Catapult centres

Simon Edmonds

Director of Catapult Programme
Innovate UK

Policy - what was the need?

• Globally strong academic base and well funded research activity in the UK resulting in the UK with the best academic research capability after the United States
• Huge inventive capability exists at UK universities and leading charitable sectors eg Cancer Research, Wellcome Trust ...
• Leading global businesses across multiple sectors reside in the UK
• The weakness was perceived as technology transfer from one place to the other, some great examples but on balance the position has been weak
• Prior governments over decades removed support from the intermediate sector, often through privatisation which resulted in a major gap
To quantify the problem

The UK exhibits:

- world-class strengths in many aspects of the system, such as research excellence, higher education institutions and the business environment;
- concerning weaknesses in the talent base, especially in terms of basic skills, science, technology, engineering and maths (STEM) skills and management skills; and
- a sustained, long-term pattern of under-investment in public and private research and development (R&D) and publicly funded innovation.

*Insights from international benchmarking of the UK science and innovation system; BIS Analysis Paper Number 03; Tera Allas January 2014*

Our Competitor Nations

- The UK’s total investment in R&D has been relatively static at around 1.8% of GDP since the early 1990s and was around £27bn in 2011.
- US alone spends around £250bn (2.8% of GDP) on R&D per annum.
- China increased its R&D by 28% in 2009 and 15% in 2010, to roughly £125bn (1.8% of GDP)
- South Korea doubled its expenditure between 2003 and 2011 to around £35bn (4.0% of GDP).
- France and Germany have consistently invested substantially more than 2% of their GDP in R&D, with aspirations to increase this to 3% or more.
- Public sector support for innovation is harder to compare, but such data as exist suggest that UK funding is very low.

*Insights from international benchmarking of the UK science and innovation system; BIS Analysis Paper Number 03; Tera Allas January 2014*
Policy - what was the answer?

- Hermann Hauser invited by Peter Mandelson to answer whether the UK needed intermediate technology & innovation centres
- His review which looked at competitor nations and a broad consultation resulted in his report in 2010 "The current and future role of Technology and Innovation Centres in the UK"
- His conclusion was that the UK was indeed missing a key piece of infrastructure to enhance economic growth and he set out the conditions for Centres
- The Conservative Party in opposition also consulted Sir James Dyson who endorsed the approach
- In September 2010 the Prime Minister announced funding for technology and innovation centres
- This was a bold move considering the economic conditions at the time

Catapults

A new force for innovation & growth

- Part of a world-leading network of technology and innovation centres
- Bridge the gap between businesses, academia, research and government
- Long-term investment to transform the UK’s ability to create new products and services
- Open up global opportunities for the UK and generate sustained economic growth for the future
- Being established and overseen by the Innovate UK

2013
All Catapults up and running

£1.4bn
Private & public sector investment

7
Catapults

14/11/2014
Catapults – Spending Review & Budget

• Spending Review 2013 we made the case for 2 new Catapults plus expansion to the existing High Value Manufacturing Catapult
• Two areas identified:
  • Energy Systems
  • Precision Medicine
• Budget 2014
  • £55m investment in Cell Therapy manufacturing
  • £19m investment in Graphene Applications centre in CPI and University of Manchester
• New facilities have been opened or commissioned:
  • Second building at National Composites centre
  • National Biologics Manufacturing centre at CPI
  • Training centre at MTC in Ansty
  • Aerospace Centre & MTC Ansty

What is a Catapult centre?

• Established following a review by Hermann Hauser 2010
• Business-focused technology and innovation centre that makes world-leading technical capability available to businesses to solve their technical challenges
• Provides:
  • Access to world-leading technology & expertise
  • Reach into the knowledge base for world-class science
  • Capability to undertake collaborative R&D projects with business
  • Capability to undertake contract research for business
  • Create a critical mass of activity
  • Skills development at all levels
Technology Readiness Levels

Catapult timeline

<table>
<thead>
<tr>
<th>Current Catapults</th>
<th>Date operational</th>
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<tbody>
<tr>
<td>High Value Manufacturing</td>
<td>October 2011</td>
</tr>
<tr>
<td>Cell Therapy</td>
<td>October 2012</td>
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<tr>
<td>Satellite Applications</td>
<td>December 2012</td>
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<tr>
<td>Offshore Renewable Energy</td>
<td>March 2013</td>
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<tr>
<td>Connected Digital Economy</td>
<td>June 2013</td>
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<tr>
<td>Future Cities</td>
<td>June 2013</td>
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<tr>
<td>Transport Systems</td>
<td>August 2013</td>
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<table>
<thead>
<tr>
<th>2 New Catapults</th>
<th>Target Date operational</th>
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</thead>
<tbody>
<tr>
<td>Energy Systems</td>
<td>April 2015 target</td>
</tr>
<tr>
<td>Precision Medicine</td>
<td>April 2015 target</td>
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</table>
Catapult Locations

Catapult People

<table>
<thead>
<tr>
<th>Catapult</th>
<th>CEO</th>
<th>Chair</th>
<th>Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Value Manufacturing</td>
<td>Dick Elsy</td>
<td>Bob Gilbert</td>
<td>✓</td>
</tr>
<tr>
<td>Cell Therapy</td>
<td>Keith Thompson</td>
<td>John Brown</td>
<td>✓</td>
</tr>
<tr>
<td>Satellite Applications</td>
<td>Stuart Martin</td>
<td>Tim Sherwood</td>
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<tr>
<td>Offshore Renewable Energy</td>
<td>Andrew Jamieson</td>
<td>Colin Hood</td>
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</tr>
<tr>
<td>Connected Digital Economy</td>
<td>Neil Crockett</td>
<td>Andy Green</td>
<td>✓</td>
</tr>
<tr>
<td>Transport Systems</td>
<td>Steve Yianni</td>
<td>Will Whitehorn</td>
<td>✓</td>
</tr>
<tr>
<td>Future Cities</td>
<td>Peter Madden</td>
<td>Sir David King</td>
<td>✓</td>
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</tbody>
</table>
Hermann Hauser review of Future Catapult Strategy

- Is the policy as set out in 2010 working – review where the network has got to in the last three years

- What should the future direction and scope and scale for the network be, Vince Cable Harwell speech on Catapults

- Review will consider Including consideration of:
  - Organic growth
  - Distinct Catapult models – challenge (e.g. Future Cities), technology (e.g. Offshore Wind), network (e.g. High Value Manufacturing)
  - Is there a role for adding other (Catapult-like) centres to the network, can the model be franchised in any way
  - The role of the network in delivering the government’s Industrial Strategy & Eight Great Technologies
  - The role of the network delivering skills in each area

Hermann Hauser review - Challenges

- SME Engagement
  - Most Catapults have in place a strategy to engage SMEs but the review calls for far more engagement across the network

- University Engagement
  - Similarly all Catapults have comprehensive networks of both University and Business engagement, probably stronger on Business right now than university links

- Creating a pipeline for the future leading to the 30 by 2030 ambition for the economy
  - By far one of the more exciting challenges is developing a pipeline for future Catapults in consultation with business and universities

- What would be the best funding model for a larger, more ambitious network
Closing the gap between concept and commercialisation

Find out more at:

Catapults  Innovate UK
Catapult.org.uk  innovateuk.org