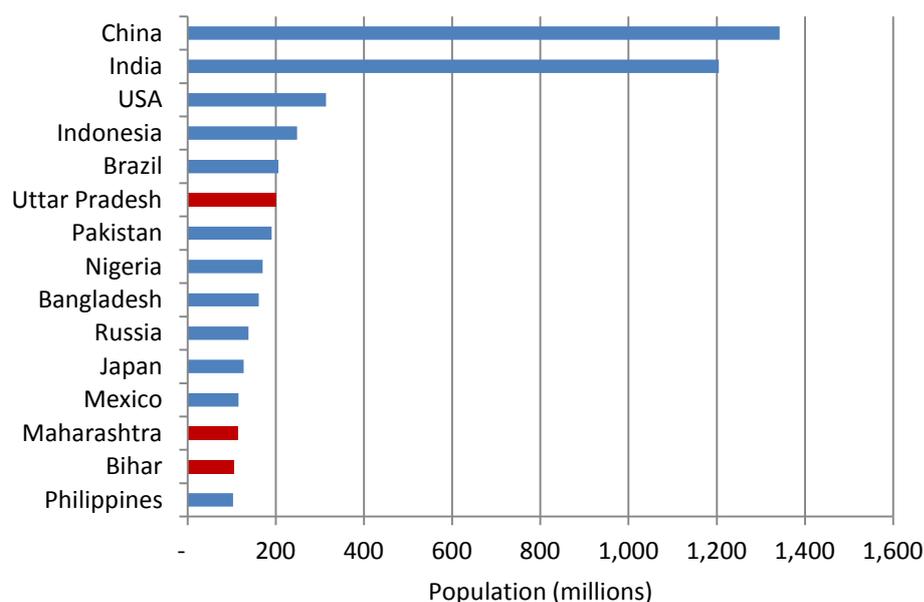
Source: CIA, Census India

India can only achieve 9-10% annual GDP growth if the economies of populous states such as Uttar Pradesh and Bihar perform strongly. Orissa is another key state which has huge untapped economic potential. But for this to happen they will need to develop their air capacity.

Despite having 25% of India's population residing in Uttar Pradesh and Bihar, their airports accounted for just 2% of total air traffic in FY11. Kanpur, the largest city in India's largest state, with a population of 3 million, has negligible air connectivity and is served by no more than two domestic departures a day, by regional aircraft.

And in the case of Bihar, the state is faced with the prospect of being virtually closed to air traffic. The state capital airport at Patna which accounts for almost 95% of traffic in the state, has recently been declared unsafe for narrowbody operations effective 16-Aug-12, due to a reclassification of the useable runway length. A proposal to develop a greenfield airport at Nalanda has been approved, but at almost 100km distance from Patna it is hardly a convenient alternative and it could be several years yet before it opens.

The state governments of both Uttar Pradesh and Bihar have ambitious plans to transform their economic performance. But without air capacity to provide connectivity and to support business,

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trade and tourism, their ambitions may be misplaced. Conversely, if these states can succeed, and they must, then the benefits for the entire Indian economy will be enormous.

Airport-wise Traffic in Uttar Pradesh and Bihar FY11

Airports in Uttar Pradesh	Total Traffic in FY11	Airports in Bihar	Total Traffic in FY11
Lucknow	1,576,000	Patna	839,000
Varanasi	557,000	Gaya	51,000
Allahabad	21,000		
Gorakhpur	18,000		
Kanpur	7,000		
Total Uttar Pradesh	**2,179,000**	**Total Bihar**	**890,000**

Source: CAPA, AAI

Meanwhile, states such as Himachal Pradesh and Uttarakhand, which are key tourist destinations have negligible air services to provide connectivity to their many scenic and religious attractions. Quite clearly there is a disconnect between the economic strengths and ambitions of many of India's states and the aviation infrastructure that is such a critical enabler. The states which face the most critical airport challenges are Andaman & Nicobar Islands, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Maharashtra, the Northeastern States, Orissa, Rajasthan and Uttar Pradesh.

**India's economic hub will face severe air capacity constraints**

Despite the fact that states with metro airports have relatively high per capita traffic, their performance in several cases also leaves significant room for improvement. In Maharashtra, which has India's largest state economy by a significant margin, the continued delays to the construction of a second airport in Mumbai will have major repercussions for economic activity. Meanwhile continued delays to the construction of a greenfield airport at Pune, Maharashtra's second largest city, mean that here too air services are being choked.

With the current Mumbai airport approaching saturation the need for a new airport has long been known. Construction should have commenced almost five years ago but instead the project remains on paper and there is no clarity with respect to the timing of when it will proceed. It seems unlikely that Navi Mumbai could open before 2017/18, while the current airport is likely to be severely constrained 3-4 years before that.

