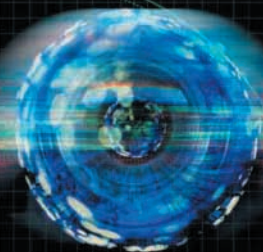


# Technology Strategy News

Spring 2006 Developing a Technology Strategy for UK Wealth Creation



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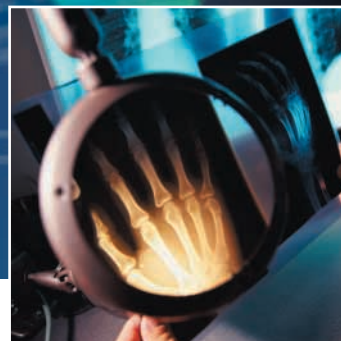
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# Welcome

Welcome to the first Technology Strategy newsletter. As Chairman of the Technology Strategy Board, I'm pleased to be able to update you on the progress that we've made towards developing a national Technology Strategy for UK wealth creation.



**Graham Spittle**

In our first year, much of what you've seen has been concentrated around the Technology Programme Collaborative R&D grants and building up a network of Knowledge Transfer Networks. But we've also been developing other approaches for creating the right environment to support our innovative businesses and to help maintain and increase the UK's position globally.

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# Introduction to the Technology Strategy

Many companies in the UK need to innovate more. The Technology Strategy aims to provide the environment where innovative companies can thrive.

The business environment is increasingly conditioned by two factors - the relentless pace of technological development and the globalisation of the world. In consequence, the requirement for companies to constantly strengthen their capabilities and find innovative ways to satisfy customer demands has never been greater. At the same time society faces numerous challenges, many of which also present an opportunity.

The Innovation Report of December 2003 set out the Government's thinking on a more strategic approach to technology-based innovation to help UK firms benefit from an economic environment where technological change is endemic. The Report recommended the formation of business-led Technology Strategy Board (TSB) to ensure that the Technology Strategy reflected business needs and was informed by business processes.

As a result, the TSB was established in October 2004, and advises the Secretary of State for Trade & Industry on business research, technology and innovation priorities for the UK, the allocation of funding across these priorities and the most appropriate ways to support them.

To ensure that UK firms remain at the forefront of technology development and exploitation, it is necessary to identify promising new technologies emerging from the country's research community and to ensure that businesses are able to identify potential commercial applications.

In taking forward the development of a national Technology Strategy, the Technology Strategy Board are focusing on wealth creation and driving forward business investment in R&D. The Board have adopted two broad lines of approach:

- the development and exploitation of key emerging technologies;
- the development of 'innovation platforms', where the integration of a range of technologies and the better co-ordination of policy and procurement will result in a step change in UK performance.

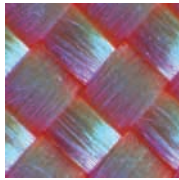
The Board believe that such innovation platforms can become a powerful mechanism for promoting innovation on the part of Government Departments and in the delivery of public services. Government Departments/Agencies, Research Councils, regional organisations, business and the science base must work together to identify and apply a diverse range of technologies (and other levers e.g. standards and regulation) to deliver innovative new products and services for which there are real customers in a potentially global market. This will give the procurement arm of Government Departments the confidence to adopt new technologies and more innovative approaches in delivering their policy objectives.

# Introduction to the Key Technology Areas

The Technology Strategy Board has identified seven Key Technology Areas where the UK has potential to generate significant added value in global markets.

In April 2006, we are discussing the development of six of these areas in more detail, summarised below. We will take forward more work in Emerging Energy Technologies following the Energy Review, which is expected to report in the summer.

## Advanced materials

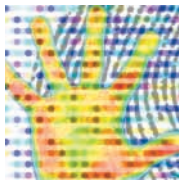


New strategies for materials innovation and application are increasingly important to

sustain advanced manufacturing in the UK and to foster the development of a whole new range of activity around novel, sustainable, high performance materials.

The UK has a strong track record in materials technologies, and future developments are likely to be especially important in support of energy production and distribution, and in support of materials for sensing and diagnostics.

## Bioscience and healthcare



Analysis has concentrated on four areas within the overall bioscience and healthcare

industry: medical devices; pharmaceuticals; biopharmaceuticals; and bioscience.

