

# Navigating a safe landing into India

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# Agenda

- Drivers of Growth and Value Proposition
- Industry Players
- Market intelligence and trends
- Role of Government and Policy Framework
- Business Model strategies
- Q&A

# Transformation of Aerospace Supply Chain

Changing industry dynamics requires a re-think on how to leverage capabilities across the globe.

Aerospace and Defence OEMs are moving from vertically-integrated manufacturing to design and systems integration

- Tier-based system of suppliers
- After market industry

Increasing outsourcing to low cost manufacturing locations

- OEMs are working with low cost manufacturers in India, China, Brazil
- Maintain a supplier base across the world
- Share the risk of development with suppliers

# Trends

MRO Outsourcing will increase from 52% in 2006 to 65% in 2016

## MRO – labour intensive

- Formation of non-traditional vendor partnerships to outsource non-core processes
- Focus on Innovation
- Trust-based relationships being developed between Primes and Tier 1 suppliers.
- Focus on accessing supplier investments in scale and expertise
- Risk sharing

## Shift to emerging markets in Asia

- 70% of MRO market is based in USA and Western Europe
- MRO market expected to reach \$US 61 billion by 2017

# Trends

## Research & Development

- Indian R&D capabilities recognised by aerospace majors who are forming partnerships with academia/industry and establishing captive R&D centres.
- Inherent advantage of access to engineers and scientists

## Airbus

- India is a key centre for design and development of A350 aircraft.
- Airbus Engineering Centre India, Bangalore – hi0tech component manufacturing capability

## Snecma

- Global Aerospace company established R&D centre in India in 2002

# So, why is India attractive?

## India is fast becoming a major global aerospace market

Increasing defence spending

Booming commercial aviation market

Demand from High net worth individuals

Rising technological and manufacturing capabilities

Positive role of Government as a driver of demand, especially in Defence

Fundamental strength in Indian SME suppliers at sub-component and component level

# Drivers of growth in India

Boeing has projected a demand for 900-1,000 commercial aircrafts worth \$100 billion over the next 20 years.

\$25 billion forecast spending on commercial aircraft until 2014.

\$100 billion on defence until 2014.

Source: PwC study



# Long history in Aviation

Indigenous capability is linked to national pride.

Long history of government investment and support of sector, since 1940.

Defence production opened to private players in 2001

1940

Hindustan Aircraft Limited formed (first aircraft company)

1942

Formation of Indian Institute of Science (IISc) and Council of Scientific and Industrial Research (CSIR)

1948

Aeronautical Society of India (AeSI) established

1958

Establishment of Defence Research & Development Organization (DRDO)

1959

National Aerospace Laboratories (NAL) formed

1964

Hindustan Aeronautics Limited (HAL) formed

2001

Defense production opens to private players



# Development of Local Industry

2001

- Govt allowed 100% domestic private investment upon obtaining Industrial License
- 26% FDI with conditions
- Key Players
  - Mahindra & Mahindra
  - Tata
  - Larsen & Toubro
  - Kirloskars

2006

- Defence Off-set policy
- Propelled local industry

2008

- Significant liberalisation
- New players aggressively building capability
- Attractive partners for Primes and Tier-1 suppliers
- Foreign companies also showing interest in being present in India

# India's Value Proposition as a Manufacturing Destination

## Domestic Aircraft demand

- Leading aircraft manufacturers estimate that India will be the fastest growing country in terms of air travel for the next 20 years

## Off-set requirements

- Government requires minimum 30 % plough back of foreign defence procurement into the Indian defence industry

## Cost advantages

- Advantages vary in magnitude across the value chain and can range from 15% to 25% in manufacturing. Local sourcing of parts and raw material increases savings by 10-20%

## Talent Pool

- Acute shortage of engineering talent reported by Global aerospace majors

## Leveraging IT competitiveness

- Indian IT Firms have developed best practice processes for quality, project management – which are transferable to the Aerospace industry

# India's Value Proposition as MRO destination

## Manpower cost arbitrage

- MRO manpower costs \$30-\$35 per hour
- 60% cheaper than Europe/US but not dissimilar to China, Indonesia

## Locational advantages


- No MRO hub within 5 hour fly zone of India
- Inherent geographic advantage of being in between Europe and Asia Pacific region
- Domestic carriers benefit from MRO hub in India

## Untapped opportunity

- MRO companies have spotted the opportunity in this segment given its labour intensive nature.
- Logical addition to capability

## Graded development

- Airframe is prime candidate for off-shoring to India.
- As competencies grow – line maintenance and component repairs will be next segments
- Engine overhaul is likely only after industry has matured.



