




THE TECH TONIC

Shifting the ground on tech adoption and
innovation in small businesses

Published: August 2023

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Federation of
Small Businesses

ACKNOWLEDGEMENTS

This report was authored by Chris Russell, Senior Policy Manager for Skills and Innovation. Special thanks to FSB’s policy, public affairs, and media teams, in particular Emelia Quist, Head of Policy Research, Yupina Ng, Media and Communications Officer and Tom Blenkinsop, Senior Public Affairs Advisor.

Thanks also to the following FSB colleagues: Neil Hutcheson, Head of Policy (Northern Ireland); Rachel Cook, Deputy Head of Policy (Scotland); Kiera Marshall, Deputy Head of Policy (Wales); Dr LIÿr ap Gareth, Head of Policy (Wales); Paula Gouldthorpe, Development Manager (South & East Yorkshire); Mike Goodall, Development Manager (Shropshire and Hereford).

This report would not have been possible without the FSB members across the UK who participated in this research, generously taking the time out of running their small businesses to complete our survey, attend focus groups and respond to interviews. Special thanks go to the following FSB members: Chris McDonald, Neil Sharpley, and the rest of FSB’s Innovation Committee.

The quantitative research was carried out by Verve – the market research agency responsible for administering the survey. The report was designed by Cactus Design Limited – a small business based in Wales.

WHO WE ARE

The Federation of Small Businesses (FSB) is a non-profit making, grassroots and non-party political business organisation that represents members in every community across the UK. Set up in 1974, we are the authoritative voice on policy issues affecting the UK's 5.5 million small businesses, microbusinesses and the self-employed.

We provide our members with a wide range of vital business services, helping them to start, run, and grow successful businesses through high quality protection and support. This includes 24/7 legal support, legal and tax insurance, financial expertise, training and events, debt recovery, health and safety, payroll and pensions, help with care, and employment/HR advice – alongside a powerful voice in Government. FSB is the UK's largest business group and leading business campaigner, focused on achieving change which supports smaller businesses to grow and succeed.

Our policy and advocacy work starts with our expert team in Westminster, which focuses on UK and England policy issues, the UK Government, Parliament and the media. Further to this, our teams in Glasgow, Cardiff and Belfast work with Governments, elected representatives and media in Scotland, Wales and Northern Ireland.

THE TECH TONIC

Shifting the ground on tech adoption and innovation

INNOVATORS



Nearly
7 in 10
small businesses have **introduced innovative changes** in the last three years

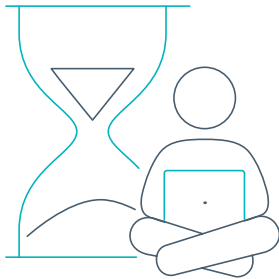


Small businesses that **introduced innovation** have seen a
14.8%
increase in revenues as a result of doing so



76%
of **female small business owners** have **innovated their business** in the last three years compared that of **66%** of their male counterparts

COSTS



Small business owners spent
14%
of their **time on innovation** in the last 12 months



30%
of small businesses **identify financial cost as a top barrier** to improve their products



£34,495
is the **average cost** for a small firm to introduce **new manufacturing processes**

INCENTIVES



39%
of small businesses would be **encouraged to innovate** if they had **more information and/or support** with implementing



46%
of small business owners pick **additional tax relief** as a driver of innovation

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FOREWORD

From the small hospitality business that adopted QR code menus to the small window blind manufacturer that re-purposed its business by producing 22,000 face masks per day, the Covid-19 pandemic spurred a growing number of small businesses to adopt new technologies and innovate. Start-ups and small businesses are quick to move with new ideas that change the economy, often up against large incumbents; now we need a set of new policies and decisions that can take this to the next level. This report presents a raft of ideas for Government Departments, regulators, public agencies, and all those with a stake in tech adoption and innovation, and how they can drive economic growth.

Too often, the word innovation is used in a vague way or it means different things to different people. Much like ‘productivity’, innovation now risks becoming a former buzzword or catchphrase rather than a driver of coherent, focused public policy. In this report, we define innovation as the development and use of new ideas and technologies to turn around the five-year period of lost economic growth that we are currently experiencing.

There is a misconception that innovation always equates to invention and is only confined to the tech industry. Developing new products is an important part of the innovation landscape. Yet it is only one part and we must take a broader look to capture the economic potential - value needs to also be placed on firms improving their products, successfully using technology or modernising their manufacturing processes.

Crucially, this does not necessarily have to take place in a lab – local high streets drive changes in how to run their businesses, too. For example, the local hair salon increases customer engagement by providing virtual hair and beauty consultations; the small manufacturer which can now bottle more drinks than ever before thanks to its automatic bottling machine; or the small firm that applies AI to adopts new marketing materials, customer emails or how it chases up late invoices.

While small businesses are agile, innovative and resilient by nature, there are undeniable barriers that are holding them back from tech adoption and innovation. This report outlines the challenges faced by small business owners looking to grow their business or work more efficiently, ranging from the lack of capital to the lack of understanding of implementation. This report also finds that disabled and female entrepreneurs are more likely to face avoidable barriers, including access to finance, highlighting the need to promote an inclusive approach.

It is hardly news that small businesses, compared to big corporates, have much fewer resources and lower margins. But, in the last few years, the level of government innovation funding that goes to SMEs is relatively low, despite 99% of our total business population being small businesses. It is important to recognise that many of today’s tech giants started out as small businesses, so

supporting the latter should be considered as an investment rather than an expenditure. That's why FSB has consistently encouraged the Government to empower small businesses to be more digital-savvy, sustainable and efficient by ensuring the relevant funding to the firms in need.

Funding alone is not sufficient to build the right infrastructure to encourage small businesses to invest in tech adoption and innovation. It also requires policymakers to have a broader understanding— one that goes beyond fixating on making the UK the next Silicon Valley and picking winners.