The potential for innovative technology in this vital UK industry is huge. Demographic change, together with societal concerns around the spread of disease, will present the healthcare industries with enormous challenges over the coming decade.

## Design, engineering and advanced manufacturing



Despite competition from emerging economies, the UK retains a strong capability

in the fields of aerospace, precision engineering, high value process manufacture and in the design of buildings and other structures. To remain globally competitive, the UK will need to continue to develop and adopt advanced manufacturing techniques.

Developing standards and metrology will help to broaden and speed up the adoption of new technologies.

## Electronics and photonics



With some 40% of Europe's independent electronic design

houses in the UK, this area of technology may reasonably be regarded as one of the UK's strengths and one with increasing potential. The need for sensors and sensor systems has become widespread as 'intelligence' is incorporated into virtually everything.

## Information communication and technology (ICT)



The ability to collect, transmit, store and analyse large amounts of data in a secure

environment has become a critical component of competitiveness, particularly in the service sector and in the delivery of high quality public services. UK strengths in high performance and grid computing offer opportunities for exploitation, with a key requirement being the formation of improved networks.

## Sustainable production and consumption



Four main areas have been identified where the UK has the capability to capitalise on

growing world markets in this area: energy efficiency, resource efficiency and the management of waste; technologies to promote a sustainable food chain; and technologies for the water industry. An integrated approach is needed.

We have prepared detailed discussion documents on the key technology areas and would welcome your comments. They can be found on the Technology Strategy website [www.dti.gov.uk/technologystrategy](http://www.dti.gov.uk/technologystrategy)

# The Technology Programme

**The Technology Programme was launched in 2004 bringing together two DTI products, collaborative R&D (CR&D) and Knowledge Transfer Networks (KTNs).**

As part of the government's Science and Innovation Investment Framework, the programme currently has a budget of £370 million funding over 3 years to give to businesses in the form of grants to support research and development in the seven Key Technology Areas identified as critical to the growth of the UK economy. It also ensures competitiveness in the growing global economy. Since the launch in 2004, six competitions for CR&D

projects have been launched and 20 Knowledge Transfer Networks established. The latest £80 million competition for CR&D will help fund new collaborative research in vital areas such as low carbon energy technologies and innovative manufacturing processes.

The programme is supported and funded by DTI and Defra, the Research Councils, Regional Development Agencies and Devolved Administrations. The next two pages will give you an update on progress of the competitions and some of the activities of the KTNs.

## CR&D Spring competition

**The Technology Programme Spring 2006 competition for CR&D projects will formally open for applications at the Barbican Hall on 26 April 2006.**

A series of partnering events and applicant briefings will be held in May in London and Manchester with the support of the Research Councils, Regional Development Agencies and Devolved Administrations. The events will be an opportunity for delegates to find out how the CR&D priorities, fit within the Technology Strategy and learn more about the priorities in the Spring 06 competition, including the competition requirements and the application process.

Following feedback and review of the collaborative R&D competitions to date, this competition will include additional application routes to the standard two-stage process, for Fast Track applications (optional for projects

of less than £250k support) and a Large Projects track for all projects seeking in excess of £8m.

For more information on the Spring 06 Competition visit [http://www.dti.gov.uk/technologyprogramme/Spring\\_06.html](http://www.dti.gov.uk/technologyprogramme/Spring_06.html)

### CR&D competition statistics

Date	Funding (m)	No of Projects
Spring 2006	80*	
Autumn 2005	63*	
April 2005	114.1	95
November 2004	93.3	173
April 2004	48.3	71
February 2004	15.7	25

\*Allocation only

Key Dates	Fast Track Process	Two-Stage Process
Competition opens	26th April 2006	26th April 2006
Compulsory Applicant Briefing meetings	7 & 8 June 2006	N/A
Deadline for registering your intention to submit an application	12th June 2006	12th June 2006
Application submission deadline	19th June 2006	Outline – 19th June 2006
Notification of outcome of assessment	7th August 2006	Outline – 17th July 2006
Compulsory Applicant Briefing meetings	N/A	15th & 31st August 2006
Application submission deadline		Full stage – 12th Sept 2006
Notification of outcome of assessment	N/A	Full stage – 7th Nov 2006
Successful applicants accept/decline offer	2 months from date of issue of Offer Letter	2 months from date of issue of Offer Letter
Project start	Within 3 months of acceptance of Offer date	Within 6 months of acceptance of Offer date

