Confederation of Indian Industry
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Karnataka -
Aerospace Hub of India

PRICEWATERHOUSECOOPERS

Contents

Preface

I am pleased to present the PricewaterhouseCoopers-CII report on "Karnataka- Aerospace hub of India".

The Aerospace industry is important to India's strategic and economic interests and is characterized by high growth potential. This report captures the perspectives, key developments and drivers in the Indian aerospace sector and the challenges and the opportunities the sector offers. Karnataka in turn is becoming a critical destination in the aerospace value chain.

Karnataka provides a balanced ecosystem for manufacturing and services companies. While many large firms like operate from Bangalore, other new companies are establishing operations in the city's outskirts, in key industrial belts surrounding Bangalore and in north Karnataka. The growth of other allied industries has also helped the aviation manufacturing industry .The State is also unique as it has a large density of aerospace institutions and has the potential of developing into an innovation and R&D hub .

We trust this report would provide an insight to existing and prospective investors with regard to opportunities in Karnataka with its potential to absorb investments in aerospace manufacturing, MRO and engineering design and R&D Sector.

We would also thank CII for giving us an opportunity to present the perspectives and opportunities for the sector in Karnataka and for their help in conducting the survey.

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Executive Summary

India's Aerospace Industry

Propelled by an increase in defence spending and a growing commercial aviation market the Indian aerospace industry has become one of the fastest-growing aerospace markets in the world. The rapid growth of this industry has attracted major global aerospace companies to India and has incentivised domestic aerospace players to increase and deepen operations.

- India as a Manufacturing Destination - The PricewaterhouseCoopers study entitled Changing Dynamics—India's Aerospace Industry indicates that India is rapidly building capabilities to emerge as a preferred destination for manufacturing of aerospace components. India has skills and competencies in areas that include engineering, production, etc. These capabilities have been recognized and harnessed by foreign companies outsourcing manufacturing work to India. A potential opportunity exists in demonstrating India's expertise in the process beginning right from initial design and ending with the final manufacture; this is where India's real and sustainable advantage exists.
- India as a Maintenance, Repair Overhaul ('MRO') Destination - As a support service to the aviation industry, the opportunity to provide MRO activities will grow with the industry. India's MRO segment is estimated to grow at 10 percent and reach USD 1.17 billion by 2010 and USD 2.6 billion by 2020. Establishing MRO facilities in India will enable operators to achieve faster turnaround times, savings in operating costs and a decline of foreign exchange outflows.

Karnataka's Aerospace Industry

With the establishment of Hindustan Aeronautics Limited (HAL) in Bangalore in 1940, Karnataka has come to be regarded as a pioneer in the aerospace industry. The State is positioned as an aerospace destination due to the presence of numerous aerospace companies and Public Sector Units ('PSUs') engaged in manufacturing, design and development and MRO. In addition, several educational, scientific and technical educational institutions are fostering domain expertise in IT, engineering and design skills that can be leveraged by aerospace majors. Selected advantages that Karnataka offers as a hub for aerospace activities include -

- Presence of large Defence PSUs
- Presence of scientific and technical institutes
- Deep aerospace expertise - a network of 2000 SMEs that do niche subcontracting work for the DPSUs
- Information Technology ('IT'), design and engineering expertise
- Manufacturing expertise
- Proximity to vendor base
- Government support
- Opportunity for related services like ground handling, and the manufacture of ground support equipment
- Other advantages regarding location, excellent telecommunications networks, etc.

Karnataka - An Investment Destination for Aerospace Activities

The existing supply chain developed by old-economy aerospace and engineering firms, an investor friendly government with simplified procedures and fast-track business approvals through single window clearance mechanism combine to make Karnataka a very attractive destination for the industry. The State is well positioned to become a hub for the complete aerospace value chain:

- Karnataka as a manufacturing hub - With the headquarters and laboratories of Hindustan Aeronautics Limited in the capital city of Bangalore, Karnataka has always been a pioneer in developing new aircrafts and helicopters for the Indian defence and domestic civilian use. To augment this capability and to exploit its potential in the international market, the state government has planned an aerospace special economic zone (SEZ) at Devanahalli close to the new Bangalore International Airport. In addition , QuEST Global has established a manufacturing and precision engineering SEZ in Belgaum.
- Karnataka as a MRO hub - Currently, overhaul of some of the defence aircraft in India is almost wholly carried out by HAL. The Indian MRO industry faces competition from Southeast Asian countries, particularly Singapore. Despite this, the MRO segment has been growing with new investments

happening particularly at Bangalore. Large MRO companies are enhancing their presence in Karnataka.

- Karnataka as an aerospace hub for IT design and engineering services - As the Silicon Valley of India, Bangalore presents the highest concentration of highly mature IT and engineering services firms. Local software majors like HCL, Infosys and Wipro have been serving clients in the global aviation and aerospace industry for many years. Global leaders in aerospace have also set up their technology and engineering services support centers in Bangalore.
- Karnataka as an aerospace hub for R & D and simulation - With top technological innovations at its disposal, Bangalore is rapidly becoming an aviation simulation and R&D hub. Karnataka is an attractive destination for simulation and R&D due to its inherent advantages of a large number of highly qualified low cost engineers and scientists. Simulation and high-end research has been the forte of government-owned organizations based in Bangalore. Some leading aerospace companies have engaged with their Indian counterparts to enhance their aerospace simulation and R&D capabilities by establishing facilities in Karnataka.Honeywel,l for example, has two R &D Centers in Bangalore.

Policy Framework

The Indian Government encourages private investment in both the civil and defence aerospace sector with the goal of encouraging technology transfers and achieving indigenization. 100 percent Foreign Direct Investment ('FDI') is permitted under the automatic route for MRO, flying training institutes and technical training institutions. The defence sector has more restrictions: while 100 percent domestic investment is allowed, subject to licensing, in the manufacture of defence equipment, there is a cap of 26 percent on FDI (also subject to licensing l).

India has a federal organization of tax administration under which the Central Government levies taxes on income, custom duties, central excise and service tax. The State Government levies taxes, such as VAT, sales tax, works contract tax, etc.

The Central Government released the draft Direct Taxes Code which will replace the Income-tax Act, 1961, for public debate on August 12, 2009. The objective of the code is to moderate tax rate and simplify tax laws. All direct taxes including wealth tax and income tax would be brought under one code.

The Central Government also proposes to simplify the various indirect tax levies through the introduction of the Goods and Services Tax (GST) with effect from April 1, 2011(likely date). The proposed GST model will subsume taxes like central excise, service tax, VAT, central sales tax, entertainment tax, luxury tax, octroi, electricity duty and purchase tax. The GST will give relief to the industry through a comprehensive and wider coverage of input tax set-off and service tax set-off.

The Government of Karnataka has decided to focus and promote the Aerospace sector, given the inherent advantages enjoyed by the State. The Government has a State Level Single Window Clearance Committee and the State High Level Clearance Committee (for investments greater than INR 50 crore) with the object of clearing proposals in a speedy manner. Further, the State has been making efforts to ensure that the infrastructure requirements of the industry are met and has proposed to set up an aerospace SEZ, near Bangalore International Airport at Devanahalli, where one thousand acres are to be devoted to expansion of aerospace activity, particularly MRO outsourcing. The Government is also promoting setting up of an aerospace university.

Vision of the Future

India recognizes that it needs technological and managerial expertise from foreign Original Equipment Manufacturers ('OEMs') that will be crucial to the successful development of a commercial or defence aircraft. Therefore, certain reforms will have to be instituted to create a more favourable operating environment and catalyze growth. Changes in the regulatory environment, market economics, and competitive landscape will create growth opportunities across the value chain.

There is a buzz in the air – not just from the engines of global OEMs landing in Karnataka, but also from the activity in the Government to promote the State as the aerospace hub of not just India but Asia.

India's Aerospace Industry

Overview

The Indian aerospace industry is one of the fastest-growing aerospace markets in the world due to an increase in defence spending, growing commercial aviation market, rising technological expertise and high levels of technical expertise and knowledge. The PricewaterhouseCoopers report entitled Changing Dynamics—India's Aerospace Industry indicates that the rapid growth of this industry has attracted major global aerospace companies to India and has incentivised domestic aerospace players to increase and deepen operations. All segments in the aerospace industry, including civil and defence aviation and space, are showing a significant level of growth, civil aviation, defence aviation and Space research -

- Civil aviation -
  - The Indian aviation industry is one of the fastest-growing aviation industries in the world with private airlines accounting for over 75 percent of the domestic aviation market (as of 2006).As predicted in the PwC report, the sector has started a rebound this year. The Indian aviation industry is generating a Compounded Annual Growth Rate ('CAGR') of 18 percent. Passengers carried by domestic airlines from January-February 2010 were 8,056,000 as compared to 6,761,000 in the corresponding period of 2009, representing a growth of 19.2 percent, according to a report released by the Ministry of Civil Aviation.
  - The International Air Transport Association ('IATA') in its Financial Forecast (March 2010) indicates that airline markets rose strongly at the end of 2009 and early in 2010, with growth remaining to be concentrated in the emerging markets of Asia, Latin America and the Middle East. Airlines in the large developed markets of Europe and North America face more sluggish growth. Given the sector's more favourable performance, the IATA reduced its estimate of 2009 net losses from USD 11 billion to USD 9.4 billion. More significantly, the IATA now forecast smaller losses in 2010 of USD 2.8 billion, compared to its earlier forecast of USD 5.6 billion, with the largest improvements accruing to airlines in Asia and Latin America.
- Defence aviation - India is expected to spend USD 100 billion in the next decade towards purchase of defence equipment. India is believed to be the world's second largest buyer of weaponry. It is expected that defence spending, which is currently 2.1 percent of GDP, will substantially increase as the nation's robust economy continues to grow. That being said, India's Defence Minister AK Antony believes that India's ultimate goal is self-reliance. Mr. A.K. Antony said, "We want to produce equipment for the armed forces internally, domestically. We want to strengthen our defence industries in India. India needs a strong defence industrial base."
- Space - The Indian Space Research Organisation (ISRO), was established in 1969, and has emerged into one of the "Big Three" Asian space agencies, alongside China's CNSA and Japan's JAXA. The ISRO is a significant partner in many international space projects.

