

view from the top david hughes

Hauser, Dyson and technology

Two recent reports recommend the government acts to establish technology centres for exploiting UK scientific research. The Hauser report focuses simply on technology innovation centres (TICs); but in Dyson's report they are one facet of a more wide-ranging consideration.

How will these recommendations help UK companies innovate and bring new products to market?

As Alec Broers put it in his 2005 Reith lectures, modern products such as the mobile phone or hybrid car were created by developing and combining existing capabilities, not from basic science: "The genius lies in the way they are brought together." In other words, companies do not necessarily need scientific breakthroughs to create wealth through new products and services.

While Hauser adopts the old 'technology push' model of exploitation, Dyson recognises the importance of 'technology pull'. Yet both the Hauser and Dyson reports base their analysis on the narrow government 'Frascati' definition of R&D: creative work to increase the stock of knowledge. They fail to recognise the work of people such as Marrano and Haskel, which suggests that there is an equal amount of 'non-scientific' (development) R&D done in business which is left out of the formal Business Enterprise R&D (BERD) statistics.

Both reports see R&D as risky. I fundamentally disagree—new thinking shows that product development is a process like any other; it can be controlled and its risks contained. There are two risk-reduction essentials: ensure a good understanding of customer needs and how existing offerings fail to meet them; use programme management to control implementation costs and times.

You need to understand customer needs by understanding the 'job' the customer is trying to do, then pull through technology to enable new ways of getting that job done.

Appropriate technologies may come from many sources: other companies; intermediate research technology organisations; internet searches; or existing technology in other applications. Most important of all, more

than 90 per cent of fundamental technology sources (research) exist outside the UK. So the idea of a handful of technology centres based on developing UK research, with very little funding, seems to me fundamentally flawed.

Any intermediate role should be as an enabler to help UK companies connect with these technology sources. Dyson touches on this when he suggests freeing up resources from University Technology Transfer Offices to create "a portal that aggre-

gates information on university research across the UK to make it easier for businesses to locate relevant research partners." Good idea but why limit it to UK sources?

Neither report appears to have compared the proposals for technology centres with existing UK R&D expenditures. Hauser does not identify how many such centres should be developed but a recent Foundation for Science and Technology debate suggested no more than 10. Dyson suggests setting up five university/industry research centres. These are not costed, but in today's 'fiscal climate' we presume they would cost no more than Hauser's £5 million to £10m per centre per year.

Ask yourself what impact this can really have against UK businesses' £13-billion-plus spending on Business Enterprise R&D and government's £6bn-plus on research.

What surprises me is that both reports acknowledge existing university/business technology collaboration but prefer inventing something new to building on what we have. Hauser says TICs' remit would include "the development and scaling up of manufacturing processes"—isn't he aware of examples like the new Manufacturing Technology Centre in the Midlands? Dyson cites the GSK biotechnology science park, Rolls-Royce's university technology centre at Cambridge, Design London, and the Diamond Light Source at Daresbury. I could add the Energy Technology Institute, the EPSRC's Innovative Manufacturing Research Centres and Integrated Knowledge Centres, such long-established research technology organisations as the National Physical Laboratory and the Building Research Establishment, plus, of course, the Technology Strategy Board which I established in 2004.

One thing I learnt from working with Lord Sainsbury for four years at the Department of Trade and Industry was that it is far more effective to build on things that work rather than scrapping and starting anew every time. I wish these reports had reflected more on how existing initiatives could be improved and extended.

In my view, the setting up of new technology centres should be industry led not university or government led. If there is a need, let industry formulate the proposals and identify its academic partners. If government funding is needed, let industry make the case for short term 'pump priming' support.

I would rather put the money into universities for education and research.

More to say? Email comment@ResearchResearch.com

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