Projects seeking more than £8 million will follow a separate application and assessment process designed specifically for large projects. Applicants must register their intention to submit an application for a project of this size as soon as possible and **by 24th May 2006 at the latest. They will then be contacted by the programme to discuss the details of the application and assessment process.**

# CR&D case studies

## Furnishing the benefits of workplace noise reduction

**By researching the use of acoustically advanced composite technology in the design and manufacture of office furniture, a consortium led by the Furniture Industry Research Association (FIRA) hopes to reduce noise in the working environment.**

### Benefits:

The project's ability to deliver health benefits for employees through improved working conditions is considered to be a key benefit of developing new applications for acoustically advanced materials. The project will also deliver economic benefits through the heightened productivity of a happier, less

stressed workforce and will also create new employment opportunities through the commercial exploitation of techniques developed during the study that may lead to the production of new product lines.

### Results:

"We now have a far better understanding of the comparative acoustic performance of modified and unmodified furniture," says Sue Calver from FIRA. "We've also developed insights into the most productive construction and assembly techniques and into the best combinations of pieces of furniture for the most effective performance."

The greatest advances in the project were made in developing sound-absorbent screens for separating workstations; the team at FIRA is satisfied that there are clear commercial opportunities arising from the study, although more research and development work is needed before all its findings can be put into practice. Key among these is the viability of producing an integrated range of office furniture and screens that promotes better health in the workplace through reduced ambient noise, delivering the potential for new employment at FIRA's manufacturing partners.

## Therapeutic products from human stem cells

**Leading stem cell technology company ReNeuron has bought together expert academic and industrial partners in a groundbreaking project that could one day lead to a viable therapeutic stem cell treatments for serious diseases. Launched at the beginning of 2005, this three-year project has a total cost of £4.4m. It has received £2.2m in funding under the Technology Programme.**

### Benefits:

This project aims to develop treatments for patients with diseases such as Parkinson's and stroke, which will in turn dramatically reduce the demand for cost of long-term nursing care. The creation of generic processes will make future cell-based medicines easier to develop and more affordable across the industry.

### Results:

"In terms of technology, this project will prove what can be done," explains ReNeuron's head of cell

biology Dr Kenny Pollock. "If it is successful and becomes commercially viable, it would be of real benefit to patients and take our company and our partner's organisations to another level." He says.

Less than 12 months into the three-year programme, ReNeuron has proof of concept. They have demonstrated that their research works with animal models and they have had success in manufacturing cell banks. The company expects to file for approval to commence their first clinical trials in stroke later this year.

# Knowledge Transfer Networks

Knowledge Transfer Networks (KTNs) provide the innovation market place critical to the continued growth of the knowledge-based economy in the UK. The networks address a wide spectrum of commercial and scientific sectors, creating the vehicle for collaboration, exchange and application of new technology. More than 20 knowledge transfer networks have been created to cover sectors as diverse as food processing and industrial mathematics to resource efficiency and sensors. The aim is the creation of outward looking, market driven forums, with a focus on application.

A KTN is principally a communication channel between research and industrial and commercial need. New technology is frequently not 'business ready', giving networks an important role in validating the business case. Knowledge transfer involves many players. The networks advise, support and inform the process for the successful introduction of technology. Funding for development can come from grants, loans and investment sources. Access to advice and support on funding mechanisms and sources is delivered through the networks. The development of many sectors is significantly influenced by Government action; as the networks have the 'ear of Government' they can inform policy and regulation in key sectors. The networks also support training activity and develop technology roadmaps to guide research and commercial actions.

The KTN focus on application has already delivered a fascinating array of successes. To give a taste, we'll sample how KTNs are driving investment, delivering value, increasing efficiency and supporting the application of new technology. The Industrial Mathematics KTN has brokered

introductions for Lein Applied Diagnostics to a key mathematics group, not only solving a critical product development problem, but also opening the route to £1 million in investment. Wavecrest, a movie industry consultancy and member of the Grid Computing KTN used grid knowledge to address the problem of lost data files in film animation. Wavecrest was able to solve the 'lost data' problem for the film 'Valiant', producing a higher quality animation at lower cost, out-competing US rivals. Transco has benefited from membership of the Location and Timing KTN by applying satellite navigation to its fleet of 5,500 vehicles, reducing fuel expenditure by 20%. The Sensors KTN has been instrumental in validating new plastic bridge technology, trialed in Oxfordshire, by providing critical sensors capable of demonstrating the structural integrity of the bridge in use.