India as a Manufacturing and MRO Destination

India has a strong aerospace industry supported by qualified engineering, science and IT graduates, the availability of parts and components, robust manufacturing expertise, production systems, leading academic institutions, a supportive R&D environment, etc. Many aerospace companies are looking to India as a manufacturing and MRO destination.

India as a Manufacturing Destination - The PricewaterhouseCoopers study entitled Changing Dynamics—India's Aerospace Industry indicates that India is rapidly building capabilities to emerge as a preferred destination for manufacturing of aerospace components. India has skills and competencies in areas that include engineering, production, etc. These capabilities have been recognized and harnessed by foreign companies outsourcing manufacturing work to India. A potential opportunity exists in demonstrating India's expertise in the process beginning right from initial design and ending with the final manufacture; this is where India's real and sustainable advantage exists. This is because systems and components require frequent design changes to suit the performance requirements of different countries; India, with its huge pool of engineering resources, provides the convenience of providing the required manufacturing services at one location. India already has "Build to Specifications" capabilities in space and missile systems,.

There are several factors driving growth in manufacturing in India's aerospace industry -

- Domestic Aircraft Demand - The demand for aircrafts, especially in Asia, is expected to grow as the world economy recovers. According to estimates by leading aircraft manufacturers, India will continue to be the fastest growing country in terms of air travel for the next 20 years. Foreign aircraft manufacturers view India's demand potential as an opportunity to outsource manufacturing work, partly due to offset requirements, but mostly to derive cost benefits.
- Offset Requirements - The Government in its national defence offset policy requires a minimum 30 percent plough back of foreign outflows from defence procurement into the Indian defence industry. This policy enables foreign vendors to choose their Indian offset partner and combined offsets could translate into an opportunity of USD 2 billion per annum for India.
- Cost Advantages - India offers cost advantages that vary in magnitude across the value chain. PricewaterhouseCoopers carried out a survey among aerospace majors, in which respondents indicated that the savings are highest for IT and systems implementation activities in the value chain. Cost savings can range between 15 to 25 percent for manufacturing, depending on the type of component. These savings are expected in labour intensive processes with import of raw materials. In fact, in some cases local sourcing of raw materials and parts can increase the cost savings by an additional 10 to 20 percent.
- Talent Pool - Global aerospace majors are facing a shortage of engineering talent. India has a large talent pool of English-speaking engineering graduates; approximately 500,000 engineers graduate each year.
- Leveraging IT Competitiveness - Indian IT firms have developed best practice processes for quality, project management, and organizational maturity. Many of these practices can be transferred to the aerospace industry which can, in turn, leverage these mature processes to bring improvements into the project lifecycle, covering core R&D services, design and development, verification and validation, development of tools, reverse engineering and maintenance services. IT companies will increasingly benefit from the increase in engineering services outsourcing programmes.

In order to become a major manufacturer in the global aerospace supply chain, India needs to address the following issues -

- Access to Technology - Technology expertise is a critical challenge faced by the Indian companies. India needs to keep pace with the increasingly high use of technology across the design lifecycle. Foreign companies are reluctant to transfer cutting edge technologies with limited management control in the Indian entity and in the past, have given licenses for older technologies.
- Raw Material Development Capabilities - There has been a significant shift in the type of raw materials that are being used in airframe structures. The composition of materials used in aircraft manufacturing is migrating towards new advanced materials. The use of composite materials is rapidly becoming a mainstay since they result in lower maintenance costs, make the aircraft lighter and more fuel efficient. The demand for composites in the aerospace market is expected to grow in future. Currently, almost all raw materials are being imported by Indian suppliers.
- Access to Funding - The aerospace business is highly capital intensive. In the initial high growth phase, capital needs to be injected rapidly and continuously to maintain the planned growth rate. Additionally, working capital requirements, market development, brand building and awareness require significant on-going investment and expenditure. Funding access can act as an entry barrier into this space.
- Certification Process - Getting international air worthiness certifications for processes and parts has been a challenge for India-based suppliers. It is also a deterrent for OEMs to outsource some of their components to India since the approval for parts made in India can sometimes take too long and become cost inefficient (when their logistics costs are also considered). Countries like Mexico entered into a bilateral aviation safety agreement with the FAA allowing manufacturers to inspect and certify components in Mexico, instead of shipping them to the United States for safety checks.

India as a MRO Destination - As a support service to the aviation industry, the opportunity to provide MRO activities will grow with the industry. India's MRO segment is estimated to grow at 10 percent and reach USD 2.6 billion by 2020. Establishing MRO facilities in India will enable operators to achieve faster turnaround times, savings in operating costs and a decline of foreign exchange outflows. Robust MRO facilities will also attract work from overseas, which will result in an overall lift to the economy. India can become an MRO hub to the world by leveraging -

- Manpower cost arbitrage - MRO manpower costs in India are lower than the leading industrialized nations. Respondents to the PricewaterhouseCoopers survey indicated that MRO manpower costs in India range from USD 30 to USD 35 per hour. This is almost 60 percent cheaper than in Western Europe or the US but not significantly dissimilar to wage rates in China or Indonesia. There is also a shortage of talent in developed countries; these workforces are ageing and the supply of high quality engineering talent is declining. India has a robust supply of talent, available at relatively cheaper rates.
- Availability of talent - India has a large and able population of engineering graduates who are trained and have suitable technical competence and experience. MRO companies are also in the early stages of working with educational institutions to guide graduates towards aerospace and also institute after-graduation employment programmes.
- Locational advantages - Currently, there are no MROs within a five-hour fly zone of India. Indian MRO companies can leverage India's inherent geographic advantage of being between Europe and the Asia Pacific region. Domestic carriers can benefit from having MRO facilities within India's borders since this reduces costs associated with sending aircraft to Dubai or Singapore. International carriers, who have been increasing their flight routes to India, can have their aircraft serviced in India, thereby leveraging cost arbitrage opportunities.
- Untapped opportunity - MRO companies believe that this segment offers significant opportunity since demand for MRO activities/facilities is high. Given the growth of Indian aerospace, it is logical to build a MRO infrastructure to support current and future growth in the sector. In addition, the growth of several low cost carriers in India has increased competitive pressure on the aircraft majors who would prefer to have aircrafts serviced locally to reduce costs and on-ground time.
- Graded Development - Each segment requires specific skills, knowledge and regulatory approvals. While there is tremendous potential for India to develop capabilities in all segments, currently airframe is the prime candidate for offshoring to India, especially for airlines with over 30 aircrafts, due to its labour intensive nature. As MRO players' competencies grow, line maintenance and component repairs will be the next segments to be offshored. Engine overhaul is likely to be the last segment to be offshored to India after the Indian MRO market has matured.

In order to become a major player in the MRO segment, India needs to address the following issues -

- Tax & Regulatory Environment - Participants in India's MRO industry believe that the tax regime needs to change in order to enable India to positioning itself as an MRO hub to the world. This is further elaborated upon in the chapter addressing Tax & Regulatory issues.
- Land Allotment Processes - A challenge for MRO players is the absence or shortage of land at India's major airports. The lack of clarity behind land allotment and its unpredictability are issues that deter potential MRO players. However, with the Government's decision to privatize the Mumbai and Delhi airports, MRO players are confident that there will be more transparency into the land allotment process.

Changes in the Indian Aerospace Industry

Enhanced Investment Plans

The government, on the advice of the Kelkar Committee, opened up the aerospace industry to the private sector. A major trend being witnessed in the sector is the level of investments being made by the State government and domestic and global aerospace majors in the sector. For example, State governments are helping boost development in the industry by establishing special economic zones (SEZs) for the aerospace industry.

These include:

- The INR 3,000 crore Aerospace and Precision Engineering Special Economic Zone to be set up at Adibatla, Ranga Reddy district in Andhra Pradesh;
- The specialised aerospace park of 1,000 acres proposed near the Bangalore International Airport; and
- The 2,500 acre SEZ for the aerospace and avionics industry, proposed to be established in south Gujarat, close to the Delhi-Mumbai industrial corridor. This is likely to have several of MRO facilities.

