



Royal Academy  
of Engineering

# The UK Innovation Strategy

13 October 2021

@RAEngNews | [www.raeng.org.uk](http://www.raeng.org.uk)

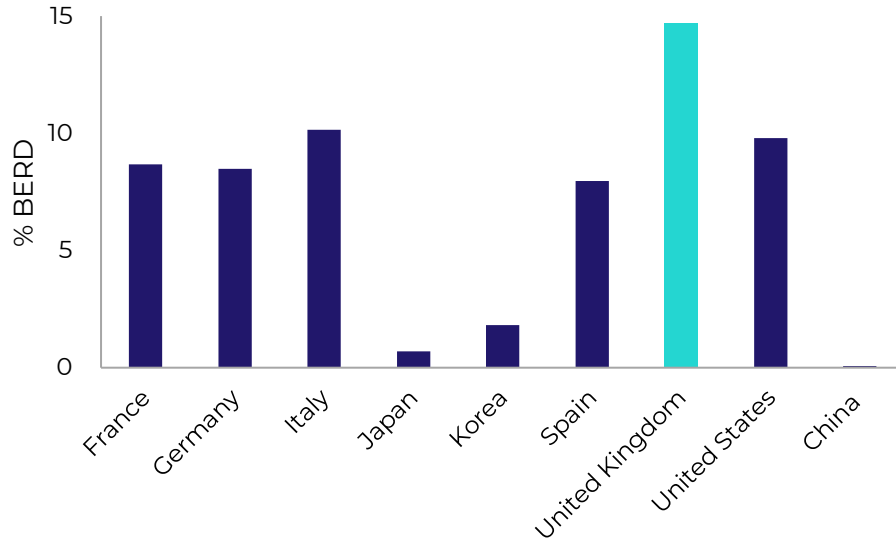
## UK Business R&D is highly concentrated

Enterprise groups	% total business R&D expenditure	Expenditure (million £)
Top 5	17%	£4,431
Top 10	23%	£5,862
Top 15	27%	£6,883
Top 20	30%	£7,843
Top 50	40%	£10,470
Top 100	47%	£12,197

Source: ONS (2021) *Expenditure and employment on R&D performed in UK businesses: top 100 enterprise groups, 2019.*

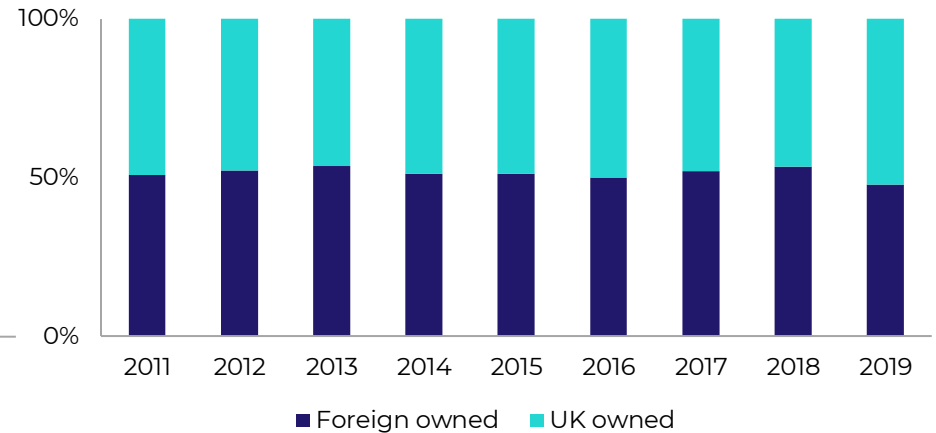
# UK Business R&D is highly internationalised

Percentage of BERD financed by rest of the world



Source: OECD (2021) [Main Science and Technology Indicators](#).

