

Technology Strategy Board

Driving Innovation

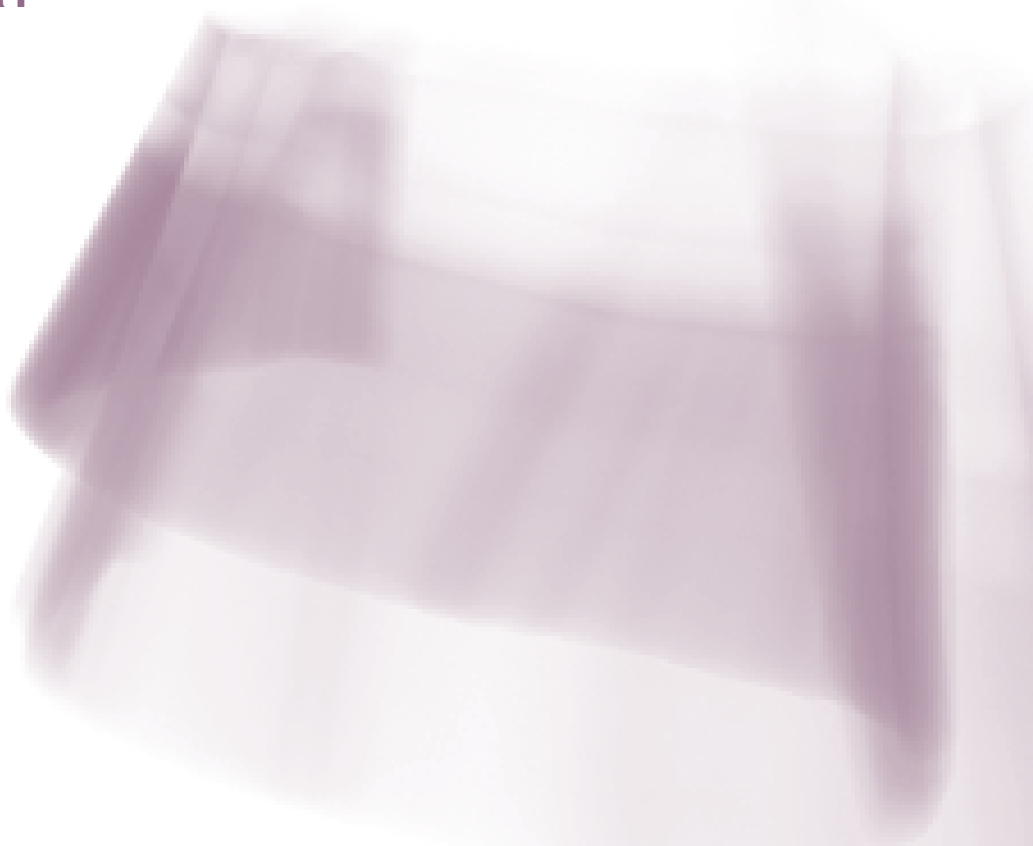


High Value Manufacturing

Key Technology Area

2008-2011

EXECUTIVE SUMMARY



Executive Summary

Manufacturing globally is a key provider of wealth and employment, accounting for \$4.4 trillion of value-added world-wide. Using the conventional international definition of manufacturing, the United Kingdom is the sixth largest manufacturer by Gross Value Added (GVA) in the world and has an industry which accounts for 14% – 15% of Gross Domestic product (GDP) and 50% – 55% of exports, as well as employing 3m people. A wider definition, including industrial services, construction and oil & gas, results in a GDP contribution closer to 27%. Manufacturing is also one of the primary mechanisms for realising wealth from new technologies and is therefore critical to the UK.

With the lowering of economic barriers to trade, the reduction in transport costs and the enabling effect of communications technology, manufacturing is highly competitive and gravitates to countries of lowest overall cost. Manufacturing in comparatively high wage economies such as the UK, has therefore had to change radically to remain globally competitive. Rapid change will continue for the foreseeable future and the continuing development path for manufacturing in the UK is one where:

- Its composition will continue to move away from the traditional areas, towards high-value, knowledge-intensive goods
- The emphasis of activities will not just be on production, but will embrace provision of lifetime service, around a manufactured product
- Continued automation of physical and information processes will drive efficiency improvement
- The business model will be increasingly specialised, with outsourcing of non-core activities
- The value chain will be increasingly complex and international resulting in global value networks

The challenge for UK manufacturers is to remain competitive in this environment, which in turn translates into being continually innovative. Against this background, the Technology Strategy Board's broad aim is to invest in UK manufacturing companies to maintain and develop their international competitiveness. This aim will be achieved by focusing on innovation in four broad areas, which can be regarded as the four pillars of high value manufacturing:

- Products
- Processes
- Service Systems
- Value Systems

These pillars must then be underpinned by innovative technologies, applicable across the lifecycle, and scoring highly against the Technology Strategy Board's four criteria. The technologies chosen in this respect are:

- Modelling, Analysis & Simulation
- High Value Products
- Resource Efficient and Sustainable Processes
- Disposal & Recycling
- Whole Life Planning
- Innovative Service Solutions & Condition Diagnosis
- Design & Innovation Process
- Collaboration within Extended Operations & global value networks
- Materials & Metrology

In more specific terms, the key recommendations of this strategy document are that the Technology Strategy Board should, over the period 2008 – 2011, invest in the development of UK manufacturing industry by:

- Running broadly-based collaborative Research & Development programmes, as well as scoping studies, proof-of-concept and demonstration projects, covering a wide range of industries

This is a summary of the Technology Strategy Board's High Value Manufacturing Key Technology Area strategy. For the full document see www.innovateuk.org

- Investing in knowledge transfer through engagement with business, the Knowledge Transfer Networks (KTNs), Knowledge Transfer Partnerships (KTPs), Research Councils including the Innovative Manufacturing Research Centres (IMRCs), Government Departments and the Regional Development Agencies/Devolved Administrations (RDAs/DAs)
- Supporting skills development directly through the KTP programme and indirectly through the BERR Ministerial Advisory Group on Manufacturing and through the National Skills Academy for Manufacturing
- Promoting international engagement by investing in scoping studies which identify issues and barriers to the global success of UK manufacturing

This approach will be promoted actively to industry and academia to maximise the coverage and impact.

The overall aim is for the Technology Strategy Board to invest in the development of the UK to maintain its place as one of the world's leading manufacturing locations. The UK has a broad range of world-class manufacturing companies, both small and large, and has demonstrated how a nation can evolve from a traditional manufacturing base by applying modern manufacturing philosophies and by applying technology. In particular, the aim is to present the UK as a country where high value manufacturing can prosper and where business can develop sustainable solutions for all aspects of the product or asset lifecycle.

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