Aerospace companies are also investing heavily into the industry by entering into joint venture agreements, establishing MRO facilities, etc. For example -

- Aircraft manufacturing major, Boeing, is in the process of setting up a USD 100 million MRO facility in Delhi. The MRO is primarily being set up to take care of the maintenance needs of the 27 Boeing 787 and 23 Boeing 777 aircrafts ordered by Air India.
- GE Aviation and Air India will jointly invest USD 90 million to set up a MRO facility in Mumbai.
- Indocopters Private Ltd, distributor for Eurocopter helicopters in India, is planning to set up a helicopter MRO facility in Bhubaneswar, the company's fourth service centre in the country.
- Bharat Electronics' long-planned venture to make missile seekers in India with an Israeli partner may be signed this year. Ashwani Kumar Datt, Chairman and Managing Director, BEL said "We are trying to re-do the business plan and finalise (the details of the proposed joint venture)," The venture, when finalised, may involve technology transfer, manufacturing at any of BEL's nine facilities, as also co-development of seekers for other missiles. Apart from meeting the needs of the two countries, the MoU of February 2008 also had a provision for exports.

New Entrants

Realizing an opportunity in this sector, several Indian companies, many of which operate in the automotive, heavy manufacturing and diversified industries, are planning to provide production expertise towards the creation of aerospace products.

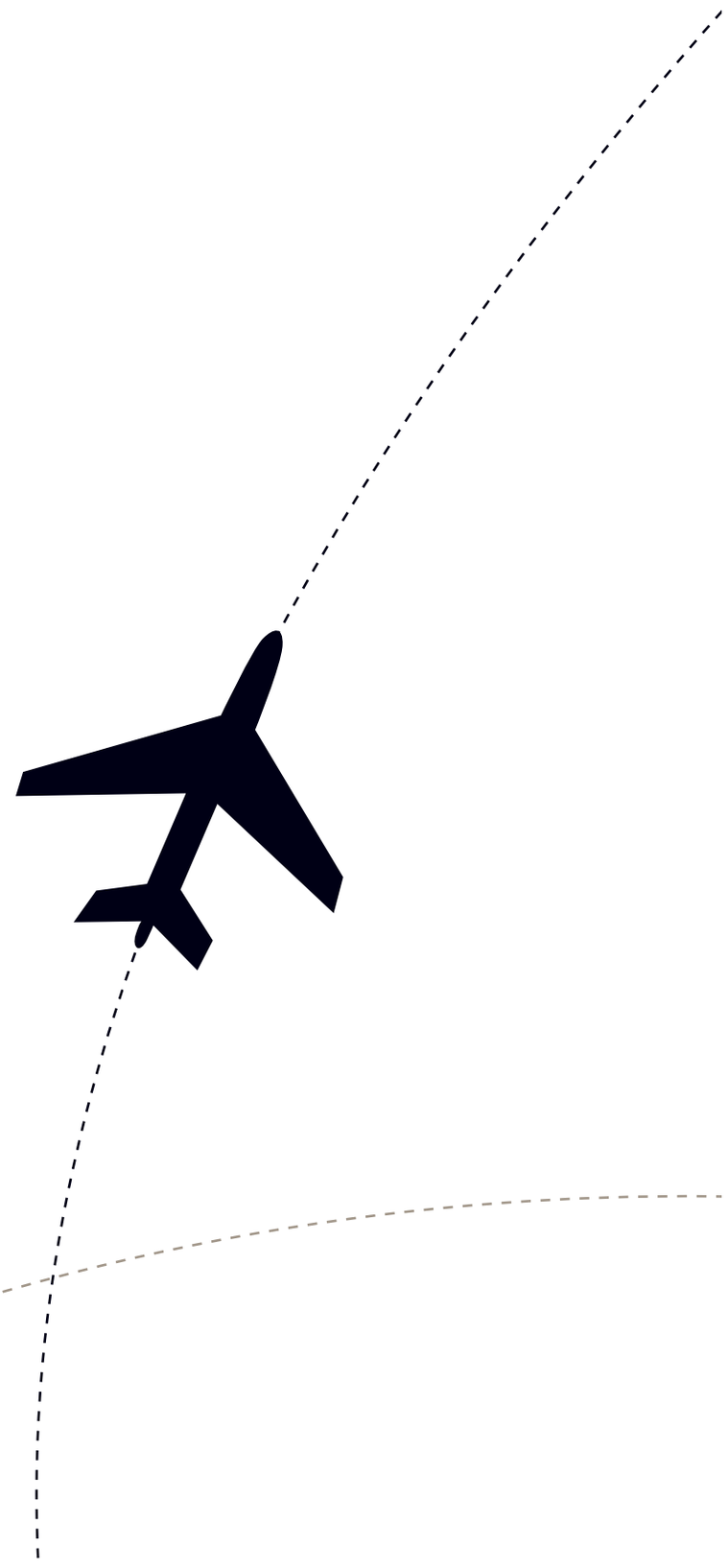
- Hero Motors plans to produce light aircrafts at its 300 acre aerospace park in Madhya Pradesh, in partnership with an unidentified European manufacturer.
- The Tata group is keen to move into full-scale aircraft assembly and production in both the civil and defence markets. The group sought approval to set up an aerospace manufacturing facility on the outskirts of Hyderabad. The company has already signed deals with several International companies, including one to manufacture components for Boeing. It has assumed a one-third stake in Italy's Piaggio Aero, while Israel Aerospace Industries and the Tata group signed a memorandum of understanding to establish a new company to develop, manufacture and support a wide range of defence and aerospace products, including missiles, Unmanned Aerial Vechiles('UAVs'), radars, electronic warfare systems and homeland security systems.
- Mahindra & Mahindra has signed deals with BAE Systems and is jointly developing a five-seat light aircraft with the National Aerospace Laboratories.
- Larsen and Toubro is in the process of forming a joint venture with the European EADS to develop high-tech defence electronics in Pune. This venture will focus on developing electronic warfare, radar, defence avionics and mobile systems for defence applications.

By signing JV agreements rather than MOUs, both large and small Indian industries are getting into this sector. The last 15 months has seen a number of JVs being finalised, signalling a transition from interest to intent and discussion to action. Prominent among these are the alliances between .M&M – BAE, Tata – IMI, L&T – EADS and DIEHL – India Forge And Stampings Ltd

India's Role as an Engineering Services Provider

Global spending on engineering services was USD 750 billion in 2004, with aerospace accounting for 8 percent; this could rise to USD 1.1 trillion by 2020, according to NASSCOM. The total offshore engineering expenditure is expected to grow to between USD 150 to USD 225 billion by 2020 and India, with its talent pool and experience in engineering services, could assume 25 percent of this market. Activities in engineering services that could be outsourced range from concept and detailed design stages to the testing, production and support stages. Some of these activities include industrial / mechanical/electrical design and analysis, reverse engineering, system engineering, Computer Aided Design ('CAD") work, embedded software, derivative products, auxiliary functions (piping, cabling, controls), component testing, test equipment design, prototyping, technical manuals, manufacturing engineering, tooling design and build and value/ cost engineering.

Indian software companies are aggressively trying to increase their share of the Engineering Services Outsourcing market. Changing Dynamics—India's Aerospace Industry suggests that Indian companies are increasingly being viewed as long-term partners and not as mere suppliers/vendors. This enables Indian players to participate across various phases of the product lifecycle. Software companies like Wipro, Infosys, HCL and Tata Consultancy Services have been active in the aerospace industry for several years. The software engineering services provided by most of these players offer complete solutions ranging from Product Design and Development, Embedded Systems and Avionics to Product Lifecycle Management services.



Karnataka Aerospace Industry

Overview

Karnataka is becoming one of India's most dynamic states! The State government is positioning Karnataka as a major investment destination for a range of industries that include IT, auto, steel and aerospace.

While Karnataka's economy largely depends on agriculture with 71 percent of the population engaged in farming, the State has become a key contributor to industrial growth given the presence of several industries, such as aerospace, manufacturing, electronics, software, biotechnology, small and medium scale industries, etc. To embark upon balanced regional development, the State government plans to utilize infrastructure initiatives to help further boost growth and employment.

Karnataka - Hubs of Expertise

Aerospace zone - Belgaum

Automobile zone - Ramanagara, Shimoga Dharwad and Kolar

Steel zone - Bellary, Koppal, Bagalkot, Haveri, Gadag and Raichur

IT / BT zone - Mysore, Mangalore, Hubli-Dharwad, Belgaum, Shimoga, Gulbarga, Kolar and Mandya

Bangalore, referred to as India's Silicon Valley, accounts for approximately 38 percent of India's software exports. The software industry is expected to generate USD 20 billion by 2010. Karnataka earned USD 17 billion (INR 74,929 crore) from software exports last fiscal (2008-09) as against INR 60,800 crore the previous year, registering a 23 percent growth in rupee terms and 21.5 percent in dollar terms.