To move our society from low or no economic growth, we need to see more businesses free and empowered to experiment and try new ways of working, as well as a more ambitious pathway for start-ups to shake up the marketplace and change the world. To achieve this, there needs to be an inclusive, entrepreneur-led approach that incentivises small business owners to take risks and develop new solutions from the bottom up, not top-down. We hope this report would provide much food for thought and help pave the way to a new, growing, economy.



Tina McKenzie
FSB Policy and Advocacy Chair

EXECUTIVE SUMMARY

Innovation, the development and use of new ideas and technologies, is a crucial element in turning around poor productivity. For the UK to truly harness the economic benefits, the policy area needs to be considered more broadly, beyond only the development of brand-new products. The UK's current drive to become the next Silicon Valley must not come at the expense of an entrepreneur-led approach, with little focus on small businesses successfully adopting new technologies or ideas as well as changing their processes.

This report is split into seven parts:

Different types of innovation

The first chapter explores the different types of innovation that small businesses have conducted in the past three years. The report categorises innovation into four different categories:

- Developing new products
- Significantly improving products
- Introducing new or significantly improved manufacturing processes
- Introducing new or significantly improved internal and/or customer facing processes

Our evidence suggests certain types of small firms are more likely to introduce these types of changes. These include small firms that have been in business for four years or less, those with a turnover of more than £1million a year and those with female business owners.

The principal driver behind small business innovation is to grow their turnover followed by diversifying and increasing their resilience. Small businesses that have improved their processes are more likely to be motivated to do so to reduce cost or to automate. Our evidence suggests the development of new to market products brings about the most revenue gain. However, new to market innovation tends to be more time-consuming, expensive and is riskier than other types of innovation.

Barriers and incentives

The second chapter evaluates the barriers facing small firms wanting to innovate and considers what could encourage more of this activity. While time and cost are the primary factors, there is clear evidence that additional non-financial support and better information, advice and guidance would enable more small businesses to significantly improve their internal and customer facing processes.

Research and Development

Encouraging R&D activity and enabling small businesses focused on science and technology is highly important. R&D tax credits have been very successful at boosting this activity amongst SMEs. Government cuts to R&D tax relief, even for R&D intensive firms, are self-defeating, especially when countries such as France and the US are going in the opposite direction. While investing more public money into R&D is sensible, we need to ensure that government grants are well targeted as well as placing more emphasis on encouraging synergy between businesses to develop new ideas.

Intellectual Property

There is a continuing lack of engagement in the Intellectual Property (IP) regime from small businesses. Even those SMEs which developed new products in the last three years are more likely to see IP as a barrier to innovation than to have ever successfully applied for a patent. We should encourage more SMEs to engage with the IP regime. However, especially with developments in artificial intelligence, there are broader questions about whether the current IP regime inherently disadvantages small businesses.

Technology adoption

The central challenge with encouraging firms to adopt technology is enabling them to use technology and data to improve their processes. To enable successful tech adoption amongst small businesses, it is less important that they all have an intimate knowledge of technology. It is more important that they are able to review their processes and understand how technology could save them time and work more efficiently.

Green adoption

Small businesses recognise the importance of minimising their impact on the environment, but they often lack the time, expertise, and resources to do so. While small businesses do recognise the importance of getting to net zero, it is not always their top priority and finding finance to make changes is difficult. Enabling small businesses to change their processes requires a strong business support offer.

Adopting innovation and business support

Small and micro businesses want business support advice delivered from those with private sector experience and are based locally. They are more receptive to those who they trust, understand what their business requires, and communicate in a manner that is understandable and relatable. This offer, particularly in England, is patchy at best and a consistent, well-funded business support approach, which focuses on tech adoption and innovation could really boost the productivity of small businesses.

KEY FINDINGS

Small business innovation

- 69 per cent of small businesses have introduced a new form of innovation in the last three years, some of which include:
 - Development of an entirely new product(s) to their market (25%)
 - Significantly improved existing or new product(s) (38%)
 - New or significantly improved internal and / or customer facing processes (25%)
- 35 per cent of small manufacturers have introduced new or significantly improved processes for manufacturing goods in the last three years.

Motivations

- Of those that have introduced a new product in the last three years, the main reasons for doing so include:
 - to increase turnover/profit (81%)
 - to diversify their business (69%)
 - in response to the Covid-19 pandemic (19%)
- Of those that have significantly improved a product in the last three years, the main reasons for doing so include:
 - to increase their business turnover/profit (74%)
 - to diversify their business (54%)
- Of those that have introduced new or significantly improved processes for manufacturing goods the main reasons for doing so include:
 - to increase business resilience (49%)
 - to reduce overhead costs (33%)
 - to reduce environmental impacts (22%)
- Of those that have introduced new or significantly improved internal/customer facing processes, the main reasons for doing so include:
 - to increase business resilience (53%)
 - to automate processes (50%)
 - to reduce staffing costs (21%)
 - to meet regulatory requirements (16%)

Barriers and incentives

- 40 per cent of all small business owners say that a lack of time is a main barrier to them being innovators.

- 50 per cent of all small business owners say additional government grants would encourage them to innovate and 46 per cent say additional tax relief.
- 45 per cent of firms considering improving manufacturing processes in the next 12 months say that more suitably skilled staff would enable them to innovate.
- Small firms considering introducing new or significantly improved changes to their customer facing/internal processes report being held back by non-monetary factors:
 - lack of time (58%)
 - need more support to help them implement changes (50%)
 - require better information, advice and guidance (42%)
 - more capacity to implement changes (37%)
 - lack of understanding of implementation (32%)

Turnover and innovation

- 74 per cent of small businesses with a turnover of more than £1 million per annum have innovated in the last three years. This is compared to 55 per cent of small firms with a turnover of £100,000 or less.
- For those with a turnover of over £1 million per annum they are twice as likely to have made changes to their manufacturing process (18% compared to 9% for all small firms).

