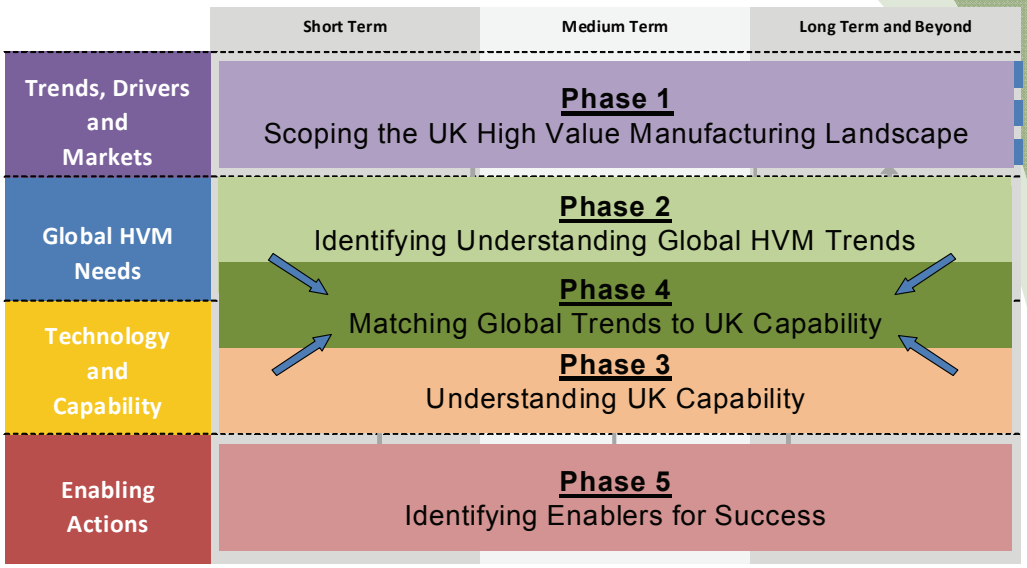
Issue 02
JULY 2011

HVM Technology and Innovation Centre news

Newsletter of the High Value Manufacturing Technology and Innovation Centre

Technology Strategy Board
Driving Innovation

Investing in the future



Welcome to the second 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 the Advanced Manufacturing Research Centre at the University of Sheffield.

UK Manufacturing—Future Trends

One of the first activities of the technology and innovation centre has been to commission a study of future trends in manufacturing. This work is being carried out by the Institute for Manufacturing (IfM) at the University of Cambridge and will run over the next 3 – 4 months. It will build on road-mapping work carried out previously and it includes extensive consultation with industry, academia, the Research Councils and the Knowledge Transfer Networks. Companies wishing to be involved are asked to contact the address at the end of this newsletter.

Illustrated above, 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. In particular, the project aims 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

This study runs in parallel with the development of the TIC's business plan, in order to establish the context within which the centre will operate.

Linking the global 'high value manufacturing landscape' and 'areas of potential international leadership for the UK' will enable "hot spots" to be identified, where UK capability aligns well with future global manufacturing needs and innovation challenges. This will in turn help to shape the centre's evolving strategy. Further, it may identify areas of opportunity which are not currently addressed by the centre or UK manufacturing research, and may usefully support the case for new research or innovation activities.

This initial programme will be delivered in time to support the development of the centre's business plan which will need to be in place for the technology and innovation centre to be operational in October 2011.

CONSORTIUM MEMBERS

Advanced Forming Research Centre
Location: *Glasgow*
Key Competencies: *Billet Forging / Sheet Forming / Precision Forging*
Contact: *Bill Ion*
w.j.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
David.Mullins@warwick.ac.uk

A number of centres also offer competencies in: *Measurement & Verification / Cost Modelling / Design & Manufacturing Systems / Materials Analysis*

In each issue we profile one member of the consortium

Partner Spotlight:
Advanced Manufacturing Research Centre
University of Sheffield

A decade of innovation

The University of Sheffield Advanced Manufacturing Research Centre (AMRC) with Boeing, focuses on advanced machining and materials research for aerospace and other high-value manufacturing sectors.

Over the past 10 years, the AMRC has established itself as a world-class centre for collaborative research. It has received numerous awards, including Boeing Supplier of the Year, and become a model for research centres worldwide.

The AMRC identifies, researches and resolves advanced manufacturing problems on behalf of its industrial partners. Over sixty companies have joined as members, from global aerospace giants to local SMEs. Researchers work with individual companies on specific projects, and collaborate on generic projects for the benefit of all members. R&D topics at the AMRC are determined by the board of industrial partners. This ensures that work is focused on industrial commercial requirements, and provides lasting value to members.

Core research areas include:

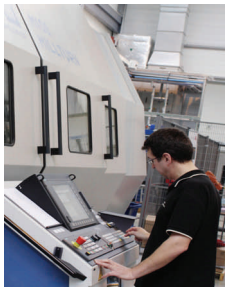
- Machining – High-performance machining research is at the heart of the AMRC's work. By using dynamic analysis, simulation, advanced fixturing, and other techniques, the Process Technology Group can typically improve the efficiency of a machining process by around 40 percent – and in some cases, by significantly more.

- Assembly – The AMRC Assembly Group solves problems in high-value assembly. Key areas include large-product metrology; vision and inspection systems; smart tooling; and automated part recognition and tooling.

- Composites – The AMRC has composite capability, and is a part of the National Composite Centre-led network of centres. The AMRC has focused composites manufacturing capability in Metal Matrix Composites, Hybrid Structures and Automated Fibre Placement.

- Structural testing – The Advanced Structural Testing Centre provides testing and certification services for components and assemblies, ensuring that parts produced by innovative methods meet industry standards.

The AMRC now employs around 180 highly qualified researchers and engineers, in two purpose-built centres on the Advanced Manufacturing Park in South Yorkshire. It is currently preparing for further growth as part of the new University of Sheffield Advanced Manufacturing Institute.



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