Another industry that the State Government is focusing on is the aerospace sector. This industry continues to draw large investments in the aerospace sector as it prepares to meet rising global demand. The sector will see robust growth due to a combination of positive macroeconomic factors, the presence of aerospace skill and expertise, favourable Government policies, and domestic and global aerospace majors' investment and expansion plans in the State. Aerospace players are looking to Karnataka to be an aerospace hub for manufacturing and for MRO activities and are -

- Entering into joint ventures with overseas players
- Establishing captive R&D and manufacturing centers
- Providing components, landing gear, IT design and outsourcing services, etc. to global aerospace majors
- Establishing Special Economic Zones to harness the State's inherent advantages

Karnataka as an Aerospace Hub - Advantages

With the establishment of Hindustan Aeronautics Limited (HAL) in Bangalore in 1940, Karnataka has come to be regarded as a pioneer in the aerospace industry. The State is positioned as an aerospace destination due to the activities of numerous aerospace companies and PSUs engaged in manufacturing, design and development, and Maintenance, Repair and Overhaul (MRO). In addition, several educational, scientific and technical educational institutions are fostering domain expertise in IT, engineering and design skills that can be leveraged by aerospace majors.

Presence of scientific and technical institutes	The presence of scientific and academic institutions, such as the Indian Institute of Science and Indian Institute of Management, enable the development of well qualified technical experts who can be absorbed into aerospace majors' operations. (Almost 1,500 acres are being provided to the Indian Institute of Science to set up its second campus in the Chitradurga district.) The city also boasts of other prestigious colleges and research institutions.
Deep aerospace expertise	The Karnataka Udyog Mitra's paper entitled Aerospace Industry in Karnataka (March 2010) puts forth that most of the development of India's aerospace sector has been concentrated in Bangalore. The CII report entitled Vision 2015: Karnataka—A Global Aerospace Hub supports this by saying that the establishment of HAL in Bangalore in December 1940 by Walchand Hirachand and the Maharaja of Mysore heralded the beginning of Karnataka's aerospace industry. Other important organisations include - • Indian Institute of Science and Council for Scientific Industrial Research that offers opportunities in research and training for aeronautical graduates. • The Government-funded Indian Space Research Organization is headquartered in Bangalore, and shares good synergies with other firms operating in aviation and aerospace sector. • The Aeronautical Society of India formed a platform where engineers, industrialists and professionals could work together for the industry. Major aerospace organisations are located around Bangalore, including HAL, National Aerospace Laboratories (NAL), QuEST Global, Taneja Aerospace and Aviation Ltd, Dynamatic Aerospace, Air Works India Engineering Pvt. Ltd., The Society of Indian Aerospace Industries and Technologies, etc. An existing supply chain ecosystem has been developed by these organizations. India's flagship aircraft manufacturing and aviation research organizations are located in Karnataka, including: • Hindustan Aeronautics Limited (HAL) • National Aeronautical Laboratory (NAL) • Aeronautical Development Agency (ADA)
IT expertise and skill sets	Since independence in 1947, Bangalore has developed into one of India's major economic hubs and is today known as the Silicon Valley of India. Karnataka boasts the presence of major IT companies such as HCL, Infosys, Tata Consultancy Services, Wipro, QuEST, etc. Karnataka-based professionals have developed deep IT domain experience. Bangalore is the world's fourth-largest technology cluster.
Manufacturing expertise	Bangalore is a leader in heavy manufacturing due to the presence of PSUs, software companies, aerospace companies, telecommunications companies, machine tools manufacturers, heavy equipment manufacturers, defence establishments, etc. Bangalore serves as headquarters to several public manufacturing heavy industries such as HAL, NAL, Bharat Heavy Electricals Limited (BHEL), Bharat Electronics Limited, Bharat Earth Movers Limited (BEML) and Hindustan Machine
Proximity to vendor base	There are approximately 2,000 small and medium enterprises focused on component manufacturing, tooling and testing equipment, and assembling. These companies meet the demand of HAL, NAL and ISRO in addition to global aerospace firms.
Government support	• The State Government is investor-friendly and has simplified procedures and fast tracked approvals through Single Window Mechanism. • Companies can also receive assistance from Karnataka Udyog Mitra. • The Government is building airstrips and helipads in almost all districts. • Karnataka is one of the most progressive states in terms of the business environment for international investors.
Opportunity for related services	Bangalore operates one of India's busiest airports as reported in the CII report entitled Vision 2015—Karnataka: A Global Aerospace Hub. As such, there is tremendous potential for activities in MRO and ground handling, and the manufacture of ground support equipment.
Other advantages	• Bangalore has a location advantage in terms of talent availability in IT, engineering and aerospace, proximity to industrial hubs like Pune, Hyderabad and Chennai, and connectivity to road, rail and air. • Fairly peaceful multi-cultural State that embraces different cultures. • Favorable climate, congenial environment for private investors, cosmopolitan lifestyle, excellent health care and education facilities.

Issues to Address

Talent and manpower cost competitiveness, location-specific advantages and the presence of specialist capabilities make Karnataka a global/regional hub for manufacturing and for MRO activities. That being said, some challenges facing the State include -

- Bangalore faces competition from other cities, such as Hyderabad, Chennai and Nagpur, in the area of aerospace manufacturing. These cities are actively promoting aerospace SEZs and are trying to attract foreign investment. Karnataka can showcase multiple destinations within the State as hubs for activities in the aerospace value chain, thereby assuming a larger share of potential business. Karnataka has the advantage that it can project multiple cities (i.e., Bangalore, Mysore, Belgaum, etc.) as aerospace hubs.
- As in the rest of the country, infrastructure is a key challenge in Karnataka. While infrastructure facilities have improved there is a need to do more and develop more robust infrastructure - availability of land, quality power and water.
- An issue facing the industry (particularly the MRO sector) is a shortage of land. MRO units should be located close to airports. That said, the land acquisition process is time-consuming. The Government has addressed this by proposing a MRO near the international airport in Bangalore.
- The Land Acquisition Act makes it somewhat time-consuming for businesses to acquire land; streamlining land acquisition processes would be appreciated by industry.

Investment

Global and domestic companies have been and continue to invest in Karnataka—

Investing in Karnataka	
In March 2009, Boeing launched the Boeing Research & Technology-India centre to carry out continued collaboration with Indian R&D organizations, including government agencies and private sector R&D providers, universities and other companies. The Boeing Research & Technology-India centre will build upon an already solid foundation of collaborative research projects in India. For example, since 2007, Boeing has been working together with the Indian Institute of Science and Wipro and HCL, as part of the Aerospace Network Research Consortium. This is India's first public-private aerospace research consortium and it is devoted to emerging network technologies and concepts.	*"Boeing is partnering with the best researchers around the world to find the best technology solutions for our customers, and we look forward to working with our partners here in India on some promising new technologies," said John Tracy, Chief Technology Officer and Senior Vice President , Engineering, Operations & Technology, Boeing. Dinesh Keskar, President, Boeing India added, "Boeing is defined by its technological edge. Working with India's technology leaders helps Boeing assimilate new ideas and innovative processes into our products and programs. This also is good for India because it helps grow the capabilities of the Indian R&D community to meet the emerging needs in country."*
European Aeronautic Defence and Space Co (EADS), which owns aircraft manufacturer Airbus, commenced research operations in Bangalore in December 2009 with the opening of an innovation centre. The innovation centre will work with the Indian Institutes of Technology in Mumbai, Kanpur and Delhi and the IISc in Bangalore to design simulators and develop software. Located at the Airbus engineering centre, the India branch of EADS Innovation Works is the third facility outside Europe and second in Asia after Singapore.	*"The opening of EADS Innovation Works in Bangalore is part of our global research and technology strategy. India is very strategic for us as a supplier and partner in high-end aerospace products and services. We will develop research capabilities to access new technologies and engineering resources. India is an important part of our vision for research and technology growth owing to the bright engineering talent available here," said Jean Botti, Chief Technology Officer, EADS.*

Rolls-Royce and Hindustan Aeronautics Limited signed an agreement in March 2010 to create a manufacturing joint venture company in Bangalore, India. The new company, a 50:50 joint venture between Rolls-Royce and HAL, will manufacture compressor shroud rings. Construction of a new purpose-built production facility, incorporating the latest in modern manufacturing techniques, will commence in 2010 with component production beginning in 2012.	*"India is extremely important to Rolls-Royce and we are delighted to announce this new joint venture company with our partners HAL. This marks an exciting new phase of our long-standing partnership with HAL and underscores our commitment to India and the aerospace industry here. India is a country that is full of potential for Rolls-Royce and we look forward to continuing to develop our business here in the future," said Sir John Rose, Chief Executive, Rolls-Royce.*
Honeywell inaugurated a Rs.253.09 crore ($50 million) research, development & engineering facility at Orion, Outer Ring Road in Bangalore in May 2009. The new R&D facility will accommodate 3,000 people and have laboratory facilities, simulators, and a training centre.	*"We are committed to India as a manufacturing location, export hub and most importantly as a centre of engineering and R&D excellence. Our presence here has grown from 1,000 employees in 2002 to more than 10,000" , said CEO Dave Cote.*

Wanting to harness the potential of the State and going a step further than investing in captive centers, QuEST established an SEZ in Belgaum. This SEZ will help to develop an aerospace cluster in the state. Already operational, this SEZ will enable many companies to further leverage expertise in manufacturing, MRO and R&D.

