

## UK RESEARCHERS TAKE UP GRAND CHALLENGE

Every year, the UK spends £21 billion<sup>i</sup> on creating new knowledge – via the science system in universities, research institutes, and companies. This forms part of an estimated £600 billion which is spent by OECD countries around the world, involving some 3 million researchers<sup>ii</sup>. Not surprisingly, every country asks the same question – what are we getting out of this investment? And is it enough?

Evidence suggests that the UK is good at producing scientific knowledge. It is ranked second only to the US for academic citations, for example, with an impressive 11.9% world share. The UK also ranks fifth in the world for PhDs produced per unit HERD (Higher Education R&D Spend) -- the US is ranked twelfth.

But do we *apply* the knowledge as effectively as we create it?

### **The Grand Challenge: Invention to innovation**

The great challenge of *innovation* is not simply to create knowledge but to use it in ways that have a positive economic and social impact. Understanding and improving how UK firms do that is the goal of the Innovation and Productivity Grand Challenge -- one of four initiatives funded by the UK research council, the EPSRC.

Here the news is mixed. Anecdotal evidence suggests that the UK is good at invention, but poor at innovation. Famous examples include the body scanner developed by EMI, and pioneering work on the world's first computer at the British war time code breaking centre Bletchley Park – both of which drew on the UK's science base but were commercialized elsewhere. But this negative view ignores innovation success stories in areas like pharmaceuticals and aerospace.

The fact is that the UK's innovation from knowledge (IfK) system does work. The question is: can it work better? And can it do so at a time when the innovation model is changing?