The process of establishing KTNs continues. The Health Technologies KTN draws together the UK's significant strengths in biomedical research and the market demand for ever more sophisticated diagnostic, monitoring, therapy, rehabilitation and prevention devices based on new imaging, micro, nano and electronic technologies.

The New Materials KTN supports advances in materials technology and the rapid growth in demand for materials in sectors such as: aerospace, automotive, power generation, healthcare, security, construction, electronics, packaging and the consumer sector. Additional demand for new materials exists to address sustainability, low cost, environmental impact and performance issues.



The Bioscience for Business KTN has set ambitious goals, to develop integrated biotechnologies as an antidote to the global dependence on fossil fuels. The aim is to support technology and industry based on micro-organisms, biochemistry, biocatalysis and fermentation for chemical production, to use genes and materials from plants, agricultural crops and forestry and genes, processes and materials from freshwater and marine organisms. Company growth rates in the bioscience sector in the UK are more than 20% annually while the UK boasts 93% of Europe's publicly owned bioscience businesses; and as the sector currently employs 40,000 people, the ambition is not just to fix a problem but to exploit a real national strength.

'Bioscience for Business brings together a unique combination of bioscientists and industrialists to generate a new sustainable future for wealth creation in the UK'

Professor Dianna Bowles, Bioscience for Business KTN Chair

# Focus on Innovation Platforms

**Innovation Platforms were introduced in the Technology Strategy Board's first Annual Report in November 2005. They are designed to address a challenge, bring together Government stakeholders and funders, and engage with business and the research community to identify appropriate action.**

## Intelligent Transport Systems & Services

Recent meetings have established the role of the ITS platform. The Secretary of State for Transport launched the Transport Innovation fund in July 2005 to support the development of transport schemes that feature demand management. Funding of £290m will be available in 2008/9, increasing to £2.5bn by 2014/15.

The community of business interest, or Knowledge Transfer Network, is already up and running, with strong business engagement. DTI has committed £6.5m over the next five years to support the innovITS business-led network which is now identifying the business challenges.

## Network Security

The Steering Group for this platform has been set up, including representatives from the TSB, Home Office, Cabinet Office, MoD, DTI and the Cyber Security KTN. A summary of challenges is currently being drawn together as the basis for an action plan.

The Cyber Security Knowledge Transfer Network which leads the Platform's community of business interest is up and running, with 350 businesses engaged. The first meeting of its steering group was on 31 March, with Robert Ghanea-Hercock of BT elected as Chair. Business challenges were identified and several working groups established to identify how to take these forward from the business perspective.

## Events

Details of all Technology Strategy events can be found on [www.dti.gov.uk/technologyprogramme](http://www.dti.gov.uk/technologyprogramme)

**4 May** Technology Programme CR&D Partnering Event, Guoman Towers, London

**8-10 May** Location and Timing KTN Launch, Manchester International Convention Centre

**9 May** Cyber Security and Biometrics KTN Launch, London Stock Exchange

**10 May** Technology Programme CR&D Partnering Event, Midland Hotel, Manchester

**18 and 19 May** CR&D Applicant Briefings, Central Hall, Westminster, London

**2 November** Innovate 2006

## Keeping in touch

To find out more about the Technology Strategy and take part in developing Key Technology Strategies, go to: [www.dti.gov.uk/technologystrategy](http://www.dti.gov.uk/technologystrategy)

To keep up to date with the Technology Programme, go to: [www.dti.gov.uk/technologyprogramme](http://www.dti.gov.uk/technologyprogramme) or email [technologyprogramme@dti.gov.uk](mailto:technologyprogramme@dti.gov.uk)

To find out more about the KTN community, go to: <http://ktn.globalwatchonline.com>

To find out more about the CR&D Programme go to: [www.dti.gov.uk/crd/](http://www.dti.gov.uk/crd/)

For any feedback relating to this newsletter or if you would like to join the mailing list for future issues, please email us on: [technologystrategyboard@dti.gsi.gov.uk](mailto:technologystrategyboard@dti.gsi.gov.uk)

All contact details are held in accordance with the Data Protection Act 1998.