



# VENTUREFEST

SOUTH WEST

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**UNDERSTANDING OUR SCIENCE AND  
INNOVATION EXCELLENCE FOR  
BUSINESS GROWTH**

# SW England & SE Wales Science and Innovation Audit

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18<sup>th</sup> October 2016

**5 regions to take part in  
the UK's first science &  
innovation audits**

**Uncovering scientific strengths  
to build on our potential**

Edinburgh and  
Lothians

Manchester and  
East Cheshire

Sheffield and  
Lancashire

Midlands  
Engine

South West  
England and  
South East  
Wales

Department  
for Business  
Innovation & Skills

# Background

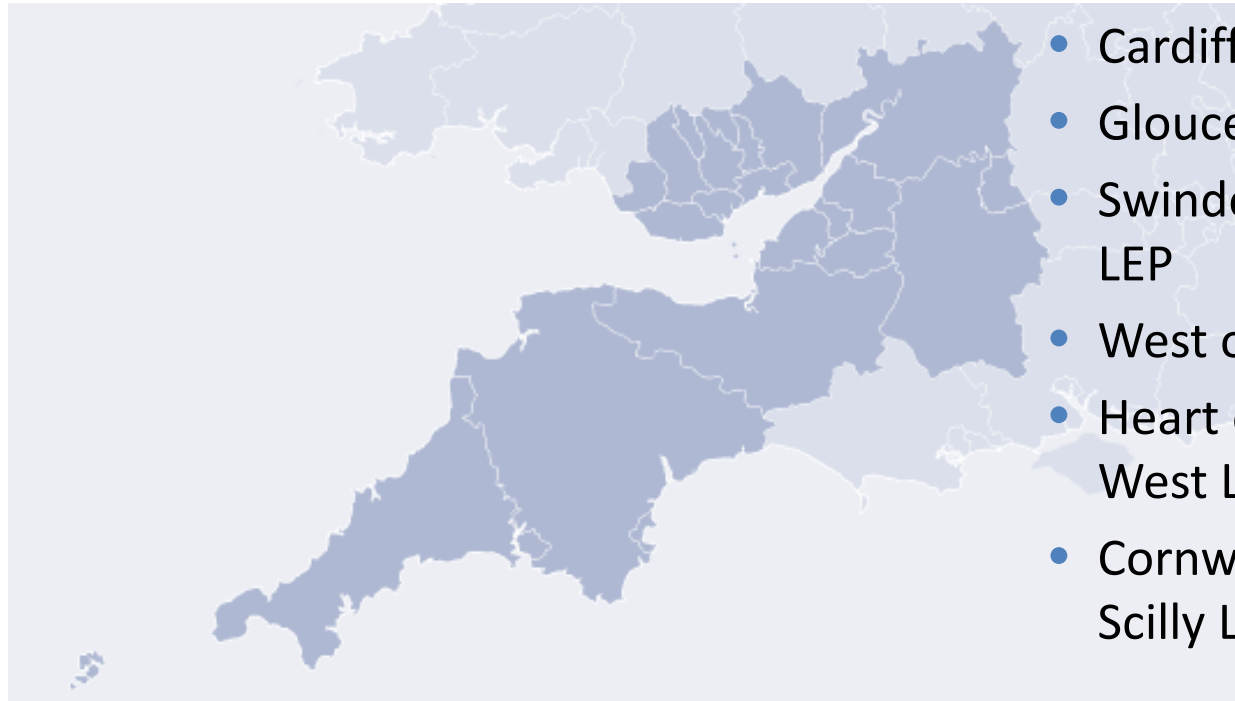
- Science and Innovation audits (SIAs) were announced by George Osborne and Jo Johnson in July 2015.
- On 9 November 2015 BIS issued a formal call for Expressions of Interest (Eoi) for consortia of Universities, cities, LEPs, devolved Governments and industry to come together.
- A SW England & SE Wales SIA consortium of 11 Universities, 5 LEPs in SW England, SE Wales, 13 Local Authorities, other research organisations and 34 businesses submitted an Eoi on the 29 January 2016.
- George Osborne announced the five 'first wave' SIAs in the March 2016 budget.