Movers and Shakers

# INDIAN AEROSPACE INDUSTRY

# Leading India-based Aerospace Players

## Hindustan Aeronautics Limited (HAL)

- Government controlled; 19 production units; 9 design centres across 7 locations in India. Exports to 30 countries. Manufactures 12 types of aircrafts with in-house R7D and 14 under license. Has manufactured over 3550 aircrafts, 3600 engines, overhauled over 8150 aircrafts and 27,300 engines

## Bharat Electronics Limited (BEL)

- Has entered into MoUs with aerospace majors like Lockheed Martin, Boeing, EADS, Northrop Grumman for opportunities arising out of off-sets.

## Dynamic Aerospace

- Known for development of complex aero structures like wing, rear fuselage, ailerons flaps, fins, stats, stabilisers, canards and airbrakes. Has the largest infrastructure in private sector for manufacturing of exacting Air Frame structures and precision aerospace components.

## Taneja Aerospace & Aviation Limited

- The only listed company in aerospace manufacturing in India. Manufactures small civilian aircraft, aero structures and aircraft parts. Provides aircraft maintenance services and represent CESSNA for sale of aircrafts in India.

# India Plans of Global Aerospace Majors

## EADS

- Plans to outsource to India approximately \$5 billion worth of aerospace components, systems and software over next 10 years.
- Currently outsources \$126 million in aero infrastructure and engine components each year to Indian vendors and expects this number to rise to \$1.3 billion annually by 2020.

## Boeing

- Expects commercial aircraft orders worth \$40 billion in the next 20 years and defence sales of \$10-\$15 billion over next 10 years from India
- Has forged major partnership with HAL worth \$1 billion in defence
- Started outsourcing work for Dreamliner jets and F-18 Super Hornet combat aircraft to India.
- Technology transfers occurring for sophisticated composite materials
- Outsourcing aerospace structures and aviation products to 7 firms against its \$600 million the off-set requirements

## Eurocopter

- Eurocopter is developing a precision manufacturing facility in India in collaboration with Mach Aero.
- Eurocopter will assist Mach Aero in developing globally accepted high levels of technology, quality and production rates



## Trend: Automotive companies entering Aerospace

Automotive companies entering aircraft component production

Becoming involved with precision engineering, machining, aircraft lighting, manufacture of tyres and transmission components

Tata Automobile entered into agreement with Boeing to manufacture components for 787 Dreamliner

Mahindra & Mahindra

# Trend: Increased investments planned in India MRO capability

Foreign companies are bullish regarding India's potential as MRO Hub

## Several alliances formed with local companies

- Air-India Boeing MRO – JV
- Taneja Aerospace entered MRO facility agreement with Air Works
- Indian Airlines formed MRO JV with Airbus and Jupiter Aerospace
- AirWorks plans to invest \$120million
- European Aeronautic Defence & Space Co (EADS) signed JV with National Aerospace Co (NACIL). MRO facility to be established in Delhi by 2013.

## Select states positioning as MRO hubs

- Example: GUJARAT
- Government plans to float a company – Gujarat Airport Infrastructure Company

# Major India-based MRO Players

## HAMCO

- Hyderabad Aircraft Maintenance Co.
- Maintenance for commercial planes
- Avionics, Electrical Wiring Inspections

## GMR Group

- Fastest growing Bangalore based infrastructure company
- Development of airports, highways and urban infrastructure

## Air Works India

- Established 1951, offers general aerospace services
- Attracted US and Indian private equity in 2007
- Plans to increase presence

## Max Aerospace and Aerospace Limited

- Established 1994, provides engineering support for major commercial airlines
- Offers: Avionics, Electrical, Air Frame, Simulator Division, Manufacturing Services

# Key Challenges to MRO proposition

## Tax and regulatory environment

- High rates of indirect taxes
- Service tax of 12.36% for servicing aircraft
- Imported spares charged 27% custom duties (unless exemption applies when conditions met)

## Shortage of land at India's major airports

- With privatisation of airports there is greater transparency into land allotment process



# ROLE OF GOVERNMENT & POLICY FRAMEWORK

# Tax and Policy Framework

- Federal tax structure whereby Central and State Governments impose a range of taxes
- Complex, multi-tiered tax structure in India makes domestic manufacturing uncompetitive in a range of situations
- Defence sector: Imported supplies on occasion are subject to lower incidence of taxes than locally supplied goods



