

Technology Strategy Board

Driving Innovation

Connect & Catalyse

Stimulating & Supporting Innovation

Iain Gray

**Chief Executive
Technology Strategy Board**

Technology Strategy Board

Driving Innovation



"I'll be happy to give you innovative thinking. What are the guidelines?"

Innovation – Fire-fighting or Arsonist



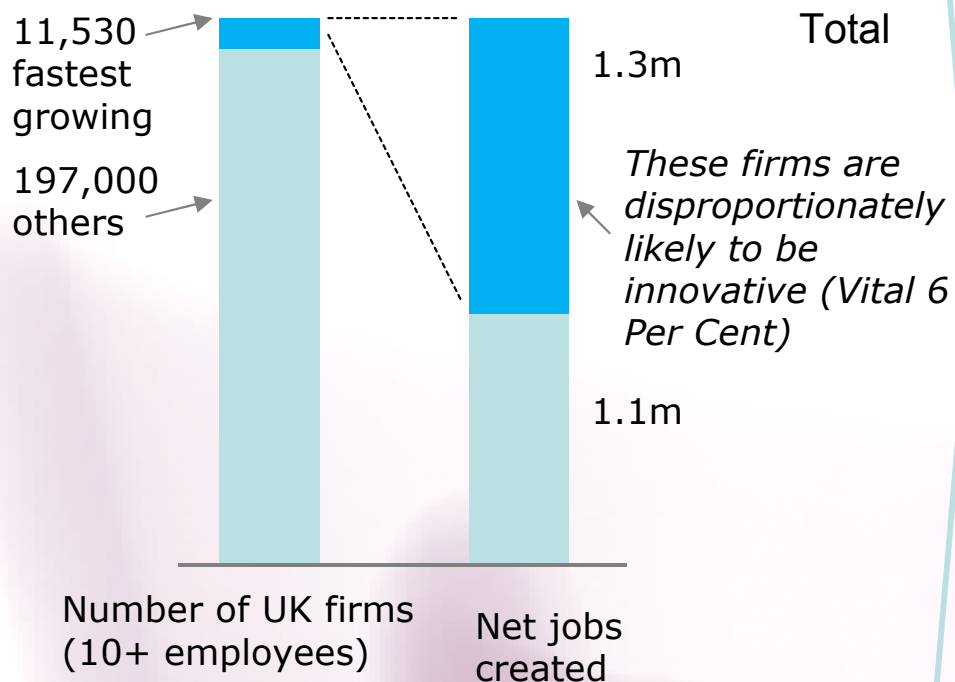
Innovation Matters

- Two-thirds of all UK private sector productivity growth between 2000 and 2007 was a result of innovation.
- UK can't compete on the costs of mass production, but have to rely on **adding value**
- This means translating our world-leading knowledge rapidly into new products and services
- Providing successful solutions to society's big challenges will provide the major business opportunities - now and in the future