# What is a Science and Innovation Audit?

## **According to BIS:**

- A “deep dive” into data and an analysis of the science and innovation strengths of a region.
- An evidence base and community of best practice around smart specialisation.
- A way to help build evidence of potential global competitive advantage and begin to identify routes to realise that potential.
- A robust and powerful evidence base which can underpin future investment decisions.
- A commitment to working together.

# South West England and South East Wales (SWW)



- Cardiff City Region
- Gloucestershire LEP
- Swindon & Wiltshire LEP
- West of England LEP
- Heart of the South West LEP
- Cornwall and Isles of Scilly LEP

# Methodology

**Step 1**  
Setting the Stage:  
Scope & key themes for audit – our hypothesis

**Step 2**  
Diagnosis of current position:  
Expertise, infrastructure innovation pathways, industry trends / growth potential & leadership

**Step 3**  
Competitive landscape:  
Benchmark nationally & globally

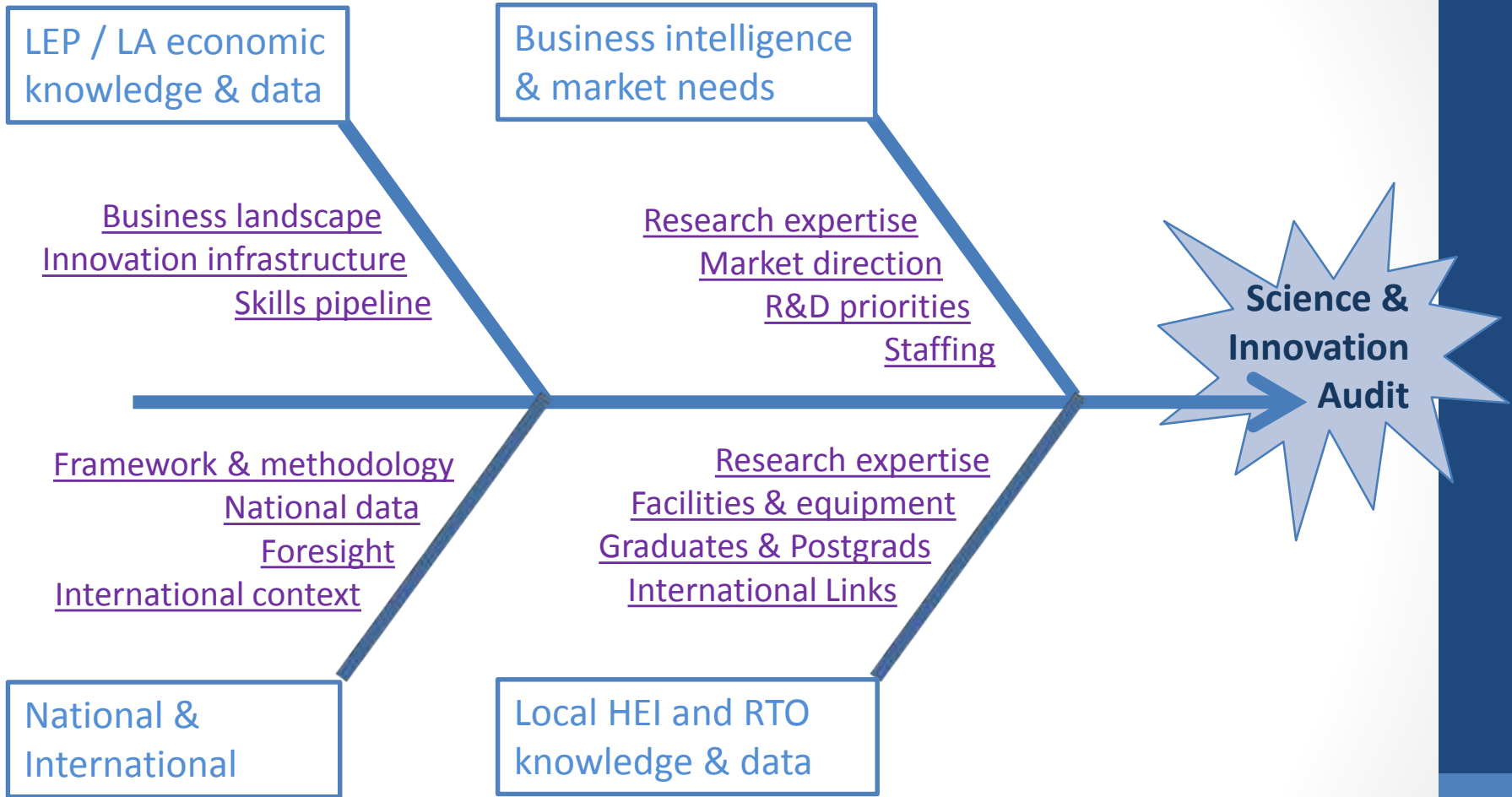
**Step 4**  
Testing our hypothesis:  
Analysis of comparative advantage (strengths, weaknesses, obstacles & enablers)