Karnataka's Chief Minister B.S. Yeddyurappa, at the inauguration of the SEZ, said,

"The QuEST Global SEZ in Belgaum has opened up newer avenues to attract foreign investment in the manufacturing space. We are now poised to offer expertise through competent local talent and corporate commitment."

Creating Aerospace Clusters in Karnataka

The QuEST Global Precision Engineering SEZ in Belgaum

- SEZ Particulars -
  - Formally inaugurated in November 2009 to focus on aerospace components and sub-systems by building a precision engineering and manufacturing end-to-end eco-system (supply chain cluster).
  - QuEST's intention behind the establishment of the precision engineering SEZ in Belgaum is to enable the development and establishment of an aerospace supply chain cluster, where all activities within the aerospace engineering and manufacturing spectrum occur. These activities include design and development engineering, aerospace grade special metals warehouses, aerospace castings and forgings, precision machining, sheet metal working, composites, special processing, fasteners, assemblies, testing, certification, etc. for mechanical and electronics (Line-replaceableUnits(' LRUs')) systems and sub-systems. The objective is to enable completely finished modules and sub-systems to be made within the SEZ to enable it to function as an end-to-end eco-system for aerospace products. These investments are in addition to the engineering service centers and the manufacturing unit which has been operational in Bangalore since 1998 and 2006 respectively. QuEST Global has an employee headcount of over 1200 personnel in its centers in Bangalore and expects this number to double in the next few years
  - Spread over 300 acres and currently houses an engineering services facility, a precision machining facility and a sheet metal facility.
  - Infrastructure includes roads in and around the zone, a metal road for smooth movement of both car and cargo, a four-lane road to connect the zone with NH-4, a sewage system connected to a sewage treatment plant, and a power plant.
- Selected Units - Selected global corporations establishing units within the SEZ include SABCA, Magellan Aerospace and Farinia SA
  - SABCA will manufacture metallic parts for Airbus aircraft in its Belgaum unit. SABCA's Chief Executive Officer, Daniel Blondeel, said, "The SEZ can take on start-to-finish projects and offers many advantages in the manufacturing space."
  - Magellan will set up a facility to manufacture components and sub assemblies for aero engines. Magellan's Vice-President, Konrad Hahnelt, said, "The location of the SEZ has increased our operations efficiency."
  - Foundry and forging major Farinia will establish an aerospace forging facility
- Benefits to Local Economy -
  - "The initial investment for the SEZ project is INR 150 crore. We are looking at long-term gains. We are looking forward to creating more than 7,000 jobs locally and infusing USD500 million into the economy in the next 10 years," said Aravind Melligeri, Chairman and Co-Founder, QuEST Global.
  - The SEZ will generate INR 2500 crore of aerospace-related business in 10 years.
  - "This is a special day for Karnataka. Bangalore is perceived to be the India hub for the aerospace sector, and today the QuEST Global SEZ in Belgaum has opened up newer avenues to attract foreign investors in the manufacturing space as well. We are now poised to offer international level expertise with competent local talent and corporate commitment," said Karnataka's Chief Minister, B.S. Yeddyurapa.
  - The State government plans to establish an aerospace industrial park near the international airport at Devanhalli. "We have acquired about 1,000 acres of land adjacent to the new airport to build world class infrastructure for the aerospace industry. About 250 acres of the land will be earmarked for a SEZ in the aerospace hub. The aerospace park is being located adjacent to a 1,000 acre electronic hardware park and a 1,000 acre software park, which will enable the aerospace industry to leverage the strengths of the IT sector," said State Chief Secretary S.V. Ranganath.
- Aero University
  - The State Government plans to establish an Aerospace University with the aim of improving the the quality of desired talent in the state. This will help boost employment besides providing an overall lift to the local economy.

Karnataka's Competitiveness as an Investment Destination for Aerospace

India received the largest number of R&D investments and the second-largest number of manufacturing investments between 2000 and 2008, of which a major portion was awarded to Karnataka. Current estimates of revenues from export of mechanical engineering design, embedded systems/avionics and components manufacturing in the aerospace sector stand at USD 1.5 billion.

Number of Investments by Top 50 Global A&D companies in international markets (2000-2008)

Country/Region	R&D
India	7
US	6
Russia	5
UK	3
W.Europe	3
China	2
Mexico	2
CEE	2
S. Korea	2
Middle East	1
N. Africa	1
Other	1
	35

Country/Region	R&D
China	13
India	11
Mexico	8
US	8
Russia	6
UK	3
W. Europe	3
Middle East	3
N. Africa	3
CEE	2
S. Korea	2
Other	1
	63

The existing supply chain developed by old-economy aerospace and engineering firms, the investor friendly government with simplified procedures, and fast-track business approvals through single window clearance mechanism makes Karnataka a very attractive destination for the industry. Despite some challenges relating to infrastructure, Karnataka still provides the best opportunity for the global investor.

Karnataka has a proven record given that over 500 multinational corporations and 60 global Fortune 500 companies maintain operations in the State.

Karnataka as an Aerospace Hub for Manufacturing

With the headquarters and laboratories of Hindustan Aeronautics Limited in Bangalore, Karnataka has been a pioneer in developing new aircrafts and helicopters for the Indian defence and domestic civilian use. HAL has always been at the center of India's aircraft manufacturing program. HAL's joint venture with Snecma, a global manufacturer of jet engines for commercial aircrafts, is based in Bangalore and aims to produce components for aircraft jet engines.

To further enhance Karnataka's ability as a manufacturing base for aerospace companies and to leverage its potential in the international market, the State government has planned an aerospace SEZ at Devanahalli. Located close to the new Bangalore International Airport, the SEZ has already received commitments from major companies that include—

- Starragheckert Aerospace Components
- Systems Controls
- G.L. Polyurethane Company Private Ltd.
- Micron Engineers
- Priyaraj Electronics Limited
- Pacific Natura Biotech Private Limited

The establishment of this SEZ will also help compliment the knowledge, skills and technology transfer that will occur in the existing QuEST Global Precision Engineering SEZ in Belgaum.

Karnataka provided a balanced ecosystem of manufacturing and services companies. While many large firms like Bharat Earth Movers Limited, Robert-Bosch International and Volvo India Limited operate from Bangalore, other new companies are establishing operations in the city's outskirts, in key industrial belts surrounding Bangalore and in north Karnataka.

The growth of other allied industries has helped the aviation manufacturing industry due to increasing maturity of suppliers and economies of scale.

Karnataka as an Aerospace Hub for MRO

Reports estimate that India will need over 900 commercial aircrafts over the next 20 years. MRO operations are required to maintain the growing fleet of aircraft for Indian carriers. The opening up of Indian skies and increasing recognition of the talent pool in India has made the country into a very attractive destination for MRO services. India's MRO industry earns over USD 1 billion in revenues and has been growing at double-digit pace.

Currently, some defence aircraft in India are being overhauled by HAL. The Indian MRO industry faces tough competition from countries, like Singapore and Dubai. Despite this, the MRO segment has been growing with new investments, many occurring in Bangalore. Selected initiatives by large MRO companies to enhance their footprint in Karnataka include -

- HAL proposed to set up an MRO unit with an initial investment of INR 120 crores at the old Bangalore airport owned by the company.
- National Aviation Company of India Limited (NACIL) signed an agreement with Airbus and Bangalore-based Jupiter Aerospace to form a MRO joint venture. The joint venture is for MRO and life cycle support of commercial aircraft.
- Indian helicopter sales and support company Indocopters will open its third MRO facility for Eurocopter rotorcraft in Bangalore in the second quarter of 2010.
- Air Works India Engineering Private Ltd plans to invest approximately USD 120 million over the next three years to establish a MRO center near Bangalore.