Diversity and inclusion

- 23 per cent of female small business owners carried out no innovation in the last three years compared to 33 per cent of male business owners.
- 27 per cent of disabled small business owners introduced new or significantly improved internal and / or customer facing processes compared to 24 per cent of non-disabled small business owners.

Costs and benefits

- On average, those who introduced innovation in the last three years saw their revenue increase by 14.8 per cent as a result of doing so.
- On average, small business owners spent 14 per cent of their time on innovation in the last 12 months.
- The average cost of introducing new innovations over a three year period (across all the different types of innovation) is £27,356.

R&D

- Of the small businesses which successfully applied for R&D tax relief in the last three years, it has led to the following:
 - improved the cashflow for their business (64%)
 - increased their investment in R&D (55%)
 - increased their investment in future projects (41%)
 - led to them undertaking projects that would not have happened otherwise (35%)

Intellectual Property

- 70 per cent say they have never successfully applied for IP or asserted copyright.
- 15 per cent have successfully applied for a trademark.
- Only four per cent have successfully applied for a patent.

Use of data

- Only 22 per cent of small businesses have not used data for commercial benefits. The commercial benefits that small firms have gained include:
 - improved customer services (40%)
 - improved marketing (35%)
 - supported their strategy, planning and management (27%)
- 60 per cent of small businesses say that the technology on offer through Help to Grow: Digital was not what their company required.

Business support

- Small businesses seeking to grow or improve the performance of their business would seek information, support or advice from the following:
 - Federation of Small Businesses (51%)
 - Private sector organisations (35%)
 - Business Wales (49% of small firms based in Wales)
 - Scottish Enterprise (34% of small firms based in Scotland)
 - Growth Hubs (22% of small firms based in England)
 - Universities (8%)
 - Further education colleges (5%)

RECOMMENDATIONS

UK Government should:

- Spend the equivalent of at least 10 per cent of the overall Research and Development budget on the diffusion and adoption of innovation. (p.39)
- Set itself a target that at least half of all direct government R&D funding goes to SMEs. (p.52)
- Ensure that regulators prioritise approaches that encourage a broad range of businesses to innovate rather than policies that focus only on a few well-resourced firms. (p.40)

HM Treasury should:

- Introduce a ‘modernisation and diversification tax relief scheme’ based on R&D tax relief. This scheme would provide small businesses tax relief for those which have invested in significantly improving products or processes. (p.40)
- Reconsider merging the two R&D tax relief schemes - the RDEC and the SME scheme. However, if they are merged, HM Treasury should have a higher rate of tax relief for SMEs, maintain the current rules in the SME scheme for subcontracted R&D, and delay implementation. (pp.52-53)
- If HM Treasury does merge the two schemes, the level of R&D intensity at which small businesses claim a higher rate of relief should be decreased to 10 per cent intensity. (p.53)
- Monitor the impact of the changes they have made to R&D tax relief and publicly publish a review of the impact on the levels of R&D conducted. (p.53)
- Abolish the Patent Box tax relief scheme and focus this funding elsewhere within innovation policy. (p.58)
- Broaden the eligibility of green reliefs for business rates to include energy efficiency. (p.69)

The Department for Science, Innovation and Technology should:

- Commission the National Audit Office to publish, every two years, a review on the economic impact of UKRI and Innovate UK spending. Audit Scotland, the Northern Ireland Audit Office, and the Wales Audit Office should also be commissioned to carry out similar reviews of R&D spending. (p.40)
- When R&D and innovation grants are awarded to large businesses, they should be actively encouraged to diffuse innovation through

to small businesses in their supply chain. (p.55)

- Devolve a high number of Innovate UK grants to national governments and in England to combined authorities. Innovate UK should be focused on co-ordinating activity and providing grants where they can provide justification of why they should be set at a UK level. (p.54)
- Establish specific innovation grants, at a national or a regional level, that are only for cross-sectoral businesses wanting to develop new products or build on pre-existing products. (pp.54-55)
- Move responsibility for innovation diffusion out of Innovate UK. National governments would be responsible for co-ordination and regional governments responsible for delivery. (p.80)
- Introduce digital audit vouchers for small businesses to enable more small firms to effectively use data and technology. (p.65)
- Implement a UK-wide DigitalBoost Development Grant Fund, based on the example of the successful Scottish scheme. (p.65)

The Department for Business and Trade should:

- Pilot a scheme to enable businesses looking to “on-shore” or “re-shore” manufacturing processes to overcome barriers they face. (p.41)
- Develop an Automation Fund, providing small businesses with grant funding to automate processes where access to labour is challenging. (p.41)
- Publish a UK-wide inclusive enterprise strategy which focuses on barriers to entrepreneurship including business support for underrepresented groups. (p.79)
- Provide extra, ring-fenced funding towards business support and establish Business England, an organisation to provide coordination and stewardship to business support delivery in England. (p.79)
- Expand Made Smarter geographically and similar bodies should be set up for different sectors across the country – these organisations should be focused exclusively on enabling small businesses to adopt innovation and technology. (p.79)
- Funding for Growth Hubs should be increased to at least the same level as the 2020/21 financial year. (pp.79-80)

The Department for Energy Security and Net Zero should:

- Decrease the eligibility thresholds for firms to be eligible to apply for Industrial Energy Transformation Fund (IETF). The current threshold for energy efficiency and decarbonisation projects should be reduced from £100,000 to £20,000. (pp.41-42)
- Introduce a “Help to Green” scheme to boost SME investment in net zero, building on the current Government pilot of a new green audit and grant scheme. (p.69)

HMRC should:

- Review its compliance activities with R&D tax relief and look to simplify the scheme. (p.54)
- Ensure that all intermediaries that are named on R&D tax credit claims adhere to a code of practice and put a cap on how much intermediaries can charge. (p.54)

The Intellectual Property Office (IPO) should:

- Give accelerated handling to patent applications from first time applicants and partially cover the legal fees of SMEs which are applying for a patent for the first time. (p.58)
- Conduct a review of the impact of patent hoarding on innovation. (p.58)
- Request the Law Commission to conduct a review into the use of Artificial Intelligence and how it relates Intellectual Property. (p.66)

The Competition and Market Authority (CMA) should:

- Review and enforce data interoperability between different software that require large data input from SMEs. (pp.65-66)

The Cabinet Office should:

- Use public sector procurement to encourage joint bids from small businesses, to encourage more collaboration between businesses and the cross-fertilization of ideas. (p.55)

Local government (in England) should:

- Encourage community collaboration by connecting digital entrepreneurs moving into a geographic area to work with the local microbusinesses and sole traders who want to adopt digital solutions. (p.66)

The Northern Irish Government should:

- Ringfence 10 per cent of Government R&D spend for NI for innovation diffusion, and government expenditure on R&D must be, at least maintained at 2021 levels. (p.42)

The Scottish Government should:

- Set out a clear timeline of the support the Scottish Government plans to provide over the next ten years. (p.42)

The Welsh Government should:

- Build on its Innovation Strategy, published earlier this year, to assess how its own policy levers can be used to incentivise small business investment and innovation, and apply our recommendations accordingly. (pp.42-43)
- Ensure that funding and capacity for Business Wales is retained after 2025, and that the Development Bank of Wales remains strongly capitalised to support SMEs in innovation. (p.80)

POLICY CONTEXT

The current policy direction

The UK's productivity problem since the financial crisis of 2008 has been well documented. Stagnant productivity has led to stagnant economic growth and there have been many initiatives to address this issue. As many policymakers have identified, one fundamental way to address productivity problems is through boosting innovation.

However, despite all the focus and resources given to research and development (R&D) and emerging technologies, there appears to be little recognition that: *“Innovation is not just the invention of new shiny things. If it was, it would have a feeble effect on economic growth.”*¹

Innovation is the development and adoption of new ideas and technology. Fundamentally, without businesses using new ideas and technology and constantly updating and refining these, investment in new ideas and technology will not solve the UK's productivity problems.

The OECD's 2020 assessment of the UK economy outlined a productivity gap between firms, with the UK having a larger than average number of firms with low productivity levels.² The report argues that this is due to a gap in the diffusion of innovation. It quotes a 2019 study that ranked the UK fifth globally in overall innovation, but 27th for knowledge absorption.

Andy Haldane, the former Chief Economist at the Bank of England, observed that the UK does research very well. However, he identified that the UK does the 'D' part of R&D *“poorly, where the D refers not just to development but the diffusion and dissemination of innovation to the long, lengthening, languishing lower tail. When it comes to innovation, the UK is a hub without spokes.”*³

Despite this, UK policymakers continue to focus evermore strongly on early-stage R&D and emerging technologies. There is an obsession for the UK to become the “next Silicon Valley.” This vision highlights the importance of generating unicorns, venture capital finance and deregulating for businesses in very limited industries.

The Chancellor of the Exchequer, Jeremy Hunt and Prime Minister, Rishi Sunak have often spoken of this ambition, they are certainly not the only politicians to do so. Between January 2022 to April 2023, “Silicon Valley” was mentioned in the Houses of Parliament 90 times. In this time period, “science superpower” was mentioned 51 times and “Research

1 Breznitz, D (2021), *Innovation in Real Places: Strategies for Prosperity in an Unforgiving World*, New York: Oxford University Press, p.3

2 OECD, *OECD Economic Surveys: United Kingdom, 2020*, https://www.oecd-ilibrary.org/economics/oecd-economic-surveys-united-kingdom-2020_2f684241-en

3 Bank of England, *The UK's Productivity Problem: Hub No Spokes - speech by Andy Haldane, 2018*, <https://www.bankofengland.co.uk/speech/2018/andy-haldane-academy-of-social-sciences-annual-lecture-2018>

and Development” was mentioned 387 times. In contrast “adoption of innovation” was mentioned four times, each time in context of the NHS. “Diffusion of innovation” was not mentioned at all.⁴

This approach focuses on a select few firms while the vast majority miss out. Furthermore, trying to copy the Silicon Valley approach does not appear to be a successful strategy to achieving sustainable economic growth. As the economist Dan Breznitz states, venture capital backed high-tech start-ups *“might indeed make their founders and funders rich, but they will not supply the wider employment and growth benefits that the regions seek. In today’s world of globally fragmented production and dominating high-tech clusters, not all boats are raised when high-tech start-ups succeed.”*⁵

Case study on the Silicon Valley Model of Innovation: Israel

Israel is often held up as an example of how to embrace the Silicon Valley model, with a flourishing high-tech sector. Yet, this has not been an effective model for sustainable growth.

While the Israeli high-tech sector was experiencing enormous growth, *“the rest of the Israeli economy (read: 80 percent of the Israeli population) enjoyed no positive spillover. Productivity and real wages in all other sectors of the economy declined or remained stagnant. The high-tech boom focused almost exclusively on financial exits – rarely on growing companies that would employ large number of non-engineers.”* Ultimately due to reliance on foreign investment and foreign markets, the tech companies resembled (and ultimately many became) R&D arms of Multinational Corporations, rarely employing staff beyond R&D engineers.

The Office of the Chief Scientist (OCS) in Israel, the core innovation agency in Israel, recognising these issues developed and implemented a program that focused on more traditional sectors in the economy. The program focused on providing education for more traditional firms looking to conduct R&D and encouraging STEM graduates to work in these firms. This program attracted a significant number of first time firms to apply for OCS grants.