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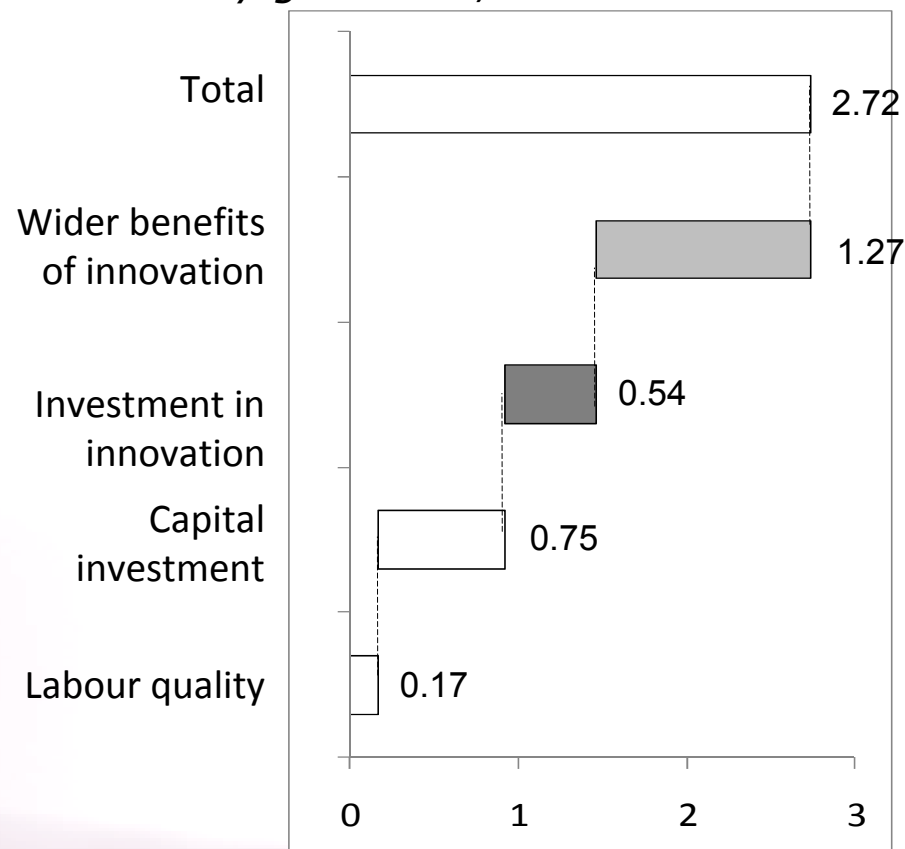
Driving Innovation

A small minority of firms are vital to growth...



...and across the economy, two thirds of growth comes from innovation

Productivity growth %, 2000 - 2007



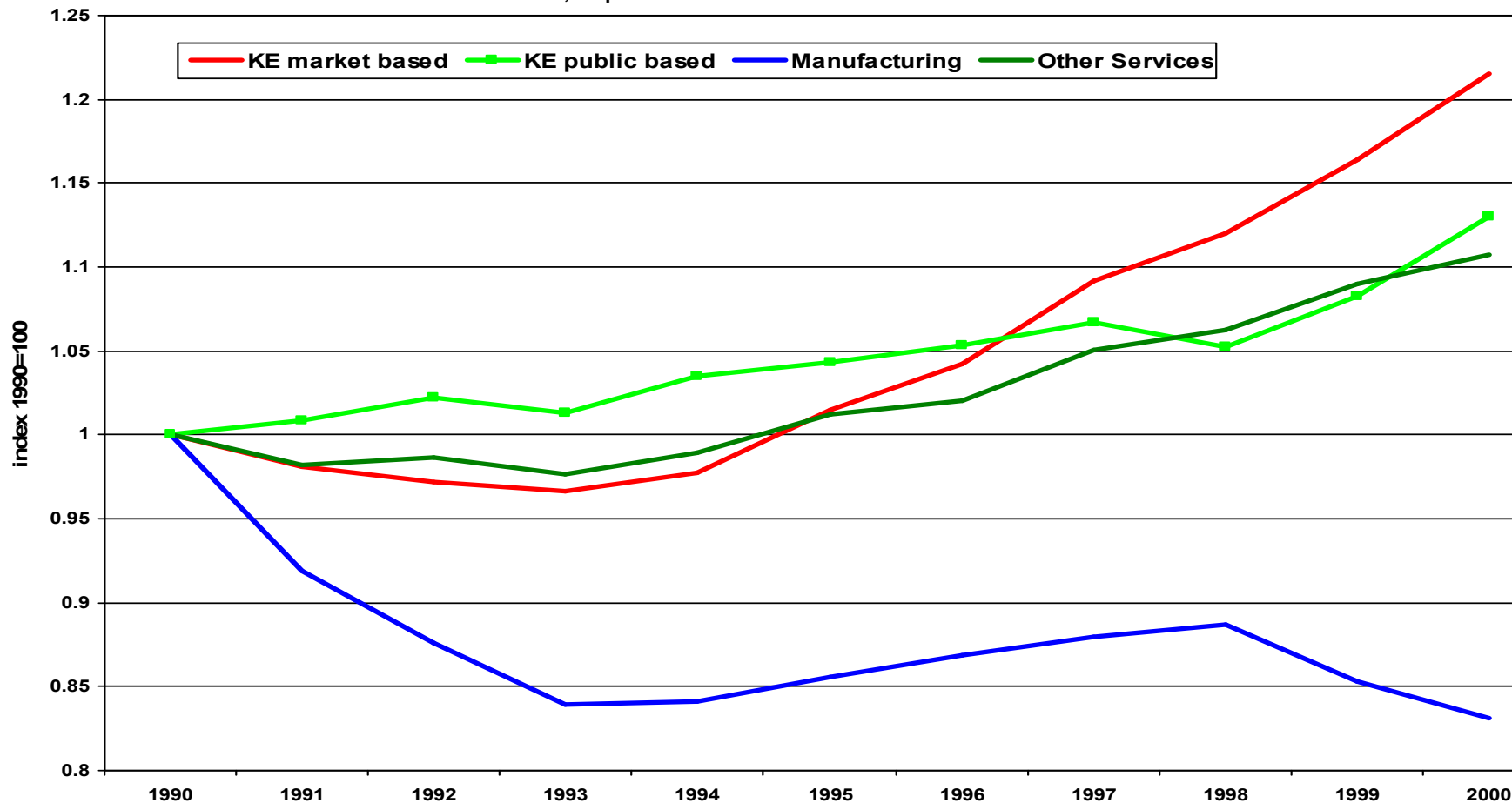
Innovation and Economic Growth – the link

