



Innovation Strategy Consultation

DIUS: February 2008

How do you think that Innovation can help us tackle these major challenges?

Science and innovation are extremely important in tackling the major challenges identified. Many of the new inventions, products and processes needed to tackle health, climate change and security issues will come from novel research and engineering design. Keeping an open mind is necessary as this will allow for people to develop a range of solutions.

What is the government's role in meeting these challenges?

Government has an extremely important role in funding the science and engineering base. The public sector should concentrate on fundamental and strategic research, up to the point at which an idea has proved a feasible possibility for commercial development. The Government needs to be extremely careful in pushing for the "economic impact" of research funded by Research Councils. The Government should take a longer-term view in funding research because this is where we will find innovative solutions to a range of challenges the UK faces today and in the future.

The Government also has an extremely important role in the funding of training of scientists and engineers. A highly skilled workforce is critical to developing innovation solutions to emerging global challenges. Improving science education in schools is also critical.

Government departments need to fund research to meet their policy and delivery needs, which include finding solutions to a range of challenges.

How can government focus on building innovative capacity and on creating the right conditions for companies to innovate?

Government can do a number of things to enable innovation in private sector in the UK. Government needs to provide funding to train the scientists and engineers necessary for the long-term benefit of companies. It needs to invest basic research necessary for the UK to be at the cutting edge of scientific discovery, which will be one reason for attracting or maintaining science-based companies in the UK. A review of how the UK can attract more foreign direct investment in R&D would be useful.

How can we maximise the scope for interaction between different innovative activities, concepts and people?

Geography is one factor for maximising interaction. Some research parks in the UK have been very effective in maximising interaction between innovative activities and people. The Government should support RDAs in improving their capacity to build upon and stimulate growth in regional collaborations. Building virtual networks might also be extremely useful in linking innovative people.

How can Government help public sector employees, managers and leaders create a more innovative culture?

The Government needs to do a better job of recruiting and utilising people trained in scientific and engineering disciplines. Some departments and agencies lack support structures for specialist who could help create an innovative culture. Evaluation of publicly funded schemes/policies would not just be helpful in measuring success, but also in identifying innovative new ways of delivering programmes or developing policy.

What else should Government do to promote more innovation in service delivery or in policy development?

Government needs ensure that departments and agencies have appropriate science budgets, specialists and plans to utilise science and support innovation. Government departments need to increase their investment in R&D, which according to the Sainsbury Review has declined as a percentage of GDP. CaSE agrees with the Sainsbury when he says "This is of concern for the quality of our public policy-making, and the stimulation of innovation in the companies with which government departments interact."

CaSE supports Sainsbury's recommendation that Innovation should be embedded in Departmental Strategic Objectives and the Director of Innovation at DIUS should produce an annual Innovation Report on the innovation activities of the DIUS, including the TSB, other government departments and the RDAs.

Departmental Chief Scientific Advisers are critical players in this area. CaSE is concerned that some departments still don't have CSAs, including the FCO and DCMS.

What role do universities and institutes have in delivering more innovative public services and policies?

Universities and institutes, if they are well funded and given the right incentives, can be an important resource for public sector. However, this requires the public sector to value and have funds to pay for research and mechanisms to utilise expertise.

How do you think Government's innovation policies should develop in the context of the recent Sub-National Review of Economic Development and Regeneration?

Regional Development Agencies could enable innovation through supporting research parks and other collaborations between local businesses and universities.

Specifically for innovation, what types of skills should Government be encouraging and what levers or incentives can Government apply to achieve this?

The Government needs to focus on improving science and mathematics education in schools. The UK needs more school graduates and university graduates in the STEM subject to fuel knowledge-intensive industries, including financial services and ICT. To get more school graduates in STEM subjects we need to improve the provision of science and mathematics in comprehensive schools, including training and attracting more specialist trained teachers. At the graduate level further support for STEM students could have training to complement their technical knowledge with the skills needed to bring innovation to the marketplace.

How can the Research Base help innovation in the wider economy (eg. interaction from Universities; engaging with SMEs and the service sectors)?

The Research Base is an important part of innovation in the UK. However, government policies should be enabling rather than directing innovation within Universities. There is real concern amongst many sectors of the science and engineering community that Research Councils are putting too much emphasis on 'economic impact'. Research councils should focus their support on basic research that is cutting edge. The Research Base should also be well supported across the range of disciplines, because many innovations are happening at the intersections.

University knowledge transfer programmes should be enabling, so that when a discovery is made that has an innovative application it can be capitalised on. Many university spin-offs are SMEs which have the potential for high-growth. STEM graduates are highly skilled individuals who are valued by the financial service sector.

Is the Research Base working innovatively itself? Is it sufficiently agile and responsive to new challenges (eg incentive mechanisms; inter-disciplinary research; university culture)?

Many of the new challenges have either been identified (e.g. climate change) or originated (e.g. World Wide Web) from within research institutes. The UK's Research Base needs to stay internationally competitive so that it continues to collaborate with other countries.

There should be a review of the effects of various measures (e.g. RAE/REF) to increase "accountability" within the Research Base. Do these measures actually stifle innovation by not giving researchers enough room to do "blue skies" research?

It is critical that Universities are well funded so that they can take on research for industry and charities that do not pay FEC.

What role do universities and institutes have in delivering more innovative public services and policies?

University researchers can find it difficult to stay abreast of policy developments and compete for research funding from government departments. Departments could do more to open up their policy and service provision to outside input.

Scientific Advisory Committees could be used more creatively by allowing them to think creatively about the implications of various policy options, which may open new policy choices or delivery choices.

The Government needs to invest in its labs and works with research councils to maintain a healthy range of institutes. Public sector laboratories and institutes could be better utilised by departments if they were given greater funding and latitude to innovate.

How would you characterise the innovation process in a global context and the role of Government, if any, in stimulating it?

Science and innovation are global processes. The UK must remain a partner in various international scientific collaborations. Again, the UK must continue to fund basic research so that the UK remains one of the best places in the world for science.

It also needs to attract and retain multinational companies that have global research and development networks.

Does the UK demonstrate major shortcomings in its ability to exploit European and global innovation networks? If so, what should be done?

Exploiting innovation from other countries requires a highly skilled workforce across the range of disciplines. The UK government should not try to "pick winners" but maintain a strong research base.

How should the UK prioritise its international innovation efforts in terms of geographic markets? Are there particular technologies where we should focus our efforts with these countries?

It should be a Government priority to maintain and strengthen the FCO's Science and Innovation Network. The S&I Network should be instrumental in monitoring scientific and technological developments in different geographic markets.

Again, the Government should not try to focus on particular technologies, but rather be attentive to a range of technological developments that could have major economic or social advantages.