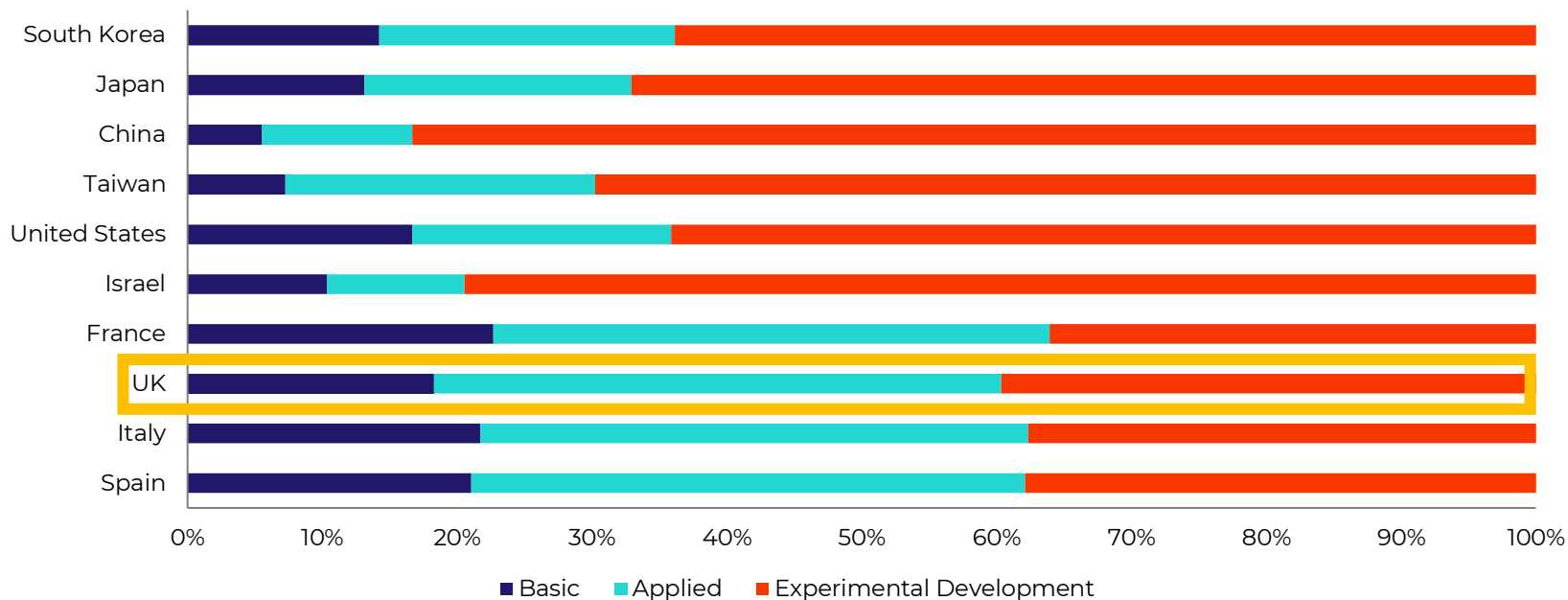
Country of ownership of businesses performing R&D in the UK



Source: ONS (2021) [Expenditure and employment on R&D performed in UK businesses: by country of ownership of businesses performing R&D, 2008 to 2019](#).