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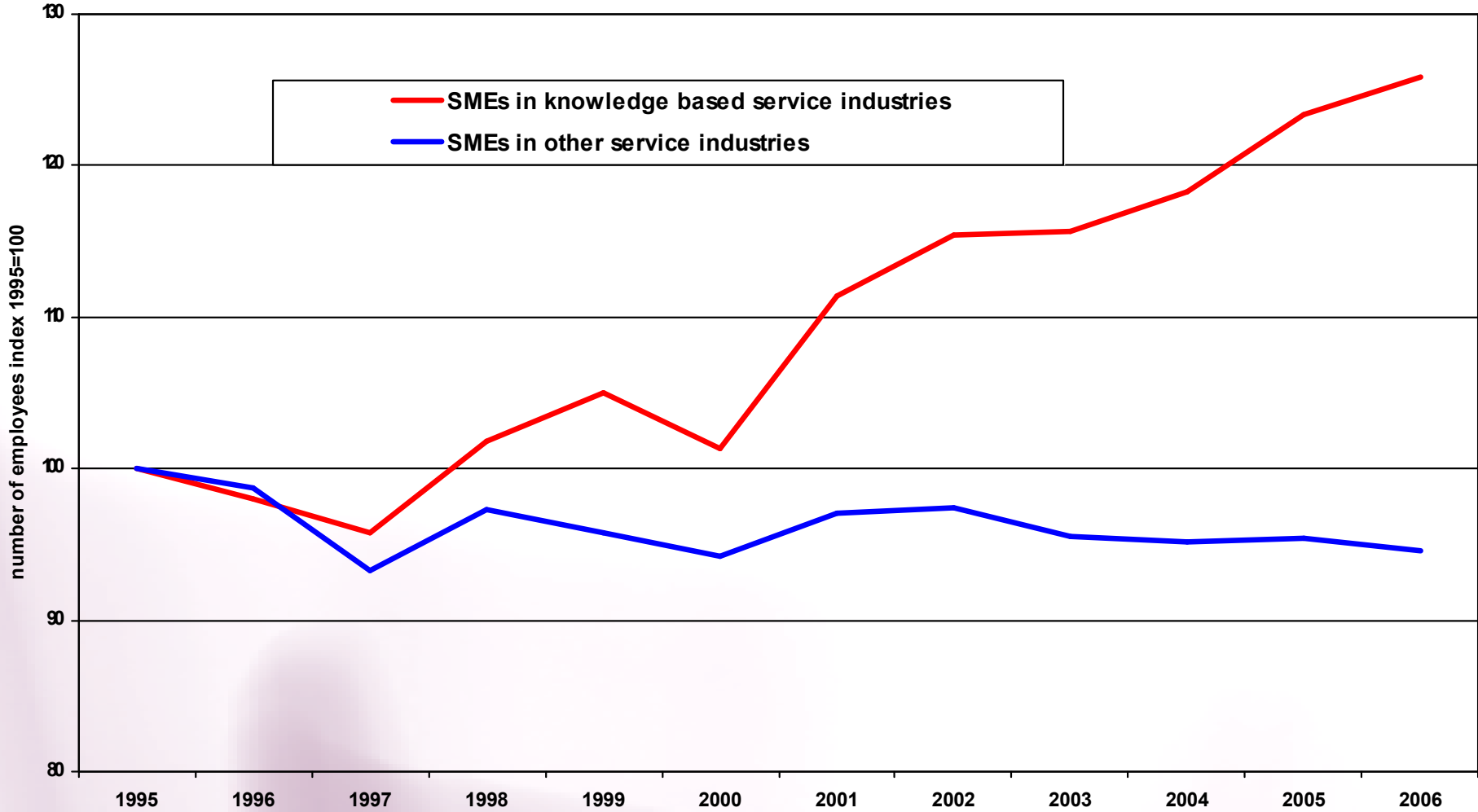
Knowledge economy and 1990s recession and recovery