However, the OCS went further and restructured to form the Israel Innovation Authority (IIA). The IIA continued to focus on high-tech innovation but they also looked at social problems, traditional industry and companies’ life cycles. The focus on life cycles enabled them to look at company funding and encouraged start-ups to use debt instead of equity to lower the pressure on companies for quick financial exits and to grow beyond a narrow R&D focus.

Summary taken from Dan Breznitz, Innovation in Real Places

4 FSB analysis of Hansard debates, conducted on 12 April 2023

5 Breznitz, Innovation in Real Places, p.5

Instead of fixating on a Silicon Valley approach to innovation, Government should focus on providing opportunities for innovation-led firms to grow in a sustainable way, and to enable the wider business population to benefit from new ideas and technologies.

The second area of broad consensus among policymakers is the importance of a “mission based” innovation strategy. This idea, outlined by Mariana Mazzucato’s *The Entrepreneurial State*, is that the Government picks certain areas of focus for R&D investment. These ‘missions’ will be areas where the state believes that R&D investment has most socio-economic gain.

Mazzucato outlines the example of the Defense Advanced Research Projects Agency (DARPA), an agency in the US that has little oversight, allowing it to take strategic gambles on what types of R&D it invests in. The UK, like many other countries, has tried to follow this example with the creation of the Advanced Research and Invention Agency (ARIA) in February 2021. It is too early to judge whether it has been a success. However, there is reason to be sceptical, as outlined by Dan Breznitz:

*“the agency [DARPA] relies on the formidable capacity of the US private sector to commercialize its transformative technologies. With its relatively weak ties to industry, the organization is poorly equipped to facilitate the diffusion and adoption of new technologies, particularly as they apply to traditional industry. Regions seeking to replicate DARPA’s model should recognise its limitations, and they need to be sure that the absorptive capacity of their industry is high enough to be able to take the outcomes of a DARPA like organisation and make them into innovations that can be the bases for new industries.”*⁶

There is another large problem with the model set out by *The Entrepreneurial State*; an underappreciation of the role small businesses play in fostering enterprise. Indeed, Mazzucato dismisses the role of SMEs in R&D and the need to diffuse innovation.⁷ This concept of ignoring the vast majority of firms in innovation policy, then wondering why large levels of R&D spend have little impact on productivity seems ill-judged. Additionally, the revised ONS statistics on R&D spend, indicate that SMEs spend more than large businesses or universities or the public sector on R&D.⁸ Their contribution to this debate should be central.

As outlined by Jonathan Haskal and Stian Westlake in their book *Restarting the Future*, policymakers often focus on the quantity of R&D instead of the

⁶ Breznitz, *Innovation in Real Places*, pp.128-129

⁷ Mazzucato, M. (2018), *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, 3rd edition, London: Penguin, pp.52-54

⁸ ONS, *Business Enterprise Research and Development*, UK: 2021, 2022, <https://www.ons.gov.uk/releases/businessenterpriseresearchanddevelopmentuk2020>

quality of R&D. The argument for a state-led approach ignores the need to foster enterprise and innovation from the private sector. Haskal and Westlake argue that:

*“A growing body of literature suggests that productivity of scientific and technological research is slowing down. We are not talking here about complex causal links such as the relationship between R&D and GDP growth, but rather about the more straightforward relationship between investment in R&D and discoveries.”*⁹

They highlight the need to focus less on overall spend and instead more attention should be focused on the quality, namely through encouraging synergies between businesses and entrepreneurial activity more broadly. While there are some areas where setting government targets makes sense, such as with net zero, to have an innovation strategy set only through the state and by narrowly defined ‘missions’ risks the levels of new inventions coming through.

Therefore, we believe that there are large problems with the current consensus of policymakers in innovation. There needs to be recognition that the state picking winners is not an effective strategy. Instead more attention should be paid on encouraging a wider range of entrepreneurial and R&D activity not just from high-tech start-ups but from all firms looking to grow. The focus of R&D policy needs to be on encouraging more bottom-up activity rather than ever-increasing focus on a top-down approach. Additionally, innovation is not just early-stage R&D. There needs to be a broader approach to innovation policy, particularly more focus on innovation diffusion and adoption.

Government innovation spending

UK Research and Innovation (UKRI), the non-departmental public body that directs research and innovation funding, has an overall budget of £7,904 million for 2022 to 2023 and £8,874 million for 2024 to 2025.¹⁰ Additionally to the UKRI budget, the UK government spent £1,834 million in 2021-22 on R&D related to defence budget and the other civil department spent £3,517 million in that financial year on R&D.¹¹

A tiny amount is allocated to encouraging firms to adopt the latest innovations. The UK’s Innovation Strategy gives Innovate UK overall

9 Haskal, J. and Westlake, S. (2022), *Restarting the Future: How to fix the intangible economy*, Princeton, New Jersey: Princeton University Press, pp.126-127

10 UKRI, UKRI budget allocation confirmed, 2022, <https://www.ukri.org/news/ukri-budget-allocation-confirmed/>

11 ONS, Research and Development Expenditure by the UK Government, 2023, <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopment-expenditure/datasets/scienceengineeringandtechnologystatisticsreferencetables>

responsibility for the diffusion and adoption of innovation.¹² The organisation's strategic delivery plan for 2022 to 2025 highlights the importance of diffusion. Yet of the four actions Innovate UK say they will undertake, two of them are piloting of schemes and two are working through existing schemes at further education colleges and universities.¹³ £18million over three years has been allocated to these schemes.

The UK Government has reduced the rate of tax relief SMEs receive for conducting R&D, scrapped Help to Grow: Digital and cut support for Growth Hubs. A more positive development is the Government's announcement in the 2022 Autumn Statement of another expansion to the Made Smarter programme, although this programme is shifting away from the initial goal of its successful pilot of promoting diffusion and towards a broader innovation role.