Karnataka as an Aerospace Hub for IT, Design and Engineering services

As the Silicon Valley of India, Bangalore maintains the highest concentration of highly mature IT and engineering services firms. Local software majors like QuEST, HCL, Infosys, Tata Consultancy Services and Wipro have been serving clients in the global aviation and aerospace industry for many years. Global leaders in aerospace have also established their technology and engineering services support centers in Bangalore. For example -

- Honeywell Technology Solutions is a research lab headquartered in Bangalore and is working on developing and testing flight management systems. The lab offers technical research and development services to Honeywell business across the globe.
- Infosys Technologies Ltd, another major software firm, is a partner in forward integration and helps build aircraft components and systems for customers, such as Boeing and Airbus, through local vendors. In addition to delivering software and engineering services for aerospace clients, the company is now part of the product supply chain.
- Wipro Ltd is another large software firm that helps build electronic warfare systems, radars, aviation electronics and flight simulators locally for US defence contractors, such as Lockheed Martin and Northrop Grumman. The company is setting up dedicated units for these systems and anticipates larger revenues from defence customers moving forward. The company also maintains a tie-up with Britain's largest defence manufacturer, BAE Systems, to build sub-systems for aircraft engines that power business jets.
- HCL Technologies is also a leading software firm with a good clientele in engineering services for aviation and aerospace sector. The company is a strategic partner for Boeing's Dreamliner program and is a major player in the offshoring of aerospace technological development services. The company has also augmented its aviation and aerospace capability by its joint venture with Smith's Aerospace and by its acquisition of Axon Consulting which has strengths in aviation MRO. (This acquisition enabled

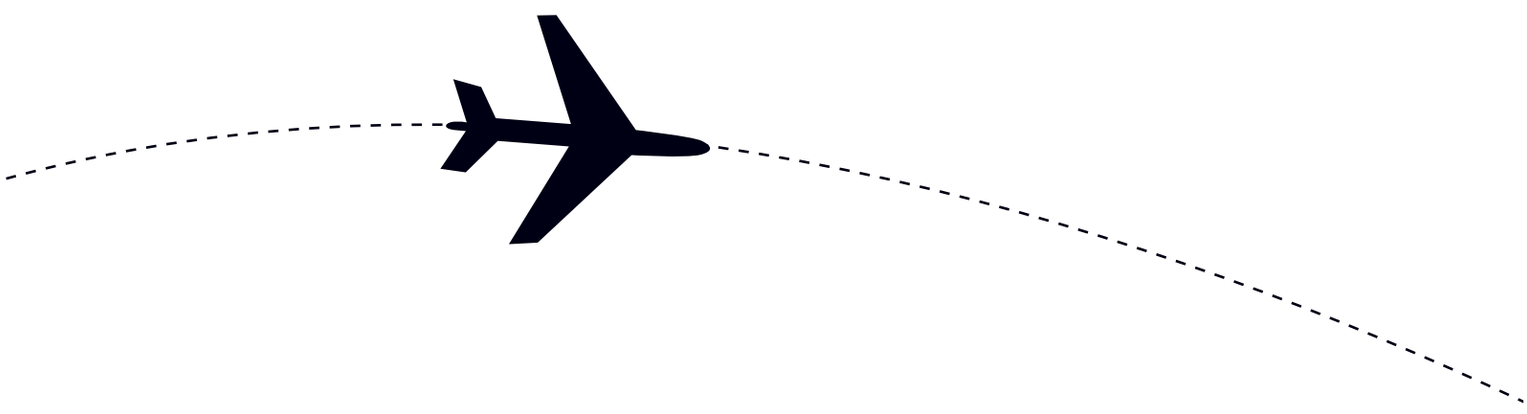
the company to acquire business from Jet airways in India to manage their MRO technologies.)

- Airbus established an engineering centre in Bangalore in October 2007. Almost 120 staff are employed and Airbus hopes to increase its staff strength to 400 by 2012. Airbus plans to outsource 40 percent of aircraft design to local companies. This engineering centre is the only one outside Europe for Airbus. Additionally, Airbus outsources work to 20 Indian IT and engineering service providers that include Infosys, Quest, HCL Technologies, etc . According to media reports, Airbus plans to move 20 percent of its engineering design activities to low cost countries, most of it to India.
- QuEST Global, the Bangalore-based engineering company, entered into a 10-year strategic relationship with Magellan Aerospace. In 2007, the firm set up the country's first special processing facility for aerospace manufacturing, delivered the first set of A-380 components to SABCA and achieved Airbus AS 9100 certification. Quest is the first Indian private sector player qualified to offer end-to-end solutions to EADS.

Karnataka as an Aerospace Hub for R&D and Simulation

India is an attractive destination for simulation and R&D due to its inherent advantages of a large number of highly qualified low cost engineers and scientists. Earlier, simulation and high-end research was the forte of Government-owned organizations like DRDO,GTRE, ISRO and CSIR; all these organizations are based in Bangalore. In the last decade the country has welcomed private foreign investment in R&D with government support and tax incentives. Some leading aerospace companies have engaged with their counterparts in India to enhance their aerospace simulation and R&D capabilities:

- Airbus Engineering Centre in Bangalore is the company's high-tech aircraft component manufacturing facility that works on the development of tools to aircraft design and structural analysis using software based simulation, among other things.
- CAE, a global leader in aviation simulation products and training services, made Karnataka its base in India, and is operating from an owned facility near the new Bangalore international airport. The Airbus A320 and Boeing 737 Level D full-flight simulators in the CAE facility are certified by India's Directorate General of Civil Aviation.
- Boeing entered into agreements with Indian Institute of Science, WIPRO and HCL to develop wireless and other network technologies for aerospace related applications.
- Mahindra and Mahindra signed an agreement for the design and development of a new general aviation aircraft with NAL, CSIR and the Government of India.
- The wind-tunnel testing center at NAL is the primary simulation testing facility for aircraft engines in India.



Karnataka State Government Policy

Karnataka Udyog Mitra (KUM)

- Set up more than a decade ago, KUM works as a single point contact for all investors - from receiving a proposal to ensuring its implementation, KUM is actively working with the investors at all stages.
- The State Level Single Window Clearance Committee and the State High Level Clearance Committee (for investments greater than INR 50 crore) have been working to clear proposals in a speedy manner.

Land

- One main policy measure intended to smoothen the path for investors is an exclusive land acquisition policy and development of a Land Bank – each district to have 1000-2000 acres acquired by the Karnataka Industries Development Board for industrial development. This eases the difficulties faced by investors in creating the basic infrastructure before operationalizing the production facilities.
- An aerospace park will be developed near Bangalore by the State Government in association with the Society of Indian Aerospace Technologies and Industries.
- In developing industrial areas, the state government would take measures to ensure that at least 20 percent of the land is earmarked for the Micro, Small and Medium Enterprises sector, for necessary vendor development support to the large projects. Further, while developing large industrial areas / estates 20-25 percent of the land would be earmarked for townships, facilitating walk to work concept in such areas.

Power

- There is a concerted effort by the state to raise the capacity of power generation to cater to the growing demand of industry. In the last 4 years, 16 power projects have been approved in the State and this would add 10,760 MW to the State grid in the near future.
- Solar power projects have also been planned in Belgaum and Raichur districts.

Air Connectivity

- At present, the State has two international airports at Bangalore and Mangalore. Bangalore International Airport Limited was the first private airport in the country and has the capacity to handle 3000 passengers per hour.
- There are also two domestic airports catering to the northern part of the state at Hubli and Belgaum. The present airport at Mysore is under upgradation and will be soon open for commercial traffic.
- The government has -
  - Started developing airports at Hassan, Shimoga, Bellary, Bijapur and Gulbarga
  - Started upgrading existing airports at Hubli, Belgaum and Mangalore
  - Started adding 12 airstrips in the state
  - Opened Karwar and Bidar Defence Airports for civil traffic
- 20 Helipads are proposed in the State to provide easy access to all districts and give the necessary infrastructure boost for heli-tourism.

Skilled Manpower

- With experience for more than six decades, the State has built considerable human capital resources that are available to companies engaged in the aerospace sector. Research, development and engineering design capabilities are well-developed in the State through the presence of internationally -renowned institutions, such as the Bangalore-based organizations, HAL, DRDO, ISRO, NAL, IISC.
- Global manufacturers are comfortable outsourcing to India, particularly Karnataka, because of the presence of electronic and technical skills and fluency in the English language.
- The State Government proposes to invite offers for establishing an Aerospace University to ensure adequate supply of skilled manpower for this sector.
- Under the Government of India's Skill Development Initiative, the Modular Employable Skills Scheme has been initiated in Karnataka. In 2009-2010, 340 modules were developed in 32 professions for training of unorganized labourers, with priority given to automobile, construction of building, hospitality and electronic fields.

- Under this scheme, the government plans to train 10 million people, by providing training in the Industrial Training Institutes or Industrial Training Centers (ITI's/ ITC's) and at any other location having facilities. More than 400 centers in the State have registered as Vocational Training Providers under this programme to impart training through courses in fabrication, auto repair, electronics, process instrumentation, plastics, information and communication technology, material management, soft skills etc.

Tax Framework

India has federal organization of tax administration under which the Central Government levies taxes on income, custom duties, central excise and service tax. The State Government levies taxes, such as VAT, sales tax, works contract tax, etc.

Corporate Income Tax

- Foreign companies can have business presence in India either through Project/Branch Office (foreign company) or by forming a subsidiary/joint venture company (domestic company).
- The effective tax rate is 42.23 percent (including surcharge & education cess (S&C)) for foreign companies and 33.22 percent (including S&C) for domestic companies.
- Companies are liable to Minimum Alternate Tax (MAT) at 18 percent (plus S&C) on book profits, when tax liability under normal Income tax provisions is lower. MAT credit is allowed against tax liability in subsequent 10 years under normal income tax provisions.
- Domestic company is liable to pay Dividend Distribution Tax (DDT) at 16.61 percent (including S&C) on dividend. However, dividend income is exempt in the hands of shareholders.
- Accelerated depreciation of 40 percent is available for Aeroplanes-Aero engines.