total employment, EU KLEMs database 1990=100. KE market based is telecoms, high tech, business, financial, and cultural services; KE public based is education and healthcare.

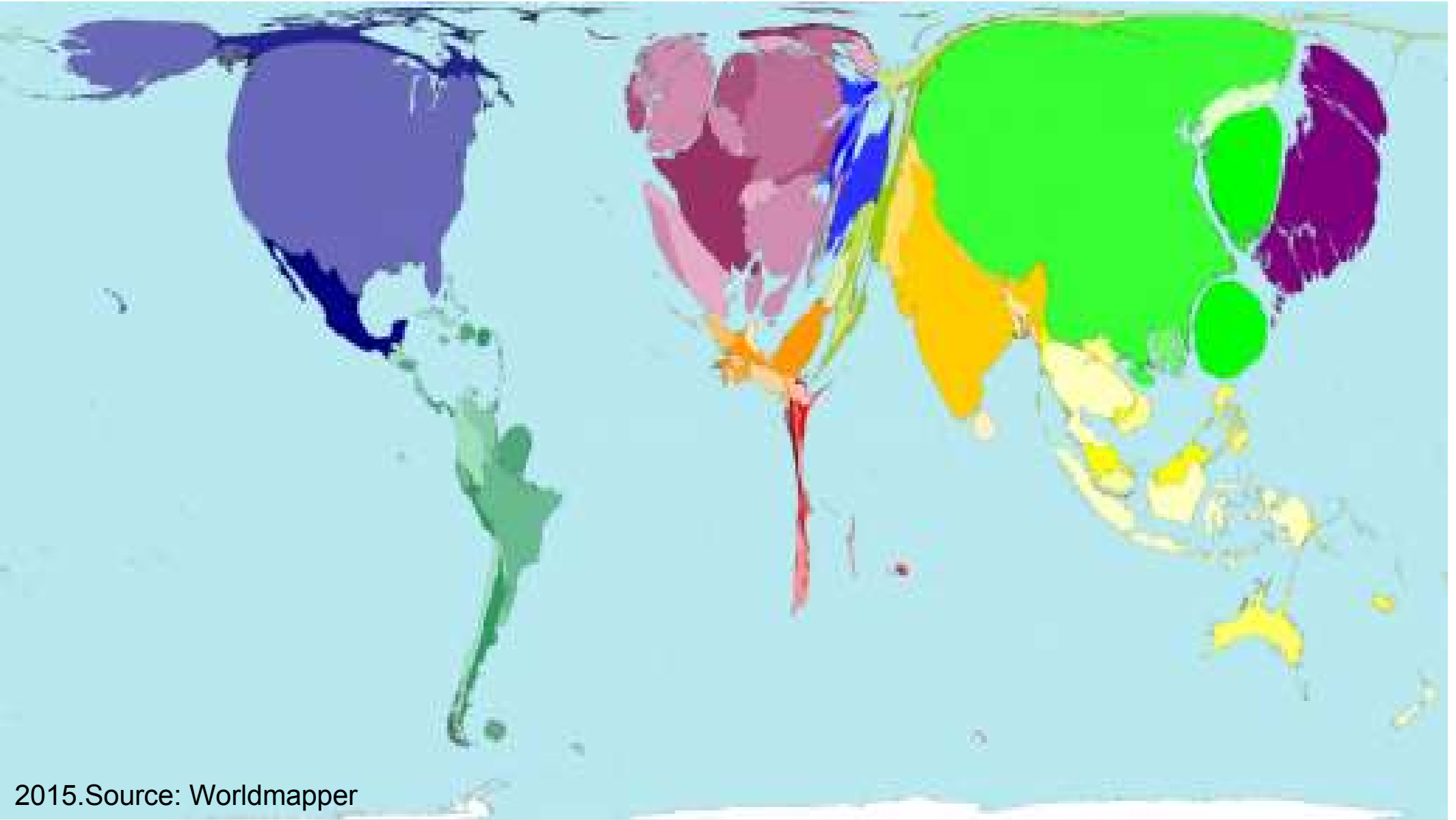


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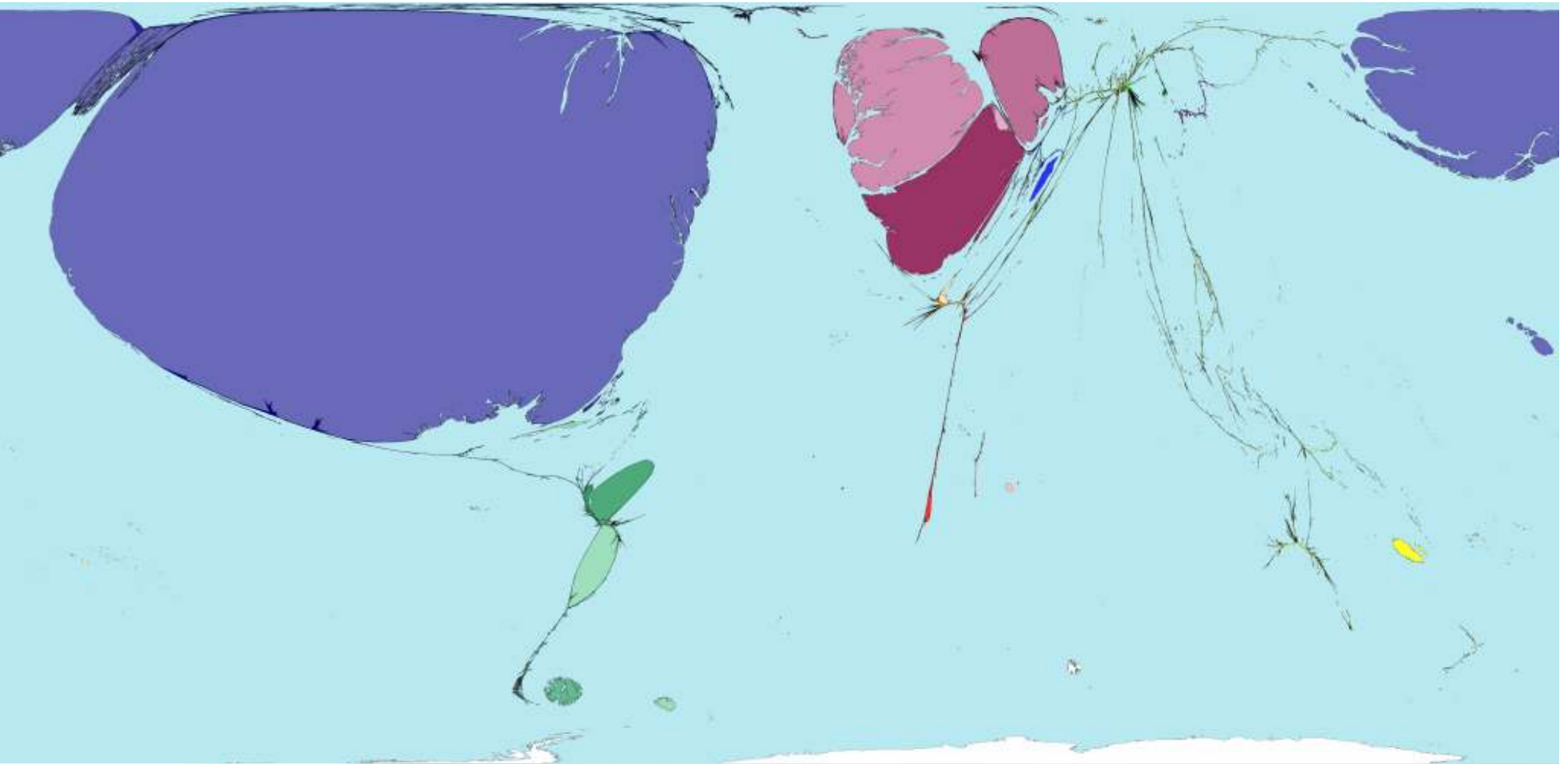
Driving Innovation



