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Catapult centres

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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

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## To quantify the problem

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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*

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## Our Competitor Nations

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- 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*

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## 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

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## 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**

**7**  
Catapults

**2013**  
All Catapults up  
and running

**£1.4bn**  
Private & public sector  
investment

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## 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



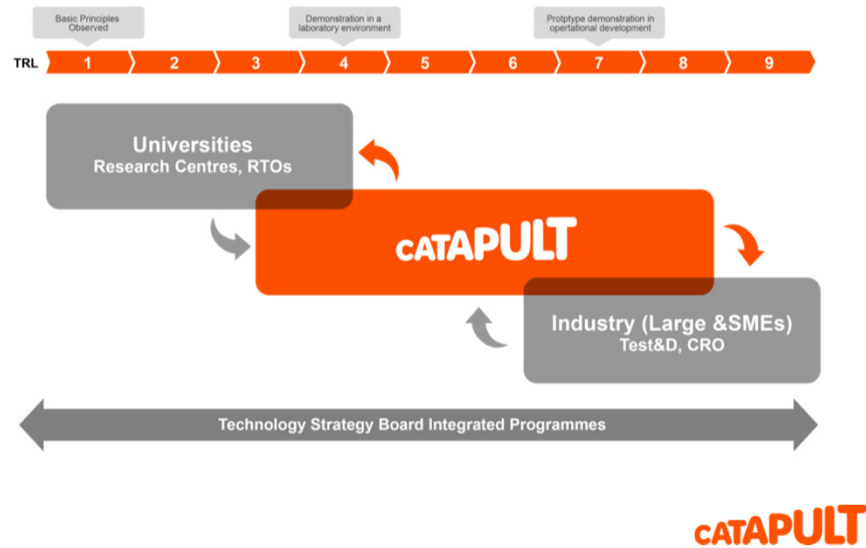
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## What is a Catapult centre?

- 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

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## Technology Readiness Levels

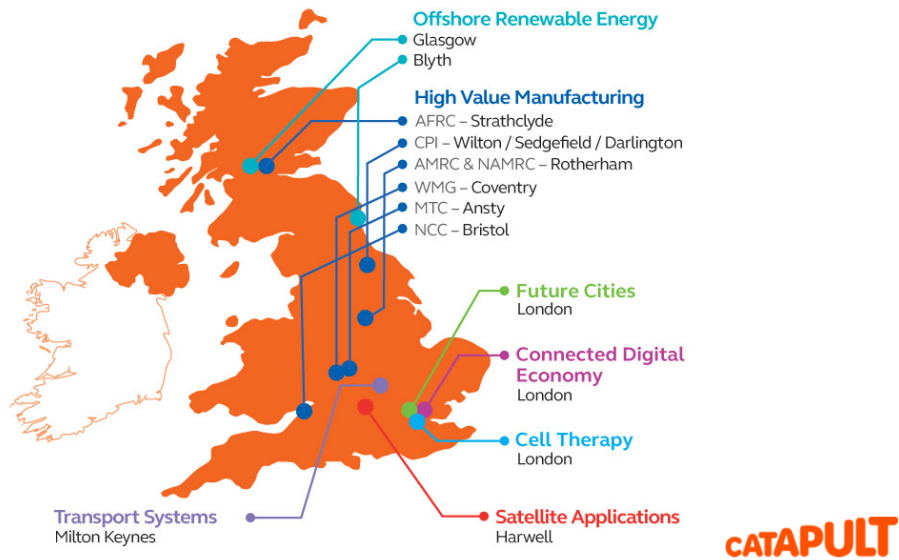


## Catapult timeline

| Current Catapults                | Date operational         |
|----------------------------------|--------------------------|
| <i>High Value Manufacturing</i>  | <i>October 2011</i>      |
| <i>Cell Therapy</i>              | <i>October 2012</i>      |
| <i>Satellite Applications</i>    | <i>December 2012</i>     |
| <i>Offshore Renewable Energy</i> | <i>March 2013</i>        |
| <i>Connected Digital Economy</i> | <i>June 2013</i>         |
| <i>Future Cities</i>             | <i>June 2013</i>         |
| <i>Transport Systems</i>         | <i>August 2013</i>       |
| 2 New Catapults                  | Target Date operational  |
| <i>Energy Systems</i>            | <i>April 2015 target</i> |
| <i>Precision Medicine</i>        | <i>April 2015 target</i> |

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## Catapult Locations



## Catapult People

| Catapult                         | CEO                    | Chair                 | Board |
|----------------------------------|------------------------|-----------------------|-------|
| <b>High Value Manufacturing</b>  | <b>Dick Elsy</b>       | <b>Bob Gilbert</b>    | ✓     |
| <b>Cell Therapy</b>              | <b>Keith Thompson</b>  | <b>John Brown</b>     | ✓     |
| <b>Satellite Applications</b>    | <b>Stuart Martin</b>   | <b>Tim Sherwood</b>   | ✓     |
| <b>Offshore Renewable Energy</b> | <b>Andrew Jamieson</b> | <b>Colin Hood</b>     | ✓     |
| <b>Connected Digital Economy</b> | <b>Neil Crockett</b>   | <b>Andy Green</b>     | ✓     |
| <b>Transport Systems</b>         | <b>Steve Yianni</b>    | <b>Will Whitehorn</b> | ✓     |
| <b>Future Cities</b>             | <b>Peter Madden</b>    | <b>Sir David King</b> | ✓     |

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## Hermann Hauser review of Future Catapult Strategy

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- 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

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## Hermann Hauser review - Challenges

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- 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

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## Closing the gap between concept and commercialisation

Find out more at:

Catapults  
[Catapult.org.uk](http://Catapult.org.uk)

Innovate UK  
[innovateuk.org](http://innovateuk.org)

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