**Step 5**  
Audit Report & Action Plan

**Step 6**  
Rapid Adoption of key action items

# Initial Themes

- **Aerospace and Advanced Engineering** – aerospace, automotive & marine; and their related materials, structures and propulsion innovation.
- **New Energy Systems** – nuclear, marine renewables (tidal, wave, lagoon systems); hydrogen storage and fuel cell development.
- **Next Generation Microelectronics** – semiconductor / photonic materials and devices; systems development.
- **Digital Living Innovation** – integration of *real-time* data analytics and technology into business and the life of society and the citizen.
- **Resilience, Environment & Sustainability** – capability in weather/climate research and their effects on society and the environment.

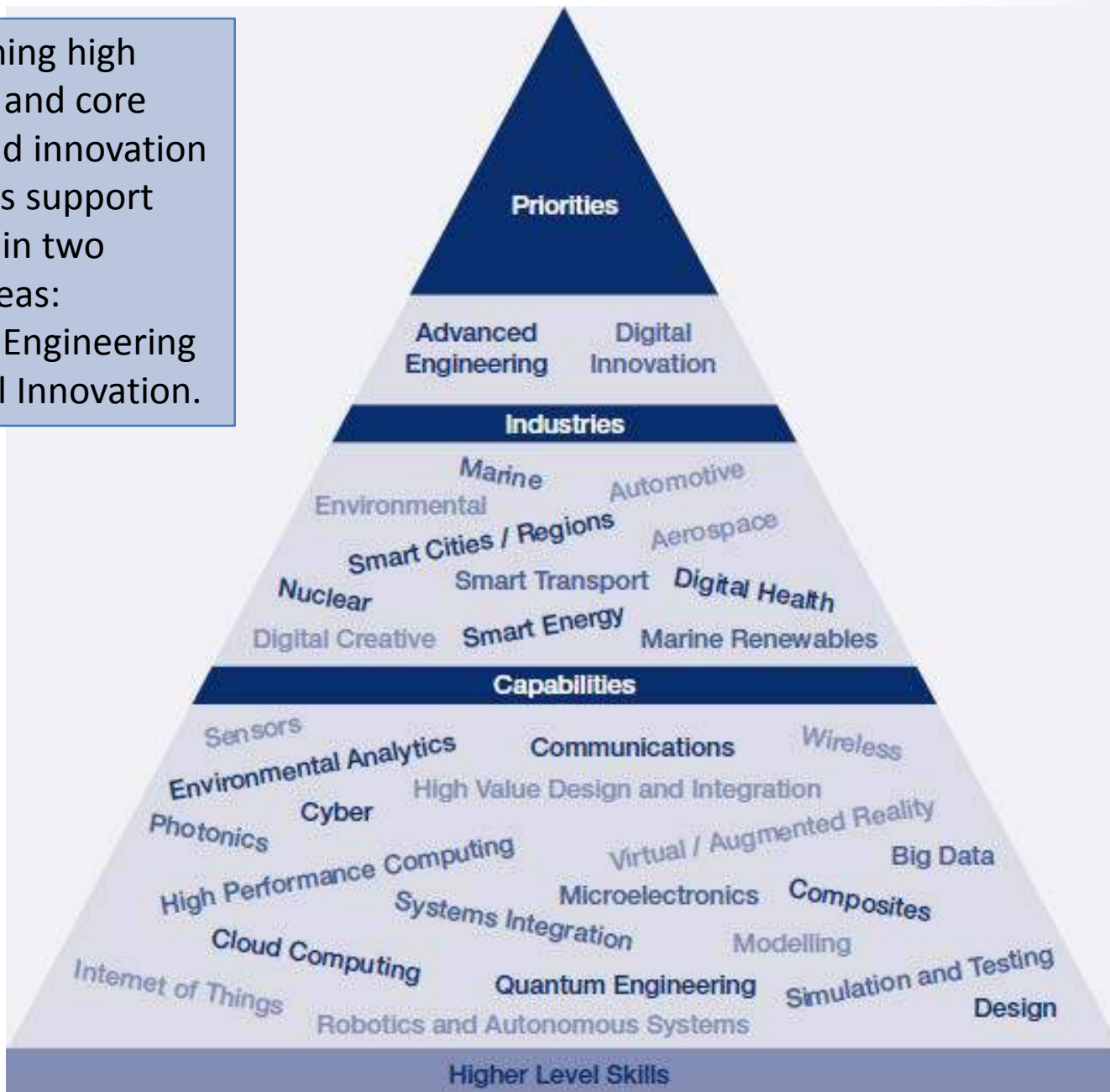




# Engagement

- Consortium: >100 organisations, 53% business.
- Steering Group:  $\frac{1}{3}$  business;  $\frac{1}{3}$  LEP and LA; and  $\frac{1}{3}$  HEI.
- Theme Panels: industry chaired, >50% business.
- 5 Stakeholder Workshops: 190 people registered (37% from business, 37% universities, 11% LEPs/LAs, 8% business intermediaries, 7% catapults / other research).
- Further meetings and surveys engaged 100s more, particularly SMEs.

Underpinning high level skills and core science and innovation capabilities support industries in two priority areas: Advanced Engineering and Digital Innovation.



## Advanced Engineering Key Strengths

The largest aerospace sector in the UK – home to 14 of 15 largest aerospace companies in the world; with associated research excellence.

High tech marine and marine renewables resources, with infrastructure unique in the UK, alongside pioneering R&D capacity.

High Value Engineering Design and System Integration skills, encompassing whole structure, sub-structure and propulsion integration.

Composites and advanced manufacturing (National Composites Centre, part of the HVM Catapult).

Technical expertise, know-how and scientific excellence in Hydrogen / Fuel Cells technology.

Strong nuclear energy expertise and associated skills development capability and infrastructure.

Emerging technology cluster in distributed energy systems and smart grid technology.

Microelectronic, photonic and semiconductor expertise (Compound Semiconductor Applications Catapult).

## Digital Innovation Key Strengths

Home to the largest silicon design cluster outside of the USA, and a recognised powerhouse of electronics and computing in industry and in academia.

Expertise in smart cities, digital media, autonomous systems, risk, resilience and digital health in which the SWW is the national exemplar.

Pioneering technology expertise in cloud computing; communications; Internet of Things; cyber security; sensors; virtual and augmented reality; robotics / autonomous systems; microelectronics; wireless technologies; data analytics; vision; remote sensing; satellite applications; high performance computing; and quantum engineering.

Home to the most productive and second largest digital economy cluster in the UK.

World leading expertise in the fields of natural hazards, climate change, marine science and broader environmental sciences; combined with the data modelling and analytics expertise, capability and assets required to translate this into profitable intelligence.