Tax Holiday

- 100 percent tax holiday is available for 10 years for Special Economic Zone (SEZ) Developers, Co-developers.
- 100 percent tax holiday from profits on exports for five years and a 50 percent tax holiday for next 10 years for units set up in a SEZ (during last five years subject to additional conditions).
- Export Oriented Units (EOU) or Electronic Hardware Technology Parks (EHTP) or Software Technology Parks (STP) is eligible for deduction of 100 percent of export profits for 10 years up to 31 March 2011.
- 100 percent tax holiday is available for the profits derived by a new undertaking which develops, maintains and operates any new infrastructure facility such as roads, highway, bridges, airports, ports, etc. The tax holiday is available for 10 consecutive years out of 15 years beginning from the year in which the undertaking or enterprise develops and begins to operate any infrastructure facility.
- Scientific Research & Development (R&D)—If certain conditions are met, deduction is available of twice the scientific research expenditure incurred by a company on in-house R&D facility where it is engaged in business of bio-technology or in manufacture/production of electronic equipments, computers, telecom equipments, chemicals or other specified articles, like aircraft, helicopters, computer software, etc.
- Royalty/fee for technical services received by a foreign company under an agreement with Government for providing services in or outside India in projects connected with the security of India, is exempt, if such foreign company is notified by Central Government in the Official Gazette. In other cases, in absence of permanent establishment of the foreign company in India, royalty/fees for technical services would be taxable at 10 percent (plus S&C) for agreements entered into after 1 June 2005, subject to fulfilment of certain other conditions.

General

- International transactions with associated companies need to be at arm's length price and subject to transfer pricing regulations.
- Tax payer can approach high-powered Authority for Advance ruling to determine income tax aspects of any proposed or current transactions.
- India has entered into comprehensive treaties for avoidance of double taxation with more than 75 countries and limited agreements with over 15 countries. Tax implications under the domestic laws could be mitigated by resorting to tax treaty.

Direct Tax Code

- The Central Government has released the draft Direct Taxes Code which will replace the Income-tax Act, 1961. The Code aiming to simplify the existing income tax law, is designed to provide stability in the tax regime based on well-accepted principles of taxation and best international practices.
- Some of the key changes proposals of the Code are:
  1. Reduction of the corporate tax rate to 25 percent.
  2. Transition of Minimum Alternate Tax from book profits to value of gross assets
  3. Removing the distinction between long-term capital gains and short-term capital gains.
  4. Introduction of branch profits tax for foreign companies.
  5. Introduction of general anti-avoidance measures.
  6. Advance pricing arrangement for Transfer Pricing
  7. Introduction of thin capitalization rules.

The target date for introduction of the Code is with effect from the financial year beginning April 1, 2011.

Indirect Tax Implications for Defence Sector

- Customs Duties - Effective customs duty rate on import of goods is 26.85 percent based on peak rate of customs duty. Exemption from customs duty is available for majority of goods imported in relation to defence subject to fulfillment of prescribed conditions.
- Excise Duty - Effective excise duty rate is 10.3 percent (inclusive of education cess) on manufacturing activity. Exemption from excise duty is available for goods manufactured for supply to specified defence projects. Further, goods supplied against international competitive bidding (ICB) are also exempt from excise duty subject to fulfillment of prescribed conditions.
- Value Added Tax (VAT) / Central Sales Tax (CST) - While inter-State sale of goods is subject to levy of CST, intra-State sale of goods are subject to levy of VAT. The CST rate is 2 percent if the prescribed statutory form is issued by the purchaser, whereas if no forms are provided, the VAT rate applicable in the originating State of the Seller will be applicable. For most goods, VAT rate in Karnataka is either 5 percent or 13.5 percent, depending on the nature of goods.
- Service Tax - Specified services are subject to service tax and the liability to pay service tax is on the service provider. However, for few specified services including imported services, liability to pay service tax shifts on service recipient. Service tax rate is 10.3 percent (inclusive of education cess).
- Research & Development Cess is applicable on import of technology into India by an industrial concern under a foreign collaboration. Presently, Cess is applicable at the rate of 5 percent. However, the Cess paid can be adjusted against service tax liability accruing under certain service categories
- Indirect tax incentives available to SEZ units for its authorised operations.

Rates of Tax—A Comparison		
State	VAT (Percent)	Entry Tax rate
Karnataka	5 / 13.5	Product specific rate - ranging from 1-5%
Tamil Nadu	4 / 12.5	NA*
Andhra Pradesh	4 / 14.5	NA*
Uttar Pradesh	5 / 13.5	Product specific rate - ranging from 1-5%
Maharashtra	5 / 12.5	Product specific rate - ranging from 4-30%

**Held unconstitutional*

Goods and Services Tax ('GST')

- The Central Government proposes to simplify the various indirect tax levies through the introduction of the Goods and Services Tax (GST) with effect from April 1, 2011. Some of the key features of the proposed GST are:
  1. In the discussion papers released, the Government has indicated that GST shall have two components, one levied by Centre and the other levied by States.
  2. The input tax credit for the central GST and the state GST would operate in parallel and would be available for utilization only against the output payment of Central GST and State GST respectively.
  3. Both Central and State GST would be levied on import of goods and services into the country.
  4. The incidence of tax will follow the destination principle.
  5. Full and complete set-off will be available on the GST paid on import of goods and services.

Foreign Direct Investment Policy

Civil Aviation and Airports

- FDI up to 49 percent is permitted for scheduled air transport services/ domestic scheduled passenger airlines under the automatic route. NRI investment is permitted up to 100 percent under the automatic route. However, no direct or indirect equity participation by foreign airlines is allowed.
- For non-scheduled air transport services/non-scheduled airlines, chartered airlines and cargo airlines, FDI up to 74 percent (with FIPB approval if FDI exceeds 49 percent). NRI investment is permitted up to 100 percent under the automatic route.
- 100 percent FDI permitted under the automatic route for Maintenance and Repair Organisations (MRO), flying training institutes and technical training institutions.
- FDI up to 74 percent (with FIPB approval if FDI exceeds 49 percent) and NRI investment up to 100 percent under the automatic route is permitted for ground handling services subject to sectoral regulations and security clearances.
- FDI up to 100 percent is permitted under the automatic route for helicopter services / sea plane services requiring DGCA approval.
- 100 percent FDI under the automatic route is permitted in setting up of Greenfield airport projects (existing projects would require FIPB approval for FDI beyond 74 percent).

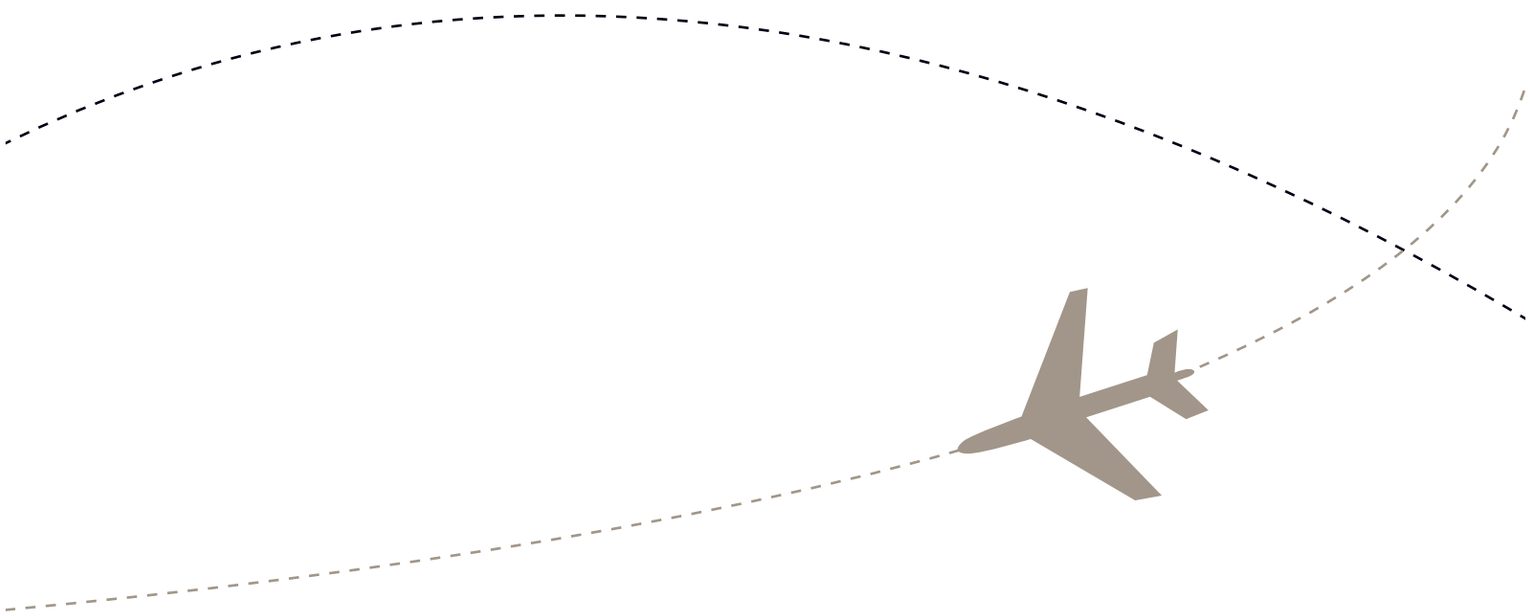
Defence

- 100 percent domestic investment is permitted in manufacturing defence equipment, subject to industrial licensing by the Department of Industrial Policy and Promotion (DIPP)
- FDI, including NRI investment, in this sector is permitted up to 26 percent subject to prior approval of the Government and compliance with the security and licensing requirements and guidelines issued by the DIPP.
- The guidelines for production of arms and ammunitions include stipulations that the management of the Applicant Company/ partnership should be in Indian hands i.e. two-thirds of the Board as well as the Chief Executive must be resident Indians. Further, there is a three year lock- in period for transfer of equity from one foreign investor to another foreign investor.