Even when Navi Mumbai does eventually open, a lack of coordination between the relevant authorities means that there could be limited surface transportation options to and from the airport. To make the airport a viable and convenient proposition for a large proportion of the population of the Mumbai Metropolitan Region will require investment of USD12-15 billion in ground transport infrastructure. These transportation links are not required solely for the airport, but the quantum of investment required does indicate the need for greater cooperation between stakeholders. And whilst the second airport is awaited, planning should already be commencing for a third airport which is likely to be required by 2025.

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Leading Indian State Economies FY12 (INR millions)
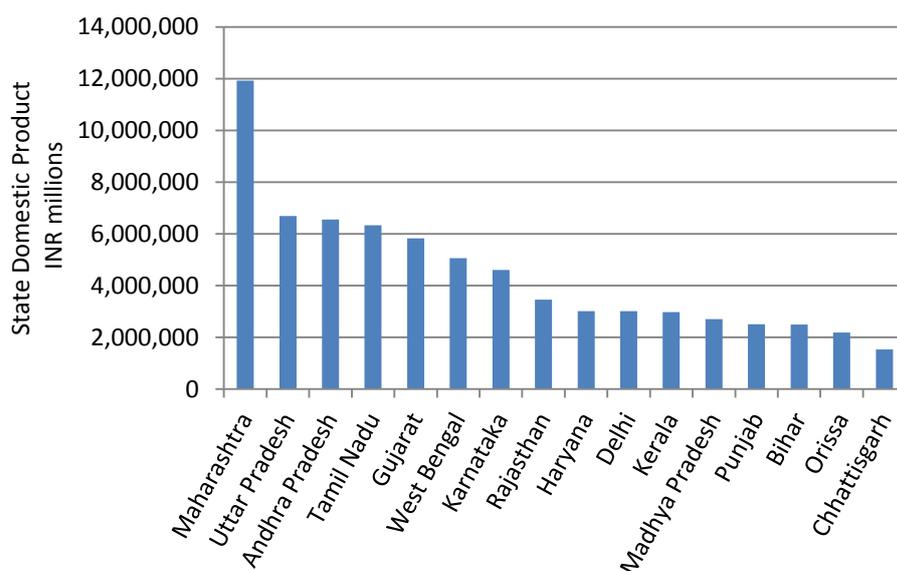
Source: CAPA, Indicus

It should be unimaginable that India's financial and commercial capital could be in this situation, but this is the reality. The state and central governments do not appear to have recognised the economic repercussions of these delays and both Maharashtra and India will pay dearly in terms of trade, investment and employment generation.

A long term aviation master plan is critical

Developing airports is an important objective, but this should be carried out within the framework of a national aviation master plan – integrated into an overall national transportation plan - which identifies clear economic reasons for building a new airport. At present it appears that new projects are being announced with overlapping or insufficient catchment areas and without regard for airspace issues or the potential for airlines to operate there. Surface connectivity is also a critical factor, we estimate that the investment required in ground transportation to/from airports could be almost as much as that in the airports themselves.

Several state governments have encouraged the development of small airports in Tier 3 cities. The objective of providing connectivity may be positive but if the project does not have a sound business case this represents an inappropriate use of scarce capital. Some private regional airport operators are already understood to be facing challenges with the projects they have undertaken.

In certain cases regional airports appear to be exercises in securing land for commercial activity, in others they are driven by political considerations such as the proposals to build airports at Meerut and Saifai. But all too frequently they seem to be floated without taking into account whether there is a market that can support viable air services and whether there are operators interested in launching such services. Ultimately a series of unviable airports will deter future investment in viable ones and is negative for the long term prospects for the sector.

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This situation has also arisen in the case of certain AAI airports. Significant capital has been invested in developing infrastructure at Mysore and Gondia and yet no airline has taken up the opportunity to launch services to these towns. Given the AAI's stretched finances, this represents wasted capital that could have been invested more productively elsewhere. At this point in time, India's interests are probably better served by improving infrastructure and connectivity at existing airports rather than building new facilities to small towns.

<u>CAPA proposes the establishment of an Airports Approval Commission within MOCA to review the business plans of proposed airports prior to granting clearance.</u> At present the thresholds for clearance are largely technical nature and do not take viability into consideration.

Airport development outside of the metros has been curbed to an extent because non-metro operations have not historically proven to be economically viable, only around 10% of the 80 operational Airports Authority of India airports are profitable. To have Delhi and Mumbai continually subsidise the non-metro airports is not a sustainable model. Turning this situation around will require a greater focus on commercial opportunities, from retail through to property development, an area which has been a weakness of the state-owned airport operator. <u>However, several non-metro airports are land constrained which limits the opportunities for city-side development, these include Agatti, Agra, Bhubaneshwar, Chandigarh, Dehradun, Goa, Jammu, Port Blair and Pune.</u>

AAI airports generate just 17% of revenue from non-aeronautical sources, compared with 40% at the public-private partnership airports (PPP). In addition, a new regional airline policy is required to drive traffic to smaller centres.