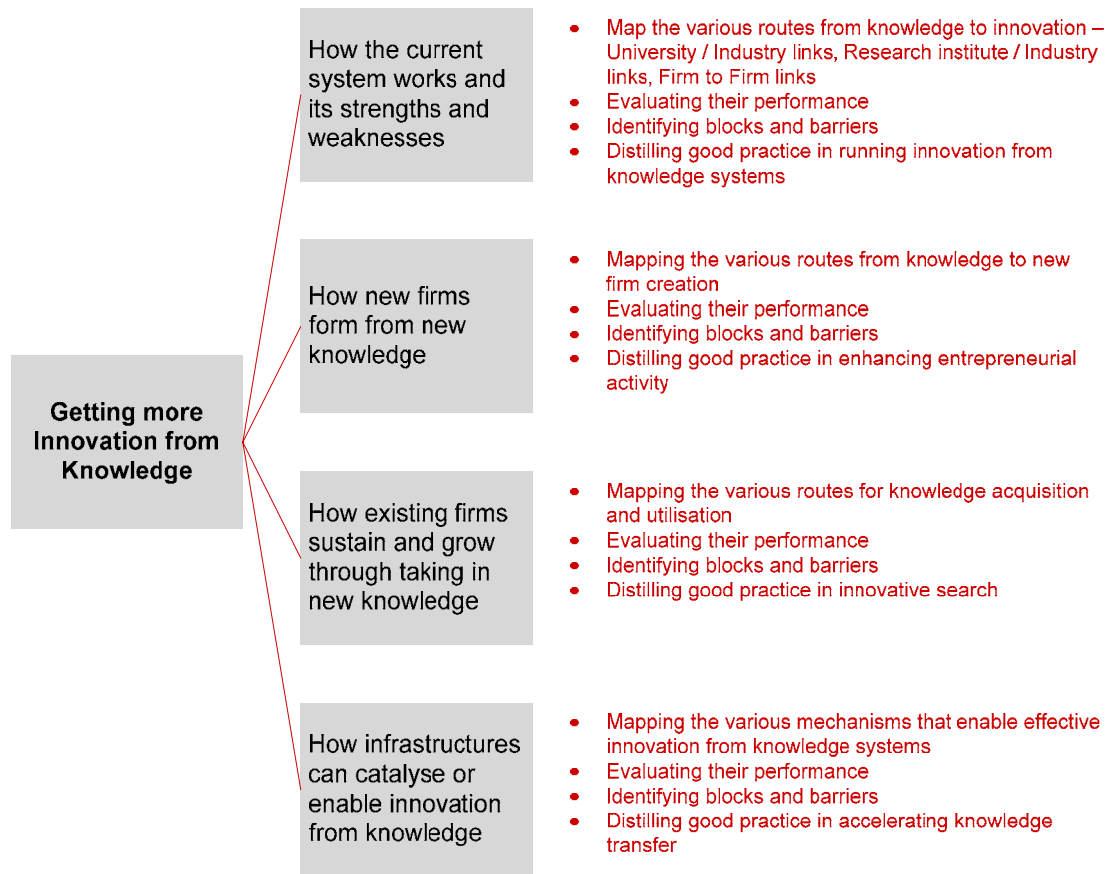
### **Open innovation**

Today, knowledge is created on a truly international stage. Even major R&D players such as Procter & Gamble now talk of sourcing half or more of their innovations from outside the company. These changes will have a profound impact on IfK systems. Innovation is increasingly about managing *flows* of knowledge across complex – and often global -- networks.

This raises important questions for the future. How does an effective IfK system work in this new environment? Who plays the knowledge networking game well -- and what can we learn from them to deploy a best practice model across our systems? Do we need to create new ways of helping the flow of knowledge – through better linkages, bridges and brokers?

These are just some the questions the Grand Challenge researchers are seeking to answer. They are big questions, requiring big responses. The team is approaching them with its own unique knowledge system: a network of five major universities -- Cambridge, Liverpool Loughborough, Cranfield and Imperial College -- and the Advanced Institute of Management Research (AIM), which has links to other UK and international researchers.

The challenge is to make UK plc more competitive by converting more knowledge into innovation.



**For more information contact:**

John Bessant, Professor of Innovation and Technology Management at Imperial College, London, and AIM Senior Fellow, [j.bessant@imperial.ac.uk](mailto:j.bessant@imperial.ac.uk) tel: 0207 594 1788

For General AIM Enquiries, please Contact: Claire Fitzpatrick, Communications Officer, AIM, email: [cfitzpatrick@london.edu](mailto:cfitzpatrick@london.edu) or tel: 020 7000 0517

## Notes for Editors

AIM Research is funded by the Economic and Social Research Council (ESRC) and the Engineering and Physical Sciences Research Council (EPSRC) and was launched in November 2002. AIM's mission is to improve understanding of management's contribution to organisational performance, and UK well-being. For more information on AIM visit [www.aimresearch.org](http://www.aimresearch.org)

The Engineering and Physical Sciences Research Council (EPSRC) is the UK's main agency for funding research in engineering and the physical sciences. The EPSRC invests more than £500 million a year in research and postgraduate training, to help the nation handle the next generation of technological change. Website address for more information on EPSRC: [www.epsrc.ac.uk/](http://www.epsrc.ac.uk/)

The Economic and Social Research Council (ESRC) is the UK's largest funding agency for research and postgraduate training relating to social and economic issues. It provides independent, high-quality, relevant research to business, the public sector and Government. The ESRC invests more than £76 million every year in social science and at any time is supporting some 2,000 researchers in academic institutions and research policy institutes. More at <http://www.esrc.ac.uk>

## Grand Challenge

The EPSRC's Innovation Manufacturing programme (IMP) promotes and supports high quality research and masters level postgraduate training in manufacturing engineering, to help improve the performance of the UK manufacturing sector and increase its contribution to wealth creation.

The IMP is funding four 'Grand Challenge' consortia to tackle major issues in manufacturing, building on the work of the 17 Innovative Manufacturing Research Centres (IMRCs). Total funding for the consortia comes to £14 million. AIM is involved in two of the consortia: The Immortal Information and Knowledge, and The Innovation and Productivity both of which also receive support from the ESRC.

---

<sup>i</sup> Figs from Office of National Statistics

<sup>ii</sup> Fig from National Science Foundation