The world's wealth



UK is one of only 18 countries who are net exporters of IP



UK strengths

Data from world economic forum global competitiveness report 2010:

- Puts UK 12th overall, out of 200 countries, up one place. “The UK benefits from the efficiency of its labour market and the having sophisticated and innovative businesses ..highly adept at harnessing the latest technologies for productivity improvements and operating in very large markets”

**... the challenges
have never been
greater**

**...partnering and
collaboration is
key**



How to stimulate and support innovation?

**Connect
And
Catalyse**

Challenges and Collaboration

- Challenges stimulate markets
- Collaboration provides solution
- IBM CEO survey:
76% rank customer and partner collaboration as top source of innovation cf 14% rank internal R&D

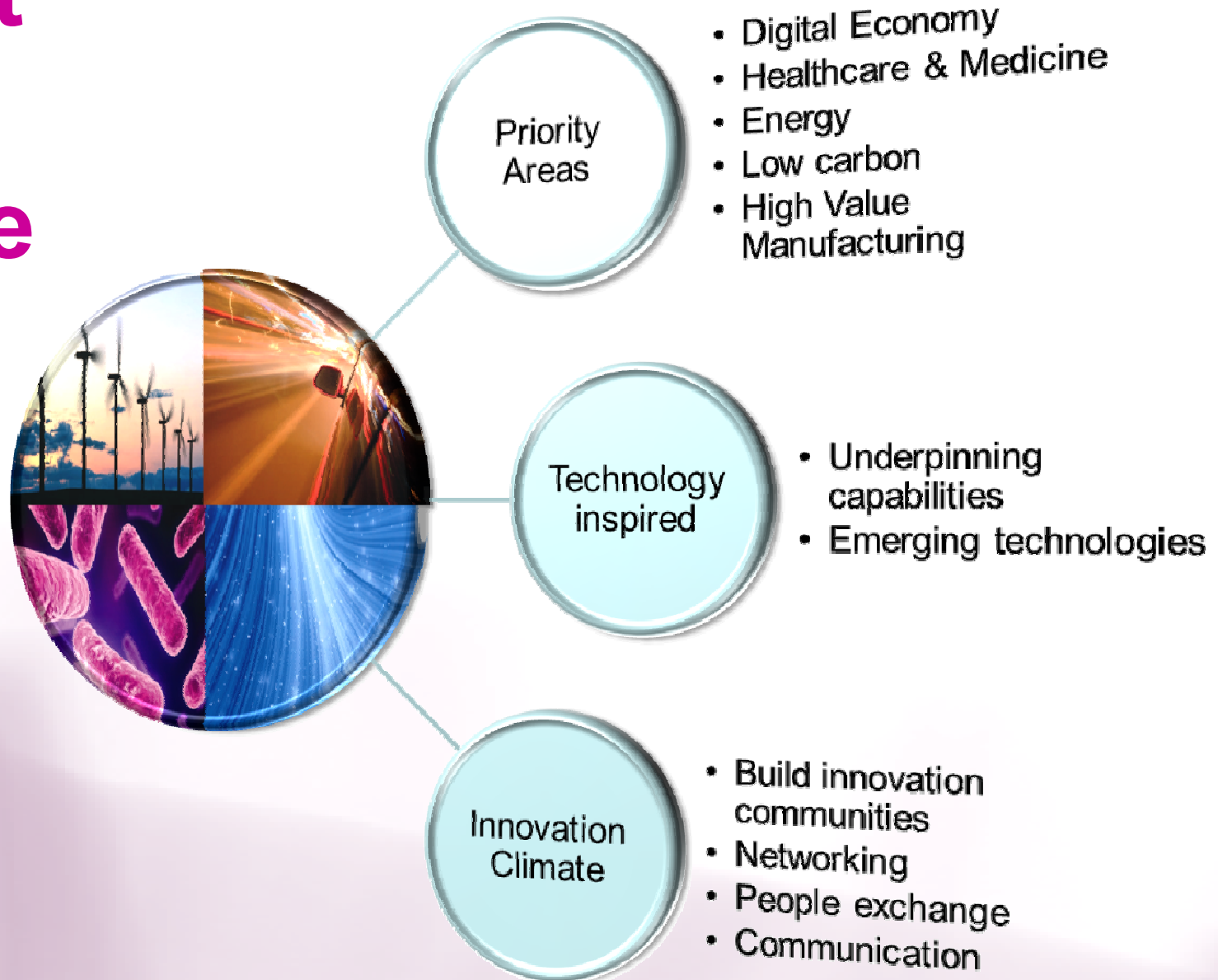
The most common problems experienced by innovators that collaborate:

- Finding the right partner
- Understanding our business
- Managing costs
- Relationship management
- Keeping control of ideas
- Legal form of the relationship
- Intellectual property rights

What's the problem?

- Business Investment is too low and too late
 - Technical and financial risks need to be mitigated
 - The time for financial return is too long for many players
- Innovation disrupts value chains and business models
 - New partnerships are required to build new supply chains
 - Investment and innovation is required at multiple points
- Longer term Trends not visible to all players
 - Impact and opportunities from emerging technologies & policies
- Innovation infrastructure complex and inefficient
 - Fragmented and difficult to navigate

Connect and Catalyse



Challenge-led innovation

We identify market needs and challenges – and support the most innovative and competitive responses

**Energy generation & supply
Transport
Medicines & healthcare
Environmental sustainability
Built environment
Creative industries
High value services
Space**



Innovation Platforms

Societal challenges where government departments are shaping future marketplaces

**Low Carbon Vehicles
Assisted Living
Low Impact Buildings
Detection & Identification of
Infectious Agents
Sustainable Agrifood
Stratified Medicine**



Intervention works:


- Low carbon vehicles – Demonstrator Programme 2009:
 - 340 cars on the road in major trial
- “I think the Government played quite a significant role, and not just in monetary terms, but in some of the things I have mentioned like the investment in the Technology Strategy Board initiative, and the NAIGT initiative, which have been really setting the stall out to get the infrastructure and to get this country to accept electric vehicles, and that is important not only for Nissan but for any other manufacturers that want to come along as well.” *Trevor Mann, senior vice president for manufacturing in Europe, Nissan, interviewed about the decision to build the Leaf electric car in Sunderland.*



Intervention works:



- Retrofit for the Future:
 - Sustainable buildings crucial to carbon targets
 - Using future building regulations to shape markets
 - 80 refitted homes with cutting edge technology for experimental monitoring.
- “We're really glad to have been involved in the Retrofit competition, it has been a very steep learning curve for us but definitely worthwhile. We have made some strong new partnerships, particularly with BRE and are currently working on a proposal with Nick Tune at BRE Wales to offer an integrated stock assessment and retrofit solutions package to housing providers in Devon.” *Energy Action Devon*



Detection and identification
of infectious agents

Assisted living

Technology-inspired innovation

Building capability in the underpinning areas that enable a sure and effective response to market needs

Advanced materials

Bioscience

Electronics, photonics and electrical systems

Information and communication technologies

High value manufacturing

Nanotechnology

Emerging Technologies



Intervention works:

- Fuel Cell Hybrid London taxi :
 - Intelligent Energy hydrogen fuel cell system
 - hybridised with lithium polymer batteries
 - zero-emissions
 - London Mayor committed to make all taxis operating in London zero tail-pipe emissions by 2020.
- “Thank you and the Technology Strategy Board team for supporting the “black cabs go green” programme and making this Monday’s unveiling of an all British, much needed zero tailpipe emissions ... taxi a reality – the UK must continue to afford to make such technology investments to re-balanced its economy, achieve its environmental and energy security targets, in short, invest for growth and exports. Put simply, without Technology Strategy Board support, this critical first step would not have been possible.” *Henri Winand, CEO, Intelligent Energy*