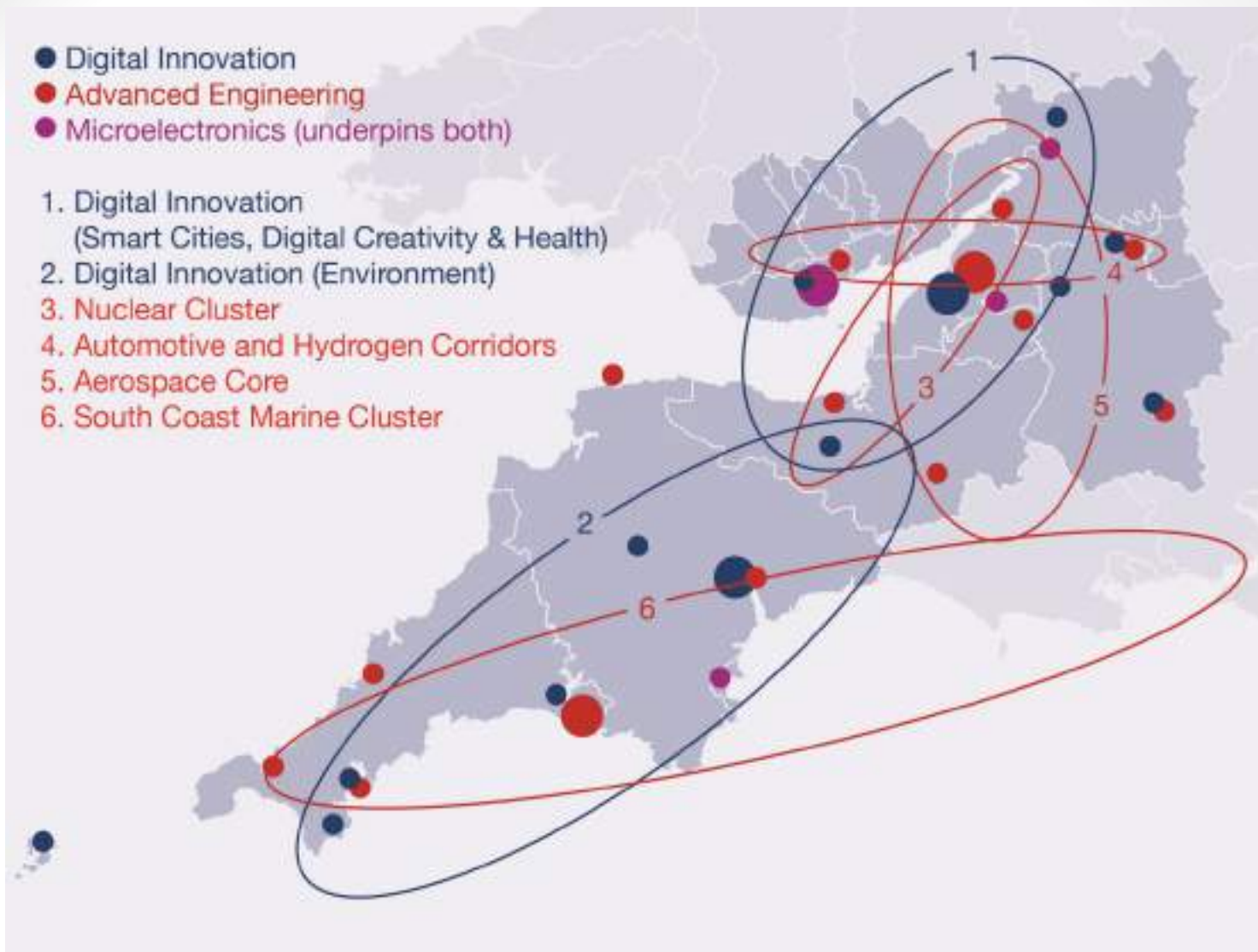


Figure 1. Map of the South West England and South East Wales Science and Innovation Audit region – showing Advanced Engineering and Digital Innovation inter-connected hubs ○ and linked assets ● (Note: schematic – size does not reflect scale.)



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2016.

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South West England  
and South East Wales

Science and Innovation Audit



September 2016



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KEEP IN TOUCH**