# The UK invests less in development than competitors

Gross R&D expenditure by Frascati type of research activity - 2018



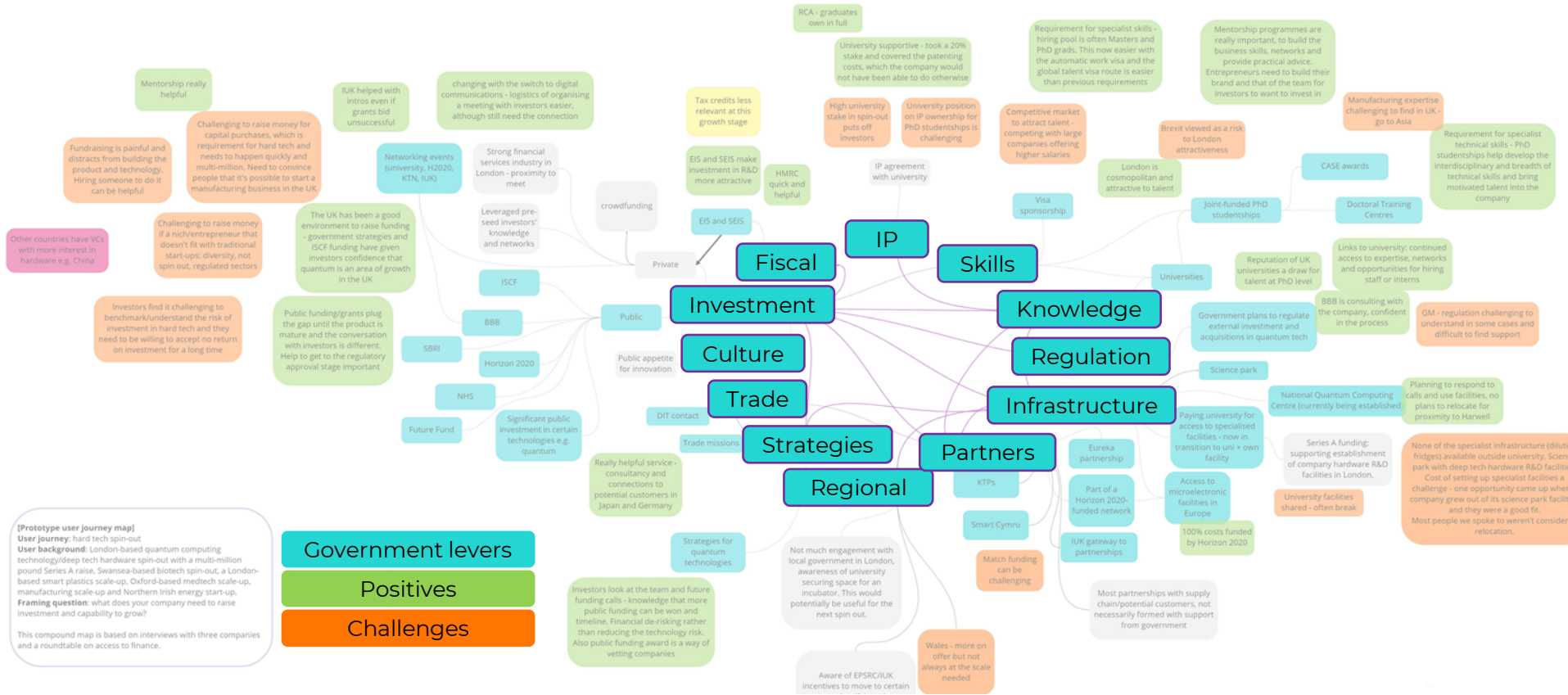
Source: OECD (2021) *Gross domestic expenditure on R&D by sector of performance and type of R&D*.

## Business perspectives on the UK as a location for R&D

Building on strengths	Action needed
Engineering workforce	Late-stage development and demonstrators
Innovation funding	Public procurement
Non-financial innovation support	Joined-up government approach
Collaboration with universities	Ownership and financial structures
Collaboration between businesses	Innovation in engineering services
Tax incentives	Innovation across sectors

Source: Royal Academy of Engineering (2018) [Increasing R&D investment: business perspectives](#).

# Policy lever mapping for deep tech scale-up companies



[Prototype user journey map]  
**User journey:** hard tech spin-out  
**User background:** London-based quantum computing technology/deep tech hardware spin-out with a multi-million pound Series A raise, Swansea-based biotech spin-out, a London-based smart plastics scale-up, Oxford-based medtech scale-up, manufacturing scale-up and Northern Irish energy start-up.  
**Framing question:** what does your company need to raise investment and capability to grow?  
 This compound map is based on interviews with three companies and a roundtable on access to finance.

**Government levers**

**Positives**

**Challenges**



Thank you