Cochin International Airport Limited (CIAL) was the very first PPP airport project in India, opening in 1999, seven years before Delhi and Mumbai Airport were awarded to private joint venture operators. CIAL was an initiative of the state government of Kerala, and a large proportion of the initial funding was raised from retail investors. It has been a profitable airport, which has focused on developing non-aeronautical revenues as well as controlling capital expenditure.

The state government is now seeking to replicate the Cochin model at a second location in Kerala, at Kannur. The pro-active and successful approach towards PPP airports in Kerala is an interesting feature in light of the fact that the state has largely been led by socialist or communist political parties. Cochin Airport serves as a valuable role model for other airport projects in India.

Cities Requiring Investment in Airport Infrastructure

Airport	Pax Traffic in 2011 (million)	Estimated Current Capacity (million)	CAPA Comments
Delhi	35.0	60 (potential to increase to 100 million by 2020)	Delhi will require a second airport by FY22 however work must start by FY18 and land identification must happen now. The land that had been allocated for the Greater Noida Airport project should be retained for the future even though the airport has been cancelled for now. Delhi will need an integrated LCC terminal

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			following the saturation of Terminal 1D which will be a structural challenge.
Mumbai	30.4	30 (will increase to 40m with new terminal in 2013/14)	Construction of second airport needs to commence as soon as possible as current airport will be saturated by 2014/15. Planning for a 3rd airport to open in the next 15 years needs to start now, especially with regard to securing the necessary land. Airspace constraints may inhibit the airport from being able to leverage additional terminal capacity at the current airport.
Bangalore	12.5	9.8	A second airport will be required by FY22 as Bangalore traffic growth is likely to be faster than projected in the master plan. Initial traffic forecasts have already been exceeded. Construction would need to commence by FY18, but a site must be identified now.
Kolkata	10.3	24.1	A second airport will be required by FY21, construction can start by FY17 but land needs to be identified now. The state government's focus on reviving industrial output might trigger an acceleration of traffic.
Chennai	12.8	23	Expected to saturate within 5 years, plans for a second airport are already under discussion but needs to be fast-tracked.
Hyderabad	8.3	12	Adequate capacity for this decade and possibly until 2025 but identification of land for second airport site should commence now.
Pune	3.2	2.3	Critical stage, desperately needs a new airport
Lucknow	2.0	2.4	Requires a new airport however a new terminal would serve as an interim measure.
Ahmedabad	4.7	8.0	As the gateway to one of the most robust state economies in India, the city needs to start planning for a new airport to be ready within the next 5 years. The strong Gujarat growth story could be impacted if airport capacity is

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			insufficient.
Cochin	4.7	10	Sufficient land for future expansion at the current site
Trivandrum	2.7	5.1	New terminal will assist however needs to start planning for a new airport soon.
Goa	3.4	7.5	New airport required in 5 years, work needs to start on Greenfield project at Mopa soon, critical for a tourism dependent economy.
Patna	1.0	0.3	Critical situation as the current airport has been identified as having safety challenges. A new airport is required urgently if the state – which has the lowest per capita income in the country - is to achieve its economic transformation goals. Inadequate focus on airport development will prove detrimental to growth.
Chandigarh	1.0	0.8	New terminal will help but planning for new airport is required. Economic growth in the region requires long term airport capacity.
Jaipur	3.5	1.6	Current airport is saturated, critical requirement
Calicut	2.2	3.4	Competing airport at Kannur may divert some traffic, but new terminal will be required and plans for a new airport should commence
Nagpur	1.4	1.1	Reaching saturation, requires a new terminal as a short term measure however planning for a new airport needs to commence soon.
Srinagar	1.5	2.0	Traffic rebound due to reduction in unrest is driving strong growth, new airport required.
Bagdogra	0.7	0.6	Critical, new terminal or extension is required, planning should commence for new airport.
Coimbatore	1.4	1.3	New terminal has opened as a short term measure but planning for a new airport is required.

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Trichy	0.9	1.0	Critical stage, new terminal has opened but a new airport is required
Mangalore	0.9	1.2	Critical stage, new terminal has opened but a new airport is required, although the new airport at Kannur will divert some traffic when it opens.
Amritsar	0.9	2.6	Long term planning for new airport required. The state of Punjab is lacking adequate international standard airport infrastructure.
Varanasi	0.7	2.0	New terminal will serve as a short term measure, but planning for new airport required
Port Blair	0.6	0.4	Critical situation, new airport is required
Madurai	0.5	1.1	Long term plan required
Gaya	0.08	0.6	Adequate infrastructure for the time being
Bhubaneshwar	1.2		A new airport is required to support projected growth, state government is seeking to classify as an international airport.
Jammu	0.9		A short runway makes this one of the most unsafe airports in India. Extension issues have not been resolved. A new airport is also required.
Shimla & Kullu			Both airports have been identified as having critical constraints and require new Greenfield facilities.

