

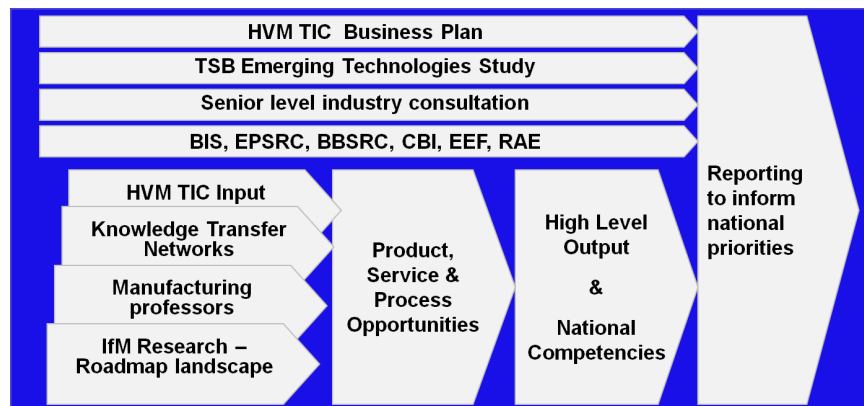
Technology Strategy Board
Driving Innovation

Investing in the future

Welcome to the seventh and final newsletter in the current series. In October 2010, the Prime Minister announced that over £200m will be invested in a network of elite technology and innovation centres, to be established and overseen by the Technology Strategy Board. These centres will be an important part of the UK's innovation system. They will allow businesses to access equipment and expertise that would otherwise be out of reach.

They will also help businesses access new funding streams and point them towards the potential of emerging technologies. The new investment will further bridge the gap between universities and businesses, helping to commercialise the outputs of Britain's world-class research base. This newsletter keeps you informed about the development of the first of these centres and provides details of one of its constituent members. This issue profiles Warwick Manufacturing Group (WMG), which is based in Coventry.

Results of "Future Trends" Study

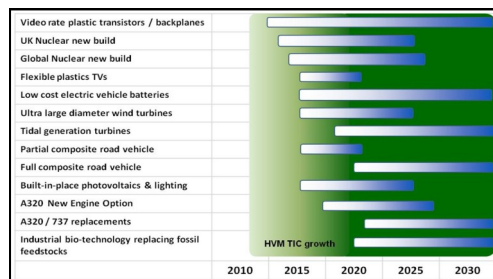


IfM Study Approach

One of the first activities of the High Value Manufacturing technology and innovation centre was to commission a study of future trends in manufacturing by the Institute for Manufacturing (IfM) at the University of Cambridge (see newsletter #2). The study has built on road-mapping work carried out previously and included extensive consultation with industry, academia, the Research Councils and the Knowledge Transfer Networks.

The overall aim of this project is to map the landscape which will shape the UK's High Value Manufacturing and innovation base over the next 15-20 years.

Examples of major Market opportunities for the UK



In particular, the project aimed to identify:

- The most important trends influencing the changing nature of manufacturing
- The greatest challenges and opportunities

related to the competitiveness of UK manufacturing enterprises

- The most promising science, engineering and management innovations which may help meet these challenges and opportunities
- Opportunities to build common technologies across different sectors

Linking the global 'high value manufacturing landscape' and 'areas of potential international leadership for the UK' has enabled "hot spots" to be identified, where UK capability aligns well with future global manufacturing needs and innovation challenges. This has allowed the identification of a number of UK National Competencies that the HVM TIC will aim to make available to UK industry through its strategic delivery plan. These competencies fall into the five broad areas which can be categorised as "better, cheaper, faster & greener" together with "new business models". An example of a competency in each broad area are "development & application of advanced coatings" (better), "automation & the human/machine interface" (cheaper), "tool-less & one-shot manufacture—including new modelling & simulation capabilities" (faster), design & manufacture for sustainability—including materials development" (greener) and "distributed manufacture" (new business model). A full report including all of the National Competencies will be available before the end of December.