Given the level of funding going to UKRI and R&D grants more broadly, it is surprising that there is little independent, publicly available data or evaluation on its economic impact.

There is also little evaluation of the success of Innovate UK's grants and the levels of funding they allocate to specific organisations. The Innovation Strategy states that the programmes Innovate UK deliver create £7 of economic benefit for every £1 of public investment.¹⁴ This is a large rate of return for any type of investor, and it is unclear how this figure is reached.

Additionally, an analysis of the impact of Innovate UK grant funding on the companies who received the funding between 2004 and the start of 2022 indicates that the funding has limited impact for most firms.¹⁵ This analysis found that, on average, companies that had successfully applied for Innovate UK funding were more successful in growing their turnover, net worth and employee numbers prior to receiving the funding. Additionally, this analysis found that 18.5 per cent of all grant funding went to five large businesses. Rolls-Royce PLC alone claimed seven per cent of all Innovate UK funding or 11.7 per cent of all funding to commercial business entities.

There are also large disparities in where Innovate UK provide funding. In the 2020-21 financial year, Innovate UK spent the equivalent of £181 per

12 Department for Business, Energy & Industrial Strategy, UK Innovation Strategy: leading the future by creating it, 2021, <https://www.gov.uk/government/publications/uk-innovation-strategy-leading-the-future-by-creating-it>

13 Innovate UK, Innovate UK Strategic Delivery Plan 2022 to 2025, 2022, <https://www.ukri.org/publications/innovate-uk-strategic-delivery-plan/innovate-uk-strategic-delivery-plan-2022-to-2025/>

14 Department for Business, Energy & Industrial Strategy, UK Innovation Strategy, p.10, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009577/uk-innovation-strategy.pdf

15 GovGrant, Innovate UK: The impact report, 2022, <https://www.govgrant.co.uk/innovate-uk-the-impact-report/>

business in Scotland, £191 per business in Wales, and £150 per business in Northern Ireland. Within England there are also large disparities. In 2020-21, Innovate UK spent the equivalent of £707 per business in the West Midlands, £360 per business in the South East and £123 per business in Yorkshire and The Humber.¹⁶

“When it comes to competing for pots of innovation money, we are not competitive with the likes of London and the South East, not because we’re not as capable, but because there’s a lack of awareness that these innovation opportunities are available.

“Our applications for innovation funding were rejected three times before we were successful. This is precious time that dynamic and innovative small businesses don’t have.”

Victoria Mann, CEO of NearMeNow, Wales

There have recently been calls for UK Government to loosen its grip further in evaluating R&D spend. Some ‘blue-sky thinking’ is required, and it is important to recognise that some experimental R&D is only likely to give returns after long time period. However, none of these points are compelling arguments against independent oversight of the impact of billions of pounds of public sector funding.

Overall, there is too little attention given to how the UK is benefiting from new inventions and ideas. In this report we outline the different types of innovation and the need for Government to place value on all aspects, including encouraging more firms to develop and adopt new or improved products and/or processes.

¹⁶ UKRI, Geographical Distribution of UKRI Spend: FY2019-20 and FY2020-21, 2022, <https://www.ukri.org/wp-content/uploads/2022/05/UKRI-060522-GeographicalDistributionOfUKRISpend.pdf>

DIFFERENT TYPES OF INNOVATION

The report examines four different types of innovation:

- 25 per cent of small businesses have introduced entirely new products to their market/sector in the last three years – this can either be a new good or service that the small business (or someone on their behalf) developed from idea to implementation. This is not the same as R&D as we did not ask if there was a scientific element involved.
- 38 per cent of small businesses have significantly improved product(s) that their business offer in the last three years – this could be a good or service product, this includes improvements to existing products or new products for their business but not market/sector.
- 35 per cent of small businesses in manufacturing (9% in total) have introduced new or significantly improved processes for manufacturing goods in the last three years.
- 25 per cent of small businesses have introduced new or significantly improved internal and/or customer facing processes in the last three years – this could include marketing, HR functions, and supply chain management.

Our evidence shows over two thirds (69%) of small businesses introduced some form of innovation over the past three years. 30 per cent of small businesses had not made any innovative changes in this period. There are a significant number of small firms carrying out several different types of innovation, of the 25 per cent of small businesses who introduced new products almost a third (31%) have introduced new or significantly improved processes.

Which small firms are more likely to be innovating?

Some small businesses are more likely than others to have made innovative changes to their business in the last three years. This varies depending on the firm's sector, size, years in business and region as well as the small business owner's age and gender.

Company profile

Small businesses in information and communication and the manufacturing sector as well as those carrying out professional, scientific and technical activities are more likely than average to have introduced innovation. However, perhaps more surprising is the fact that small businesses in wholesale and retail sector have also been particularly innovative in the past three years. 29 per cent of small businesses in this sector introduced changes to their processes, 31 per cent brought forward new products and 41 per cent improved products.

Introducing new products is not the same as R&D, only five per cent of firms in wholesale and retail successfully claimed R&D tax relief in the last three years. Perhaps the explanation why the retail sector has seen relatively high levels of innovation is due to rapid acceleration of structural changes in the sector during and since the pandemic. Given these significant shifts, small non-store and store retailers have needed to carefully consider their business model and operations in order to survive.

Other sectoral trends include 55 per cent of small businesses in construction sector not having made any changes to their business, much higher than the 30 per cent average. While over a third (35%) of manufacturing firms have changed the way they produce goods, only 15 per cent of these firms made other changes related to processes. Broader process innovation is as relevant to manufacturing firms as other small businesses. Manufacturing firms still employ people and need HR processes as well as needing to conduct marketing just like other firms.

The larger the business, the more likely they are to have innovated. This is the case for all types of innovation apart from new to market products. A similar trend is seen when looking at size of turnover and number of employees (Figure 1).