Several cities in India have airports that are civil enclaves within military airfields which limit their expansion opportunities and in some cases their operating hours. These airports include Srinagar, Goa, Pune, Bagdogra, Leh, Jammu, Pathankot, Chandigarh, Jaisalmer, Jodhpur, Bhuj, Jamnagar, Agra, Gwalior, Kanpur, Allahabad, Gorakhpur, Vizag, Tezpur, Jorhat and Silchar. With strong traffic growth the time is now approaching when for many of these cities the development of dedicated civilian airports needs to be considered as part of long term planning.

CAPA estimates that India will require up to US$40 billion of investment in airport projects by 2025, consisting of approximately US$20 billion for expansion of current metro airports, and construction

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of second airports in Mumbai, Delhi, Bangalore and Chennai. A further US$20 billion will be required to construct greenfield airports at most of the 35 largest non-metro cities – including large projects at Pune, Goa Mopa and Dholera – as well as at several cities which are not currently connected. In total India may require construction of 40-50 greenfield airports by 2025. Combined with upgrades to airspace infrastructure and ground transportation, total expenditure could reach US$70-80 billion.

And this is not a one-off requirement, as the traffic base grows, even moderating growth rates will continue to drive huge absolute increases in passengers and freight. In the 2020s, total airport passenger traffic could grow at an average of around 50 million passengers per annum generating large incremental capacity requirements. CAPA estimates that within the space of a generation, domestic Indian traffic could grow from 60 million passengers currently to approach 1 billion passengers by 2040. This is the kind of transformational growth which could occur but which India is currently under-prepared for.

Air Navigation Services must be a central element of long term planning

India must also invest in developing a world class ANS infrastructure with a rigorous focus on safety as the primary objective, while maintaining cost efficiency and environmental awareness.

In order to achieve this, the AAI will need to make significant investments in technology, people and training. Not only are the capital requirements massive – possibly up to USD6-7 billion - but there is virtually a need for a completely new culture which will require a focused approach.

The AAI has performed its responsibilities as the Air Navigation Services Provider with great care and commitment. However, given the expected future direction of the sector, and in line with international trends, perhaps the time is now approaching to develop a new funding and governance model of corporatisation rather than ad hoc revisions to the existing structure.

Many questions about the nature of airport development are still to be answered

Greater coordination is required between state and central government planning departments, as is wider consultation with key stakeholders. This consultation will be necessary to answer several key questions about the nature of airport development in India, which include:

- Who will decide what kind of airports India needs, where does that authority lie?
- Should they be developed by the AAI or through a PPP model?
- What is the long term role of the AAI? The authority has many strengths, particularly in airport development, project management and airside operations, but commercial weakness needs to be addressed and corporatisation would be a way of instilling the necessary disciplines?
- How do you ensure the viability of the business model of proposed airport projects to avoid duplication of capital?
- In the next 15 years all of the metro cities will have, or will be planning for, a second airport (in the case of Mumbai it could be a third airport). How do we prepare a policy framework for such a scenario?
- When a new airport is built in a city, do you close the original airport, or have two competing facilities? If you close the airport what do you do with that infrastructure and who decides?

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- How do you generate greater appreciation on the part of airlines and airports of each other's business model and challenges?
- What is the appropriate process for approving new projects?
- If a PPP model is used, what is the agreed economic regulatory framework – transparency and predictability are central to this question – which balances consumer expectations and investor returns?
- How do you develop a policy, regulatory and operating environment which supports the overall viability of the aviation sector?
- How do you deal with land acquisition issues and environmental activism?
- How do you address airspace capacity requirements?

The underlying conclusion of the analysis is that the development of an integrated national master plan is imperative to replace the current ad hoc approach. There is a need to adopt a new proactive mindset which does not wait for current infrastructure to become saturated before planning for expansion, but instead starts to anticipate future requirements ahead of time.

About the CAPA India Aviation Master Plan 2040

This paper is based on the CAPA India Aviation Master Plan 2040 which is due for release in March 2013. The Master Plan will include a detailed state-by-state analysis of aviation activity and will consider infrastructure and transportation development programs; airport development requirements in each state; and prospects for international, domestic, freight and general aviation. The Master Plan will be a **practical and implementable roadmap**, identifying staged objectives, opportunities and actions for 2020, 2030 and 2040.

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