

CBI RESPONSE TO THE HOUSE OF COMMONS SELECT COMMITTEE INQUIRY INTO THE ROLE OF TECHNOLOGY, RESEARCH AND INNOVATION IN THE COVID-19 RECOVERY

The CBI is the UK's leading business organisation, speaking for some 190,000 businesses that together employ around a third of the private sector workforce. Our membership is made up of businesses of all sizes, sectors and regions, including universities.

Innovation is fundamental to economic prosperity, and businesses that develop or use new products, processes and technologies become more productive, challenge existing business models, and grow quickly. The CBI works to help create the conditions that enable businesses to come up with new ideas, invest in innovation and adopt new technologies.

What role can technology, research and innovation play in supporting the UK's economic recovery from COVID-19 and how can it best be supported in this?

Renewed awareness of the value of innovation alongside new public R&D funding create opportunities to help the UK build back better from COVID-19

Building back better

- Science, research, technology and innovation have underpinned the UK's ability to adapt and rise to the unprecedented challenges brought on by COVID-19. From scientists working on vaccine development, to the engineers that stepped up on the ventilator challenge and the mathematicians modelling the effects of the pandemic.
- For many businesses embracing technology has enabled large sections of the business community to survive the impact of Covid-19 – with huge accelerations in demand for cloud computing, e-commerce and virtual conferencing.
- In recovery, renewed appetite and appreciation for the value of research and innovation creates opportunities to build a stronger, resilient and fairer economy. As well as driving productivity and growth, innovation brings wider societal benefits, providing answers to today's biggest socio-economic challenges and creating applications that improve the quality of our lives. For this to happen government will need to take steps to protect UK capabilities and ensure businesses have the confidence and capability to continue investments in research and innovation.

Delivering an end to end research and innovation system

- In the context of new public funding for R&D there is now an opportunity to create a systematic approach to innovation support. New investment, if coupled with a focus on development and commercialisation, offers an opportunity to redress the balance of R&D funding ensuring the UK can convert its world leading R&D capabilities into commercial success that drives recovery and brings benefits across the UK. Businesses need a market for their innovation in order to invest, so driving innovation adoption will also be key to success.
- **Recommended action:** Government should use the historic uplift in R&D funding to deliver an end-to-end research and innovation strategy that grows support for development, commercialisation and adoption - positioning the UK as the best place to test, develop and bring to market new products and services.

- **Recommended action:** HM Treasury should use the upcoming Spending Review to establish a long term financial framework for public R&D with the objective of providing longer term certainty on investment and funding opportunities. This framework should target increased support towards development activities through investment in demonstrator projects, testing facilities, applied research infrastructure and clinical trial sites.

Does the current or post-COVID situation lead to any particular opportunities or challenges for economic growth driven by technology, research and innovation?

Continued progress on innovation adoption can drive growth and recovery

Accelerating innovation adoption

- The digital transformation undertaken by businesses in recent months creates a unique opportunity to drive forward further technology adoption. Many firms have rapidly got to grips with new technologies like cloud computing and virtual conferencing. Technology plans that would have taken years have been achieved in weeks. Be The Business research found that 66% of companies have either adopted new technology or are considering it.¹
- With new recognition for the value of innovation adoption there are opportunities at hand to accelerate adoption and help the UK build back better from COVID-19. Greater technology diffusion can help accelerate productivity in firms across the country and create a market for commercialised R&D output. Previous CBI research has shown that greater business take up of tried-and-tested technologies could add over £100bn to UK GVA.²
- With firms facing unprecedented cash constraints continued progress is not however inevitable. Be the Business research shows that one in four businesses fear their turnover will still be lower in 2 years' time.³
- Strategically supporting and investing in accelerating adoption of tried and tested innovation as well as emerging tech as part of UKRI's work will be key to achieving wider UKRI aim of growing R&D intensity in UK. Accelerating adoption would grow the market for innovation in the UK making it a more attractive place for other businesses to invest, develop and bring to market products and services. It would also support widening of the R&D base as more businesses move from adopters to innovators.
- For embedded change to accelerate productivity, drive recovery forward and lock in the positive changes we've seen through the crisis a new strategic approach to government support for adoption is needed.
- **Recommended action:** The CBI believes BEIS should establish Accelerate UK - a new UKRI council with strategic responsibility for innovation adoption as a business facing council working alongside Innovate UK. Its creation would establish a clear home for adoption in government and signal the importance of innovation adoption as part of an end-to-end research and innovation system.
- Rather than adding another body to a fractured landscape, Accelerate UK would be tasked with strategic join up with existing initiatives, such as Be the Business, Made Smarter and Growth Hubs. This would bring support for innovation adoption under one clear banner – improving business navigation of a fragmented system and enabling strategic local delivery.
- **Recommended action:** Government should introduce an 'Invest to grow' scheme of productivity vouchers for SMEs to be spent by 2022 on digital technologies, learning from the success of Eat Out to Help Out – vendors would be responsible for claiming funds and helping SMEs access the support. Government should signpost businesses considering using such a scheme to the wrap around support

¹ Be The Business (2020) A Third; A Third; A Third: Different firm positions on recovery

² CBI (2017) From Ostrich to Magpie

³ Be The Business (2020) A Third; A Third; A Third: Different firm positions on recovery

available, which could include the 'CTO on demand', advice on how to adopt well or the options available through partners such as Be the Business.