# Policy framework – FDI

- Government encourages private investment in both civil and defence aerospace sector with the goal of encouraging technology transfers and indigenisation.
- Significant liberalisation of Civil Aviation sector
  - 100% foreign direct investment allowed on automatic route in most areas.
  - Exception: Air traffic services
- Defence sector has some restrictions
  - 26% cap on FDI
  - 100% domestic private investment allowed subject to licensing
- **Important to seek specialist advice**

# Government Initiatives

- Tamil Nadu Government
  - Aeropark for global; aerospace and aeronautics industry in design, manufacture and maintenance of aircrafts
  - Similar to Dubai, China and Singapore
- Andhra Pradesh Government
  - 2 aerospace precision engineering SEZs
  - Tata and 50 companies propose to establish

## Initiatives in Establishing Aerospace Ecosystems in India

1. Aerospace Park, CII, Chennai—The Confederation of Indian Industry (CII) has proposed to establish an aerospace park in Chennai. The proposed park will attract an investment of USD10 billion and will create over 100,000 jobs.
2. SEZ, Quest, Belgaum, Karnataka—QuEST Global is establishing an industry-specific precision engineering SEZ in Belgaum, Karnataka. QuEST Global SEZ has already signed three clients, namely QuEST Global Engineering, QuEST Global Manufacturing and Aerospace Processing India (API) for the SEZ.
3. SEZ, APIIC, Hyderabad—This SEZ will focus on avionics systems repair, precision component fabrication, airframe and engine components, mechanical, electrical and electronic components. A group of approximately 35 companies, under the aegis of Samuha Engineering Industries, will be developing units to supply equipment and services to defence establishments in the country.
4. Lepakshi Aerospace Park, Chilamattur, Anantapur District, Andhra Pradesh— The SEZ will have an integrated ecosystem for research, design, manufacture and maintenance of aircrafts, both civil and defense. The 2,500 acre SEZ, in close proximity to the Bangalore International Airport, has received in-principal approval from the Board of Approvals on 15th January, 2009.
5. SEZ, KIADB, Devanahalli, Karnataka—The Karnataka Industrial Areas Development Board (KIADB) proposal has received in-principle clearance by the Karnataka government for establishing an aerospace SEZ in Devanahalli.
6. SEZ, TAAL, Bangalore—Taneja Aerospace & Aviation Ltd (TAAL) received in-principle approval from the government to set up a SEZ dedicated to aviation in Bangalore.

*Source: Secondary research*



# BUSINESS MODEL STRATEGIES

# Public Private Partnership model

2008 Boeing

- entered into agreement with Wipro, HCL. Indian Institute of Science to develop wireless and other network technologies for aerospace related applications

2007 M&M

- signed an agreement for design and development of new general aviation aircraft with National Aerospace Limited (NAL), CSIR and Government of India. First public private JV in the aircraft design sector in India