Thirty-eight per cent of the self-employed and 30 per cent of micro-businesses (less than 10 employees) had not made any changes related to innovation in the past three years. Of the companies with more than 20 employees, 41 per cent have introduced improved business processes (25% on average), 20 per cent improved manufacturing processes (9% on average) and 49 per cent improved products (38% on average). However, this trend is not apparent with firms developing new products. Sole traders and micro-businesses are both slightly more likely than average to have introduced a new product (26% each compared to 25% average).

Figure 1: Innovation over the past three years by turnover

Source: FSB innovation survey, 2023

Type of innovation undertaken in last three years	Total	Annual Turnover			
		£100,000 or less	£100,001 to £500,000	£500,001 to £1 million	Over £1 million
Total process and product innovation	62%	55%	61%	71%	74%
New to market products	25%	25%	23%	27%	29%
Improved products	38%	31%	37%	42%	52%
Manufacturing processes (all sectors)	9%	4%	7%	14%	18%
Internal and customer facing processes	25%	17%	25%	29%	39%
None	30%	36%	31%	26%	20%

Small firms that have been in business for a shorter time period are more likely to have innovated in the last three years; 36 per cent of businesses that are 20 years or older have not introduced any innovation in the past three years. This is contrasted to 14 per cent of firms that four years old or less.

This suggests innovation related to introducing new or significantly improved processes, particularly manufacturing processes, as well as improving products is more straight-forward if a business has the financial resources and personnel to deliver.

There are also geographical differences. 38 per cent of small businesses in Scotland and 39 per cent of businesses in the South West of England have not bring forward any innovative changes to their business in the last three years. In comparison to 21 per cent of small businesses in the East Midlands.

Business owner profile

The Innovation Strategy published in 2021 states:

“A diverse workforce increases the opportunity for creativity and innovation within firms. Studies show that firms with more diverse teams are more innovative. Increased diversity is shown to lead to higher efficiency in knowledge-intensive industries, drive inventions and increase economic growth. The UK can only achieve its goals for innovation if we draw on

the talents of all parts of society. Promoting an inclusive innovation sector will be a central objective across all the innovation programmes the UK government takes forward in the coming years.”¹⁷

Less than one quarter (23%) of female business owners carried out no innovation in the last three years compared to a third (33%) of male business owners. There are stark gender divides to be seen with those business owners improving products or bringing forward new or significantly improved processes. 31 per cent of female business owners have made changes to internal and/or external processes and 44 per cent have made improvements to their products. Respectively nine per cent and seven per cent higher than their male counterparts.

Twenty-seven per cent of disabled small business owners introduced new or significantly improved internal and/or customer facing processes compared to 24 per cent of non-disabled small business owners.

Previous FSB research found across all ethnic groups, in both 2015 and 2018, ethnic minority led businesses were more likely than others to introduce process innovation.¹⁸

“It is currently very challenging for small business owners to access funding, equipment and technical expertise needed to support their R&D activities. I think more work needs to be done to bridge the gaps, which are currently preventing those from under-represented groups accessing the same support as their peers.”

Ruth Shepherd-Brown, STEM, Yorkshire

Motivations for innovation

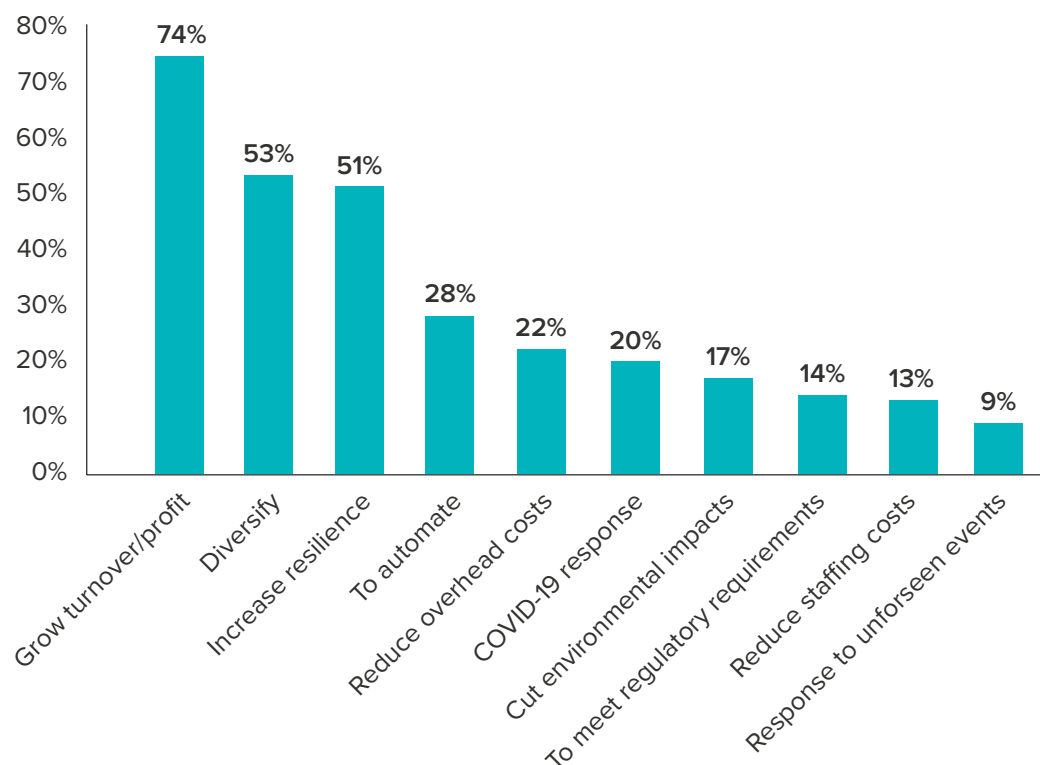
As outlined in Figure 2, the main reasons small businesses innovate are related to making their business more profitable, increase turnover, become more resilient or to diversify.