What lessons can be learnt from the role of technology, research and innovation in recoveries from previous economic downturns, and how relevant are these to the current situation?

In recovery there are opportunities to embed learnings from previous economic downturns as well as from experiences from the current crisis

Learning from the crisis

- Amid the unprecedented challenges presented by COVID-19 members have highlighted some unexpected positive outcomes arising during the pandemic. For instance, one member highlighted that COVID has helped catalyse R&D development in ways you wouldn't be able to foresee and helped transform the way they work with academic institutions. Members also highlighted examples of how truncated processes and speedier decision making have enabled feats of fast-paced R&I in support of UK's COVID-19 response.
- There are also opportunities to embed learnings around the design and delivery of funding support. The 'Fast Start' competition launched by Innovate UK to support innovations borne out of the COVID-19 crisis became the most applied for Innovate UK funding competition on record. In contrast to traditional Innovate UK competitions the Fast Start scheme embraced an agile funding approach, deploying funding at speed with upfront payments and a lighter touch diligence approach. The success of competition can provide learnings and points to the value of experimenting in the design and delivery of future business funding support.
- **Recommended action:** UKRI and BEIS should set up a task and finish group focussed on embedding learnings from the governance practices that have helped facilitate examples of rapid, collaborative research and innovation through the crisis.

Embedding learnings from the last recession

- The experience of 2008-10 recession suggests that business willingness to invest in innovation could be significantly impacted. Data from UK Innovation Surveys shows that the proportion of innovation active firms fell 58 per cent while R&D data shows that the number of companies undertaking R&D investment halved.⁴ The data also suggests prolonged "scarring effects" with the proportion of innovation active firms still below pre-crisis levels in 2014/16.⁵
- While the last recession differs from the current crisis, the experience points to the need for government to take measures to support firms if we are to protect the innovation pipeline and minimise risks of a prolonged drop off in investment. Alongside targeted support measures broader steps should also be to create an enabling environment for innovation through investments in digital infrastructure and skills pipeline.

How have research and innovation in UK universities, businesses and other settings been affected by the COVID-19 pandemic, and how might they be affected by any lasting changes post-COVID?

A diverse picture exists across the ecosystem after significant disruption

Disruption and cash flow challenges

⁴ Roper (2020) 'R&D and innovation after Covid-19: What can we expect? A review of trends after the financial crisis', Enterprise Research Centre.

⁵ Ibid.

- The disruption caused by COVID-19 has had varied impacts across sectors. While some businesses have adapted well to new circumstances others face suppressed demand or disruption to business activities – leading to challenges around employment and cash.
- In terms of business research and development activities, anecdotal evidence suggests that significant disruption was caused to projects relying on access to facilities through the early stages of the pandemic. By contrast, research activities not relying on access to facilities were more likely to be able to continue unaffected.
- Small early stage companies appear to have been particularly exposed in terms of cashflow during the early stages of the crisis. Evidence collated by Praxis Auril found companies facing challenges in raising venture capital funding. To manage cashflow companies furloughed staff and looked to existing investors for bridge investment in order to manage cashflow. There were also examples of companies who had received Innovate UK awards but subsequently faced challenges in sourcing the required match funding to lever Innovate UK funds.
- At independent research institutes, while some essential laboratory and field work continued, the closure of manufacturing facilities and furloughing of staff meant it was not possible to undertake live trials for innovation projects. Evidence collated by AIRTO showed organisations reporting issues with cash flow and anticipating considerable financial losses for organisations with a largely commercial customer base.⁶ Not-for-profit organisations face particular risks given the specific challenge that they cannot recapitalise from shareholders and will struggle to borrow viable amounts of cash at commercial interest rates.