CONSORTIUM MEMBERS

In each issue we profile one member of the consortium



Partner Spotlight: Warwick Manufacturing Group

Creating Innovative Solutions



WMG has a thirty year track record in collaborative R&D, delivering numerous innovations which have been embedded in successful products and processes in a wide range of sectors. It builds on the research pedigree of the University of Warwick and is recognised for the success of its partnership with business, and in particular its impact in the automotive sector. WMG's focus is on the international challenge of Low Carbon Mobility, with a whole systems approach exploiting leading edge capability including:

- Light-weighting and characterisation
- Sustainable materials – including life-cycle analysis
- Digital manufacturing and technologies
- Simulation and modelling
- Embedded systems
- On-platform energy
- Customer interface
- Product visualisation
- Operations – lean, six sigma, education and skills
- Technology and knowledge integration
- SME engagement

This expertise forms the basis of three R&D themes which address key priorities in the technology

roadmaps of the automotive, commercial and off-road, rail and marine sectors. The immediate R&D priorities, which are being developed in collaboration with companies from these sectors, are:

- Lightweight Product / System Optimisation – including structural optimisation and the manufacture and performance of advanced materials
- Energy Storage and Management – exploiting the unique Vehicle Energy Facility at WMG and a planned new facility enabling energy storage R&D
- Digital Validation and Verification – including multi-sensory simulation, digital performance prediction and whole system modelling

WMG provides access to unique R&D facilities and specialist staff; a network of international satellite centres (including in China and India) and operates dedicated SME and supply chain programmes.



WMG's R&D facilities are based in four buildings on the Warwick campus, including the International Manufacturing Centre, International Auto-

motive Research Centre and the International Digital Laboratory. These provide over 16,000 m² of capacity. The International Institute for Product and Service Innovation currently under construction will provide a new focus to R&D in user focused multi-functional products.

WMG's multi-partner projects have been delivered across industry sectors including automotive, aerospace and defence, energy and utilities, food and drink, construction, healthcare, ICT and pharmaceutical.

WMG develops and delivers world class education programmes to industry in the UK and internationally. WMG's programmes which have involved over 25,000 participants led to the award of the Queen's Anniversary Prize for Higher and Further Education in 2009. A new EPSRC funded Industrial Doctorate Centre in High Value, Low Environmental Impact Manufacturing is focused on developing the future leaders of industry.

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Advanced Forming Research Centre
Location: Glasgow
Key Competencies: Billet Forging / Sheet Forming / Precision Forging
Contact: Bill Ion
w.i.ion@strath.ac.uk

Advanced Manufacturing Research Centre with Boeing
Location: Sheffield
Key Competencies: Machining / Materials and Component Testing / Hybrid & Metallic Composites / Assembly
Contact: Keith Ridgway
k.ridgway@sheffield.ac.uk

Centre for Process Innovation
Location: Wilton, Sedgefield
Key Competencies: Chemical Processing / Biotechnology / Printable Electronics
Contact: Nigel Perry
nigel.perry@uk-cpi.com

Manufacturing Technology Centre
Location: Coventry
Key Competencies: Automation & Tooling / Fabrication, Joining & Assembly / Additive & Net shape / Process Modelling
Contact: Clive Hickman
clive.hickman@the-mtc.org

National Composites Centre
Location: Bristol
Key Competencies: Design & Manufacture of Composites
Contact: Peter Chivers
peter.chivers@nccuk.com

Nuclear Advanced Manufacturing Research Centre
Location: Sheffield
Key Competencies: Fabrication of Civil Nuclear Components
Contact: Stephen Court
stephen.court@namrc.co.uk

Warwick Manufacturing Group
Location: Coventry
Key Competencies: Lightweight Product System Optimisation / Energy Storage and Management / Digital Verification and Validation
Contact: Dave Mullins
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A number of centres also offer competencies in: Measurement & Verification / Cost Modelling / Design & Manufacturing Systems / Materials Analysis

Enquiries on the High Value Manufacturing technology and innovation centre should be addressed to: Margo Hutchison, margo.hutchison@strath.ac.uk or +44 (0) 141 534 5200

For enquiries about the overall programme of technology and innovation centres please contact centres@tsb.gov.uk