This ‘round table’ meeting brought together senior officials from both countries to build closer links between the UK and India in the areas of:

- Industrial Strategies – including sectoral and ‘horizontal’ strategies
- Manufacturing Futures – including processes and findings
- Innovation and Manufacturing – including research, education and links

Much common ground was identified including the importance of manufacturing to economies, the need for a broader definition of manufacturing, the role of translational mechanisms between research and practice, and the challenge of inspiring the next generation with enthusiasm for manufacturing. Key topics and potential actions included:

### Industrial strategies

Both countries have developed over recent years a greater focus on the importance of government engagement with industry.

In India, there are well-established mechanisms for manufacturing advice to Government – specifically, the National Manufacturing Competitiveness Council (NMCC). Mr Ajay Shankar, Member Secretary of the NMCC, provided an overview of the trends and strategic priorities for Indian policies towards manufacturing and related industries. Mr Chris Carr, Deputy Director of the Department for Business, Innovation and Skills (BIS) from the UK side presented the key elements of the UK industrial strategies which have recently been brought together following close consultation between senior industrialists and officials in key sectors.

Identified opportunities included:

- Mapping manufacturing contributions to societal challenges
- Promotion of engagement between India and UK SMEs
- Sharing similarities and differences of UK & India manufacturing challenges and priorities in order to develop complementary initiatives
- Identifying global manufacturing trends for national industrial policy development

### Manufacturing Futures

Rapidly evolving national and technological capabilities are dramatically changing the context of future manufacturing. The responses will be different for each country but the global context is common.

The UK recently completed a major Foresight study into the future of manufacturing, which highlighted likely future trends. These were presented by Mr Paul McCaffrey, Prof Steve Evans and Mr Chris Carr. Professor B. Ravi of IIT Bombay gave a comprehensive overview of the perceived manufacturing trends in India highlighting the broader view of manufacturing, which both countries shared, and the importance of attracting young people to manufacturing.

Identified opportunities included:

- Development of broader definitions of manufacturing
- Inspirational international engagement of young people
- Refreshment of manufacturing curricula
- Sharing of expertise and insights in the conduct of futures studies
Innovation and Manufacturing

Both countries are placing great emphasis on the links between science, technology and industrial exploitation.

In India, there have been major investments in education with expansion of universities across the country and the establishment of new IITs to extend the highly regarded network of such institutions across India. In the UK, there has been a major investment in Catapult Centres, which are designed to build bridges between research and industry. The High Value Manufacturing Catapult comprises seven locations around the UK. The Chief Executive Officer, Mr Dick Elsy, presented the structure and activities of the Centre noting that it was already exceeding its planned targets. Mr Sabyasachi Dasmohapatra, CEO of GITA, introduced its new innovation activity and planned joint activities with the TSB.

Identified opportunities included:

- Identification of potential UK-India partnerships in ‘translational’ activities involving the UK’s High Value Manufacturing Catapult
- Identification of ‘game changing’ technologies e.g. ‘big data’, additive manufacturing
- Higher visibility for manufacturing opportunities including social networking

Developing the Opportunities

The substantial common ground and clear opportunities for collaboration suggested that some practical next steps be taken including:

- Establishment of a small executive UK-India Manufacturing Action Group
- Development of a rolling one-year programme of activities involving other groups with manufacturing interests including NMCC, BIS, FICCI, CII, JETCO, TDB, TSB, GITA, HVM Catapult, RCUK, DST, UK/India universities, etc. Possible work streams might include:
  - industry and research interfaces – including new mechanisms
  - manufacturing education – including inspiration and curricula
  - manufacturing and ‘big data’ – including digital and distributed
  - emerging production technologies – including additive
Speakers

Introduction:
• Professor Sir Mike Gregory, Head, Institute for Manufacturing, University of Cambridge

Industrial and Manufacturing Strategy:
• Chris Carr, Department for Business, Innovation and Skills
• Ajay Shankar, Member Secretary, National Manufacturing Competitiveness Council

Manufacturing Foresight:
• Paul McCaffrey, Project Leader, Future of Manufacturing Project Foresight, UK Government Office for Science
• Professor Steve Evans, UK Centre for Industrial Sustainability; Member of Foresight Expert Group
• Professor B. Ravi, Department of Mechanical Engineering, Indian Institute of Technology (IIT), Bombay

The Role of Intermediary Institutions:
• Dick Elsy, Chief Executive, High Value Manufacturing Catapult
• Sabyasachi Dasmohapatra, CEO, Global Innovation & Technology Alliance (GITA), New Delhi

Attendees

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UKTI

Vijay Iyer
SIN-India

Sudipto Sen
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Anshika Jha
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