Intervention works:

- Novacem “carbon negative” cement :
 - Collaboration with RioTinto & Laing-O’Rourke
 - Pilot cement manufacturing plant
 - Absorbs CO₂
- 2010 MIT Technology Review world top ten most important emerging technologies



SBRI

- Using government procurement to drive innovation.
- Enables public sector organisations to procure new technologies faster and with managed risk.
- Provides paid contracts for the critical early stage of product development
- Relunched 2009
 - 18 Government Departments engaged
 - Major interest from other public sector bodies
 - 42 competitions
 - 1630 applications
 - 519 contracts (>60% new companies)



Technology Strategy Board

Driving Innovation



Successful:

For each £1 million
invested

41 new jobs,
374 company staff trained,
£3.53m increase in annual profit

Knowledge Transfer Networks

- **Materials**
- **Biosciences**
- **Electronics, Sensors, Photonics (ESP)**
- **ICT**
- **Chemistry**
- **Industrial Mathematics**
- **Nanotechnology**
- **Medicines & healthcare**
- **Transportation**
- **Environmental Sustainability**
- **Modern Built Environment**
- **Creative Industries**
- **Financial services**
- **Energy Generation & Supply**
- **Aerospace & Defence**

Building Britain's Future

Advanced Manufacturing

Low Carbon Transport: A Greener Future

The UK Renewable Energy Strategy

BIS | Department for Business, Innovation & Skills
GOVERNMENT RESPONSE TO THE INDUSTRIAL BIOTECHNOLOGY INNOVATION & GROWTH TEAM REPORT TO GOVERNMENT
IB 2025: Maximising UK Opportunities from Industrial Biotechnology in a Low Carbon Economy
May 2009



New Industry, New Jobs



Input and influence to government strategies

An Independent Report on the Future of the Automotive Industry in the UK
New Automotive Innovation and Growth Team (NAIGT)

IB 2025
Maximising UK Opportunities from Industrial Biotechnology in a Low Carbon Economy
A report to government by the Industrial Biotechnology Innovation and Growth Team
May 2009



BERR | Department for Business, Enterprise & Regulatory Reform

Building Britain's Future

Life Sciences Blueprint

Building Britain's Future

The UK Low Carbon Transition Plan

National strategy for climate and energy

HMGC

Communities and Local Government

Planning shapes the places where people live and work and the country we live in. It plays a key role in supporting the Government's wider social, environmental and economic objectives and for sustainable communities.

The UK Low Carbon Industrial Strategy

ACT ON CO2

Building Britain's Future

Government Response to Review and Refresh of Bioscience 2015 Report

May 2009

Planning Policy Statement

eco-towns
A supplement to Planning Policy Statement 1

Building Britain's Future




Technology Blueprint

- Make it easier for new businesses and innovation to flourish
- Help high-tech and innovative businesses grow
- Maintain science budget in cash terms
- Ensure UK IP framework maximises support for
 - - technology, innovation and creativity
- Technology Strategy Board a key channel through which we will incentivise business led technology innovation

Our reach is expanding

CR&D:	1,495 unique businesses	60% SMEs	80 Universities
KTP:	~5,000 businesses have participated	75% SMEs	122 knowledge base partners
KTN:	43,000 business members	>50% SMEs	14,000 non-business
SBRI:	267 businesses	100% SMEs	
European programmes:	32 businesses	30 SMEs	6 public sector
Technologist team:	>400 company visits/year + 40 workshops & sandpits (2087 attendees)		>70 public sector visits/year
Competition team:	86 briefings/info days (5200 attendees)		

A sunset scene with a bright sun low on the horizon, casting a glow over a dark landscape. The sky is filled with orange and yellow clouds. A semi-transparent grid-patterned box is overlaid on the upper portion of the image, containing text.

..those who learned to
collaborate and improvise most
effectively have prevailed.

Darwin

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www.innovateuk.org