Special Economic Zone as a policy framework for Aerospace manufacturing in Karnataka

- India's SEZ Act provides excellent tax incentives to both developers and units that are located in the Special Economic Zones. The SEZ Act provides fiscal benefits to both promoters and investors, enabling India to become a preferred destination for outsourcing manufacturing. The most significant aspect of the policy is that there is no export obligation – rather, units need to be foreign exchange positive over a five year period. Moreover, there is no such requirement for the developer. OEMs can develop a defence SEZ and invite its suppliers to set up units in it.
- The Government of Karnataka has formulated a State Policy for Special Economic Zones as per Central SEZ Act 2005 & Rules 2006, with a view to provide a hassle free environment for export production and to attract FDI. The objectives of this policy are to set up a single point clearance to SEZ developers and units, to facilitate and expedite establishing of SEZs, to delegate the powers of the Labour Commissioner to the Development Commissioner of SEZs and to extend incentives as below:
- Exemption from State Taxes for all purchases from Domestic Tariff Area
- Exemption from Stamp Duty
- Exemption from Electricity Duty.
- Capital subsidy for Common Effluent Treatment Plant (Max INR 1 crore per SEZ)
- In accordance with the above policy, the Karnataka government has proposed to set up an aerospace SEZ, near Bangalore International Airport at Devanahalli with one thousand acres to be devoted to expansion of aerospace activity, particularly MRO outsourcing. QuEST Global has already oriented its SEZ for Precision Engineering to become India's first aerospace SEZ in Belgaum in November 2009.

Tax Incentives	Indirect Tax Incentives
• Income tax 100 percent exemption for 10 out of 15 years for developers and 100 percent 5 yrs, 50 per-cent next 10 yrs for units • DDT exemption (not for units) • MAT exemption (also for units)	• No Customs Duty • No Excise Duty • No Service Tax • No CST • Exemption from Local Taxes and Stamp duty



Vision for the Future

Global Trends

- Global aerospace sales are expected to reach USD 2 trillion over the next 20 years. The Asia Pacific region is deemed to be the fastest-growing Aerospace region in the next 20 years with the fleet size expected to triple by 2025.
- OEMs are striving to reduce design-development cycle times in order to bring new products to market more quickly and cheaply as they refocus on their core competencies in design, integration and assembly. Instead of producing major subsystems themselves or dealing with numerous subsystems component suppliers, they have shifted responsibility for these activities down the supply chain.
- The PricewaterhouseCoopers report entitled Flight Global brings out that the aerospace industry anticipates difficult business conditions for the near and medium term, but long-term projections are positive, with airlines expected to need 29,000 new planes valued at USD 3.2 trillion between 2009 and 2028. For now, the defense segment of the aerospace sector has offset the downward trend because it still benefits from continuing government expenditures for defence aircraft.
- The demand for Unmanned Aerial Vehicles and Remotely operated aircraft is bound to increase.

Re-Evaluation of Supply Chain Dynamics

The global recession and significant margin pressures will continue to force global OEM and Tier-1 suppliers to undertake major restructuring and cost cutting exercises. Emerging economies which provide significant cost benefits are increasingly being considered as an outsourcing destination for manufacturing-related work. Karnataka could benefit from this trend with offset obligations acting as a catalyst. Efforts by domestic suppliers to move up the value chain will also encourage foreign companies to outsource more manufacturing related work, rather than only systems and low value IT assignments. In addition, the globalization of MRO services, manpower cost competitiveness, the availability of talent, locational advantages combine to make Karnataka a potential regional MRO hub.

The large and rapidly-growing Indian economy, coupled with impressive domestic demand for air travel and large defence requirements, has led the major aircraft producers to conclude that India is an important future market. The same is also true for all related maintenance and repair services. Karnataka should in turn leverage its competitive advantage by way of availability of a large low cost engineering and skilled talent pool and location advantage of having Defence Public Sector Units ('DPSU') units like HAL and BEL.

Technological Issues

Karnataka needs to keep pace with the increasingly high use of technology across the design lifecycle. Foreign companies may be reluctant to transfer cutting-edge technologies with limited management control to Indian entities. These will have to be leveraged through offsets and by increasing the FDI cap on defence manufacture.

In addition, the composition of materials used in aircraft manufacturing is migrating towards new advanced materials. Currently, almost all raw materials are being imported by Indian suppliers. In the field of advanced materials, novel processing and material characterization methodologies are still emerging and will take time before the State becomes self reliant.

Future Prospects

OEMs and Tier 1 suppliers will be looking ahead to establish customer support centers for stocking spare parts, avionics repair workshops, logistic centers to optimize supply chain management, training centers for training of technicians, engineers, managers and innovation centers besides alliances for manufacturing of sub assemblies. Karnataka, due to the several advantages it boasts of, can be a hub for such aerospace activities. The offset policy, defence or civil, should also allow these to qualify as offset obligations.

India's Offset policy, which prescribes 30% of all deals above 300 Crores to be reinvested into the country, are obliging aerospace partners to set up subsidiaries, enter into joint ventures or outsource design, components, sub-systems, accessories to the Indian aviation industry. Offsets can thus play the role of a catalyst in development of aerospace MRO and manufacturing activity by providing an added incentive to global aerospace majors and their suppliers who are already

seeing sense in putting up a strong presence in India. The effective implementation of such an offset policy coupled with an attractive FDI policy can hasten the pace of indigenization.

The future will also see SMEs in US and Europe building a presence in the Indian aerospace market by working with DPSUs such as HAL and other companies in its supply chain. Similarly, there will be a growing number of aerospace suppliers in the private sector who will also offer the opportunity to partner with lower tier suppliers of aerospace OEMs.

Leveraged by the buoyant Indian economy at a time when the Western markets are strapped of funds, Indian companies will be encouraged to expand into overseas markets by way of acquisition of foreign SMEs or entering into joint ventures with foreign vendors.

As a State, Karnataka has the resources to be a centre of aerospace excellence /cluster of creativity, where it can endeavour to gain global notice for program management, engineering, maintenance, material and information systems support and offer overhaul services to rotary and all fixed-wing aircraft. Rationalization of some features of the existing policy regime will go a long way in assisting indegenisation and absorption of new technologies.

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Our Aerospace and Defence Team

PricewaterhouseCoopers (PwC) has a strong global Aerospace and Defence (A&D) practice that serves most of the leading global companies. To assist our domestic and international client participate in the exciting growth of the Industry in India, we set up the A&D practice in India in 2007. With deep understanding of Government regulations and industry issues, PwC is a one-stop shop for clients and is competent to assist in various aspects of their businesses. Our team consists of professionals with diverse background and experience and is integrated across all lines of service that include regulatory advice and assistance in obtaining approvals, tax and regulatory structuring, advisory services.
To provide the highest possible level of service, we invest the time of our consultants in developing industry expertise. The team maintains strong yet independent relationships with the Government and constantly shares knowledge with players in the industry and Government.

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Notes

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CII catalyses change by working closely with government on policy issues, enhancing efficiency, competitiveness and expanding business opportunities for industry through a range of specialised services and global linkages. It also provides a platform for sectoral consensus building and networking. Major emphasis is laid on projecting a positive image of business, assisting industry to identify and execute corporate citizenship programmes. Partnerships with over 120 NGOs across the country carry forward our initiatives in integrated and inclusive development, which include health, education, livelihood, diversity management, skill development and environment, to name a few.

CII has taken up the agenda of "Business for Livelihood" for the year 2010-11. Businesses are part of civil society and creating livelihoods is the best act of corporate social responsibility. Looking ahead, the focus for 2010-11 would be on the four key Enablers for Sustainable Enterprises: Education, Employability, Innovation and Entrepreneurship. While Education and Employability help create a qualified and skilled workforce, Innovation and Entrepreneurship would drive growth and employment generation.

With 64 offices in India, 9 overseas in Australia, Austria, China, France, Germany, Japan, Singapore, UK, and USA, and institutional partnerships with 223 counterpart organisations in 90 countries, CII serves as a reference point for Indian industry and the international business community.

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