
analysis

Back to basics for technology leadership

The UK's flagship for growth through innovation, the Technology Strategy Board, needs to be much more than a "research council for industry", says **David Hughes**, the board's architect. Disappointed with the Sainsbury Review, released last week, Hughes now looks to the second Comprehensive Spending Review and the arrival of a new leader at TSB's helm, both imminent, in calling for a return to first principles.

It all started in 2003 during the development of the Innovation Review for what was then the Department of Trade and Industry—the idea of a Technology Strategy Board, that is. The review, published in December of that year and for which I was the lead official under the then Science Minister David Sainsbury, stressed the importance to the UK of a balanced and long term approach towards technology strategy—balanced in terms of the sectors and themes to be covered as well as the mix of policies. By October 2004, following a high-level recruitment campaign, the board was up and running and beginning to debate the major themes around which a cohesive technology strategy might be forged.

What's most surprising about the much anticipated Sainsbury Review, which devotes a chapter to the TSB, is its lack of focus on the board's prime objective.

In the original concept, the themes were to reflect significant social or policy challenges in areas in which the UK's strengths would encourage business to accelerate economic growth—themes that would address issues such as healthcare in an ageing society or environmentally friendly transport. The idea was to agree the key themes, allocate funding to each and then work with industry to develop roadmaps with a purpose and technology drivers over a 5 to 10-year time frame.

Such help would enable business to exploit the UK's capabilities more efficiently to build new products and services. To this end, the Knowledge Transfer Networks were overhauled and re-structured to provide a knowledgeable forum from which industry could identify strategic gaps, and the TSB could agree and fund projects to close those gaps over a three-year period.

At the same time, the DTI Innovation Group arranged cross-departmental workshops on the emerging themes and to identify common areas of technology needs. By mid-2005, a Cabinet committee had been set up to voice cross-departmental innovation initiatives (including the use of public procurement) at the heart of government.

The 2004 Spending Review allocated a modest budget to the new TSB. The board wanted to engage with busi-

ness quickly and used the initial themes developed from the Innovation Report to call for proposals in November 2004 at a level of about £100 million. The idea was to develop the strategic themes and have regular calls for proposals around these themes. Allowing time for projects to be submitted, approved and started meant that expenditure would be low in the first year and then ramp up in the final year to nearly £200m, but remain within the overall three-year budget. The TSB would then make a case in the 2006 SR for an increased budget that, if based on the same rising trajectory, would result in an annual expenditure by 2010 of some £500m.

ALL OF THESE actions were designed to make the TSB a powerful instrument of technology policy, providing clear strategic direction and a degree of predictability for government support to business. So what happened? Unfortunately, the TSB retrenched to a process of six-monthly competitions for funding R&D projects without an obvious strategic theme to frame the priority areas for technology or clarity over the future funding level.

And now the Sainsbury Review potentially dilutes the TSB effort further with several new (and somewhat bureaucratic) small proposals that will not enable UK businesses to reach critical mass in the activities that add value to the economy.

When the TSB was set up, its focus was determined by experienced civil servants who had close contact

David Hughes is managing director of the Business Innovation Group, which supports CEOs in developing growth strategies through innovation. He is also visiting professor of engineering management at City University, London. In 2002, he left the engineering industry to join the late Department of Trade and Industry; he was the first director general of the DTI's Innovation Group and its chief scientific adviser until 2006. He was responsible for producing the DTI Innovation Report, published in December 2003, which led to the foundation of the Technology Strategy Board.

with industry and who understood the changes taking place in the global economy. Positive feedback came from business and universities, and many other governments, including those of France and the US, were keen to talk about these ideas in developing their own innovation strategies. There can be little doubt that the initial projects that the board supported have taken UK capability forward in key areas of technology.

Towards the end of 2005, however, two things occurred that have effectively slowed the momentum and undermined the rationale behind the TSB. First, the government replaced the 2006 SR with its second Comprehensive Spending Review, but the CSR was not due until a year later—it was announced yesterday. As a result, the board's call for proposals in November 2006 offered a much reduced level of funding compared with previous calls. The critical point about the budget is that limited funds force the TSB to stay in the area of small scale, early stage, applied research, which is far from the market and close to basic research.

In contrast, the CBI has been calling for an increase in TSB funding to £600m per annum. Surprisingly, the board's departing interim chief executive is quoted as saying that he would not know how to spend this sort of money effectively, not in the short term anyway [*RF* 12/9/07, p6]. Such an attitude appears to overlook the importance and high cost of 'demonstration' in turning technology into innovative products and services. Of course, suppliers and business users should contribute to that, but a strategy devoid of scaleable demonstrators will not move the broad base of industry at a pace to keep the UK competitive in a globalised economy.

Second, changes at the top of the DTI resulted in changed priorities for innovation. The Cabinet committee disappeared, quietly, and innovation policy was integrated into the Office of Science and Technology (OST). This, in turn, led directly to the proposal to turn the TSB into a so-called 'arms length body', an executive non-departmental public body, which would act like a research council in distributing grants.

Finally, in the most recent government reshuffle, innovation policy (now with Department for Innovation, Universities and Skills) has been separated from business and enterprise policy. Moving the TSB from the business policy nexus into OST, and then relocating to Swindon with the research councils, has not only cut the link with business policy, but also with the complementary levers of policies to promote innovation—regulations, standards, metrology, public procurement and skills.

At least the Sainsbury Review reinforces what we have known for several years, that most of the UK's 'value added' does not come from its R&D intensive sectors, and it does recognise the importance of 'technology users' in the service sectors. But while the review notes that the linear model for economic growth is wrong, the

whole tenor of the review seems to be based on just such a model. The claim that "the majority of radical innovations spring from basic research" is not supported by evidence. Indeed, this claim flies in the face of what Alec Broers, chair of the House of Lords Science and Technology Committee, had to say at the Foundation for Science and Technology in July: "The vast majority of new technologies are created by bringing together and developing capabilities that have been developed all over the world...They depended upon scientific discoveries but none...emerged directly from basic science."

What needs to happen now? A new chief executive, Iain Gray of Airbus UK, takes up his appointment at the beginning of November. He has a tough task to recover from the lost momentum. Here are some suggestions.

First, the TSB must move beyond simply being a research council for industry and get commitment from the Prime Minister's Office and the Treasury that the TSB will be used as the prime catalyst for ensuring world beating policy on technology and innovation.

Second, as a matter of urgency, the TSB should identify six major themes that will be its focus for developing the technology strategy for the next few years and galvanise relevant industry/university engagement behind these themes in real 'open innovation' networks.

Third, the Cabinet Committee on Technology and Innovation should be re-instated with the TSB's CEO reporting regularly and given the opportunity to point out the barriers to progress (not least from government departments around the table).

And fourth, annual funding of the TSB should be increased to at least £600m in 2010. With whatever budget it has, the TSB needs to look for leverage through partnership with others, and focus on those half a dozen strategic themes.

To conclude. The TSB should forget this November's call unless it has a clear strategy and can identify gaps in technology capability that need supporting now. It should show that it is different by providing business and research with the long-term vision and commitment they crave. It should break from the shackles of the six-monthly call and give its programme managers the flexibility to develop the holistic programmes (as envisaged in the 2003 Innovation Review) in collaboration with a rationalised KTN structure, against clear performance targets over the next three years.

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