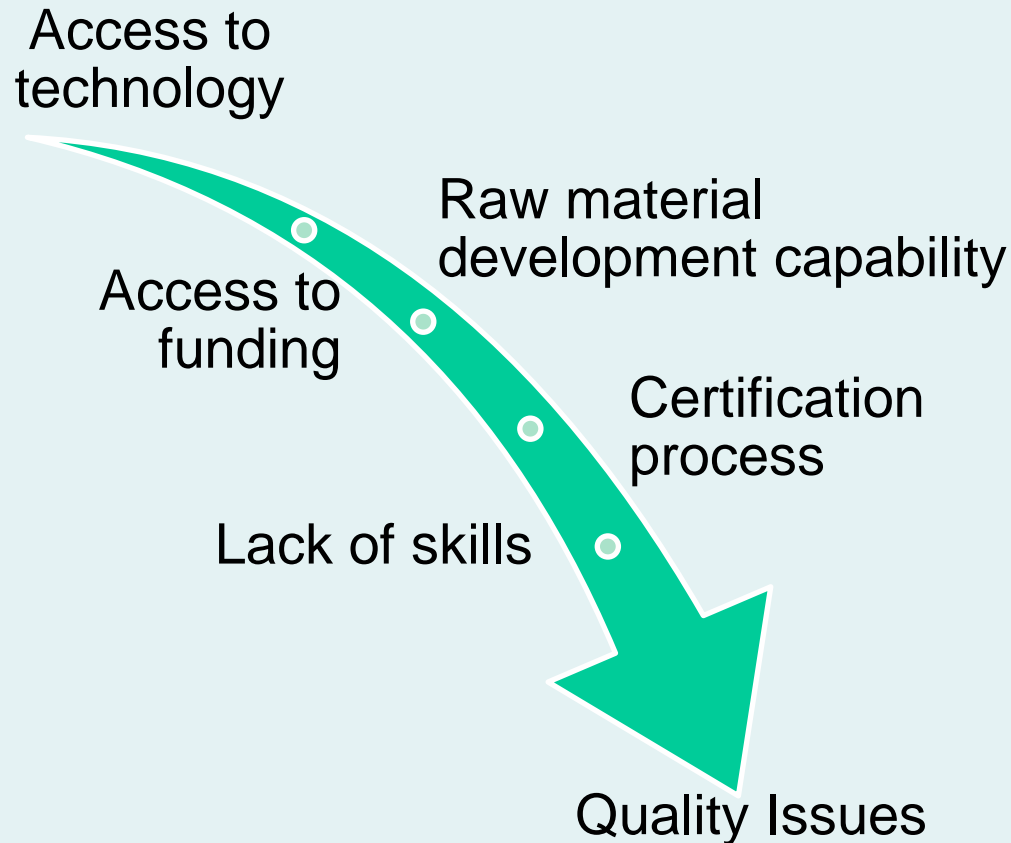
# Takeouts from M&M acquisition of GA and Aerostaff

- 1+1 = 11
- What was initially considered to be a \$50 million turnover opportunity has expanded into \$200-\$300 million.
- This \$200-\$300 million market could not have been accessed by Australian company alone.
- GA is getting significant interest in their aircraft.
- Aerostaff's opportunities have also expanded to include manufacturing parts for GA.
- Western experience is highly necessary and valued in this highly regulated industry – which has been the domain of US and European companies primarily
- M&M invested \$7million in NM5 and was unable to get it to fly
- M&M was only able to achieve this goal with its Australian partners
- Australian capability is highly valued
- Australian companies need to be cognisant of the strategic opportunity available to both parties in a partnership





# Key challenges for India/ Or Key opportunities for Australia



# Key challenges for India

# Key opportunities for Australia ?

## Access to technology

- Foreign companies are reluctant to transfer cutting edge technologies with limited management control in the Indian entity.
- In the past licenses provided for older technologies

## Raw material development capability

- Significant shift in type of raw materials being used in airframe structures
- Material composition changed from 80% aluminium to 60% titanium and composites and only 20% aluminium (as a % of structural weight)
- Currently all material is being imported and it will take awhile for India to become self-reliant

## Access to funding

- Funding access is a barrier to entry in this highly capital intensive business.

# Key challenges for India Key opportunities for Australia?

## Certification process

- Getting international airworthiness certification for processes and parts has been a challenge especially as this does not occur within the country.
- Adds significantly to the cost of this process.
- Eg. Mexico does this locally

## Lack of skills

- While there are a number of engineering graduates, they are not “industry-ready” and lack employability.
- A lot needs to be done to exploit India’s demographic advantage

## Quality Issues

- Inability of small suppliers to keep abreast of rising quality issues in an industry that works to a zero-defect target

# Landing Lights

Any India engagement strategy should involve engagement with various industry and government bodies

- Ministry of Defence (MoD)
- Directorate General of Civil Aviation (DGCA)
- Aeronautical Society of India, Hyderabad
- Aeronautical Development Agency (ADA)
- National Aerospace Laboratories (NAL)
- Hindusthan Aeronautics Limited (HAL)
- Centre for Military Airworthiness and Certification (CEMILAC)
- Directorate General of Aeronautical Quality Assurance (DGAQA)

# Key takeouts

Engagement with Government, Industry bodies and key commercial operators is essential in any India engagement strategy in the Aerospace/Aviation sector

Australian capability is of very high standard and can fill critical gaps in capability in India.

Large Indian companies will be aggressively seeking partnering opportunity, so negotiating the right outcome is key.

Development and commercialisation of appropriate grade raw materials presents an opportunity.

# Pitcher Partners India Advisory

- India Engagement Strategy and Execution
- Identification of partnerships
- Specialist Negotiation capability
- M&A advice
- Valuation
- International Tax & structuring
- Industry expertise
- Local agents

India Advisory  
Practice





# Questions



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