Uncertainty on future investment

- In terms of investment intentions impacts appear to vary across sectors. Feedback from representatives suggests some are putting the break on R&D programmes. In a period of high uncertainty as businesses seek to preserve cash and cut back on non-essential and riskier spend R&D projects can be difficult to justify. Among companies that have been less impacted by the crisis investment is unchanged. The CBI is intending to collate further evidence on business R&D investment intentions by fielding questions on R&D investment in October surveys.
- At universities, representatives reported that while they haven't seen any major losses of business investment, they have seen postponement and found that businesses are less able to engage in funding applications. One university representative fed back that it was hard to get signals of commitments to future investment.
- Similar concerns on future investment were reflected from independent research institutes. A representative of one highlighted a 'drying up' of the pipeline of commercial contract income as companies have been deferring commitments on new R&D programmes.

How effective have measures adopted by the Government to support research and innovation, such as the support packages for innovative firms and university researchers, and the 'Ministerial University Research and Knowledge Exchange Sustainability Taskforce', been?

Interventions taken to alleviate the short term effects of the crisis must now be complemented by measures focussed on bolstering businesses ability and confidence to invest

- Continuity grants and loans for Innovate UK award holders have been welcome steps to support companies facing funding shortfalls or cash flow issues as a result of the disruption caused by COVID-19. As highlighted earlier in the response, Innovate UK's 'fast start' competition was also the most popular on record and can provide lessons for the design and delivery of future Innovate UK

⁶ Airto (2020) The Impact of Covid-19 and Lifting the Lockdown

competitions. More extensive evaluation is needed to understand where gaps may exist in short term support measures.

- In the medium term it will now be important to take steps to bolster businesses confidence and ability to invest. Rapidly deploying new UKRI budget and reducing or removing match funding requirements are steps that could be taken to help businesses to continue to invest in research and innovation amid unprecedented cash pressures.
- **Recommended action:** Continued action must be taken by government to protect capabilities, minimise scarring effects and ensure organisations have the confidence and capability to restart disrupted R&D. Specific actions that should be considered include; UKRI meeting the full economic cost of grant funded university research activities, temporary reductions in match funding requirements, support for independent research institutes to shore up damaged commercial revenue and cash flow support for businesses.

In the context of the Government’s ‘Research and Development Roadmap’, what shorter-term measures can best support UK research and innovation in recovering from the disruption of the COVID-19 pandemic and adapting to the post-COVID environment?

The R&D roadmap creates opportunities to implement measures that support recovery and help ensure the UK R&I system is fit for purpose in the future

Supporting cash constrained businesses

- Many businesses will have increased cash and time constraints as they pull out of the crisis, particularly among sectors that have been heavily impacted by the crisis. This creates a risk for R&D investment. It is important that BEIS, UKRI and Innovate UK build thinking into strategy on how to rebuild confidence and resilience among innovative firms over the longer term.
- The chief concern and barrier for businesses, especially SMEs, engaging with Innovate UK is cash. Innovate UK’s approach to match funding needs to reflect the current cash challenges facing businesses. Reducing or removing match funding requirements will be essential both to reviving innovation activity, but also maintaining expertise and jobs in innovation. One established business told us that having an Innovate UK grant part funding R&D activity within a certain division has protected related jobs during a round of redundancies as the work was subsidised.

Alleviating simple barriers to investment

- A challenge commonly cited by businesses is that funding competitions can come out with limited foresight making it difficult for businesses to develop proposals or source match funding requirements.
- For small companies with limited resource the process of competing for funding can be overly burdensome and costly when unsuccessful. Meanwhile conditions around grant support are often too specific and rigid to meet the needs of start-ups.
- **Recommended action:** Simplifying funding application processes, publishing a long-term calendar of funding opportunities, clearly signposting the availability of support and providing more flexible, agile funding opportunities are steps that Innovate UK could take to help lower barriers and support more businesses to innovate across the UK.

Utilising government procurement

- Public procurement is an important lever for driving innovation. With government being a powerful buyer in the economy, its actions can stimulate demand for new technologies, creating marketplaces that induce the development of innovative new products and services. COVID-19 has shown this in action - pitching the UK government in to the role of customer for vaccines, treatments and medical equipment.

- Previous CBI research have shown that only 5% of businesses agree that current public procurement processes incentivise innovation.⁷ The underutilisation of procurement as lever for driving innovation is significant missed opportunity. For businesses, the prospect of government contracts can be a stronger driver to innovate than the promise of grant support.
- In the context of COVID-19 government is now facing many new questions and challenges. Allocating budget across departments to invest in SBRI could serve as a way to find innovative solutions to challenges while also incentivising and driving demand for business innovation.
- **Recommended action:** The small business research initiative (SBRI) is a well-established process to connect public sector challenges with innovative ideas from industry. It is underused. Each government department should be required to allocate budget towards SBRI projects and to publish information on what steps they have taken in support of the 2.4% R&D target.

⁷ CBI (2018) Partnering for prosperity. CBI/Browne Jacobson 2018 Public Procurement Survey