¹⁷ Department for Business, Energy & Industrial Strategy, UK Innovation Strategy, p.64, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009577/uk-innovation-strategy.pdf

¹⁸ FSB, Unlocking Opportunity: The value of ethnic minority firms to UK economic activity and enterprise, 2020, <https://www.fsb.org.uk/resource-report/unlock.html>

Figure 2: Small businesses motivation for making innovative changes in the last three years

Source: FSB innovation survey, 2023



There are large differences in motivations between the small businesses which made changes to products compared to those that changed their processes. However, the motivations are fairly similar for those which brought forward new products or significantly improved products and those which made changes to their manufacturing processes or other processes.

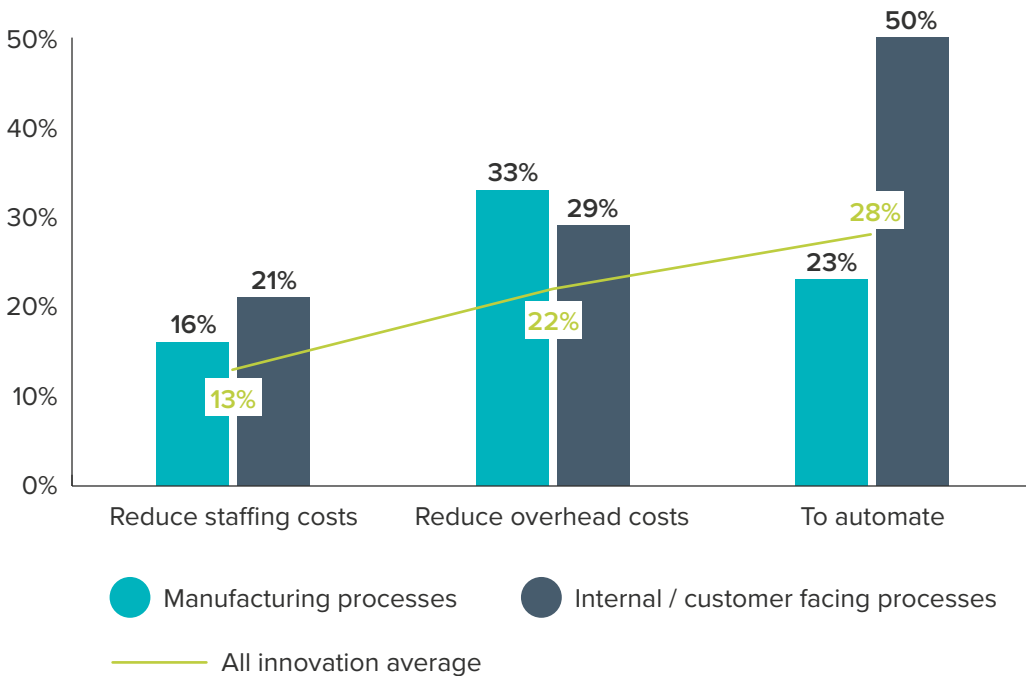
While growing profit/turnover is the primary motivator for all types of innovation, it is particularly important for those who developed new products or significantly improved products. 81 per cent of small businesses who developed new products and 74 per cent of small businesses who developed improved products say this is a top reason they did so.

Sixty-nine per cent of small businesses who brought forward new products and 54 per cent of those who say that they have significantly improved products say that diversification was a top motivation. In contrast, only 29 per cent of those who changed internal and / or customer facing processes say this was a top factor. This is perhaps interlinked to responding to the pandemic; 19 per cent of those who developed new products were motivated by responding to Covid-19.

For small businesses making changes to their processes, while growing turnover is still a large motivation, options related to a firm’s productivity are also strong factors. As shown in Figure 3, there is a relatively high amount of firms saying they improved their processes due to a desire to reduce cost or to automate processes.

Figure 3: Automation and reducing cost as a motivation for introducing new or significantly improved processes

Source: FSB innovation survey, 2023



Of those who had implemented improved processes for manufacturing goods, over one in five (22%) say that reducing their environmental impact was a motivating factor. This is less of a factor in other types of innovation.

Benefits of the different types of innovation

All four types of innovation bring benefits to small businesses and should be encouraged. Despite often being time consuming and costly to implement, the revenue gains and the wider benefits make it worthwhile in the vast majority of cases.

As outlined in Figure 4, of the four types of innovation, introducing new to market products brings about the most revenue gain. However, it is the most time-consuming, the second most expensive and slightly more risky than other innovation types.

Around a third (32%) of those who had introduced new products say that they had spent more than a quarter of their time in the last year on

innovation. 10 per cent say that they had spent over 50 per cent of their time making innovative changes to their business.

Five per cent of those firms who have introduced new to market products in the last three years saw a decrease to their revenue. Although this figure is still low, it is the most likely type of innovation to lead to revenue loss.

Figure 4: Cost, time and revenue gained from different types of innovation carried out in the past three years

Source: FSB innovation survey, 2023

	Percentage of time spent on innovation in past 12 months	Estimated cost	Revenue gain
Average	14% (all respondents)	£27,356 (all innovators)	+14.8% (all innovators)
New to market products	22.7%	£33,735	18%
Improved products	16.7%	£20,557	12.3%
Manufacturing processes	18.7%	£36,495	9.6%
Internal and customer facing processes	17%	£16,810	10.4%

Looking at the amount firms on average spend for an innovation to increase revenue by one per cent:

- New to market products: £1,874 of investment per one per cent increase in revenue.
- Improved products: £1,671 of investment per one per cent increase in revenue.
- Manufacturing processes: £3,802 of investment per one per cent increase in revenue.
- New/improved processes: £1,616 of investment per one per cent increase in revenue.

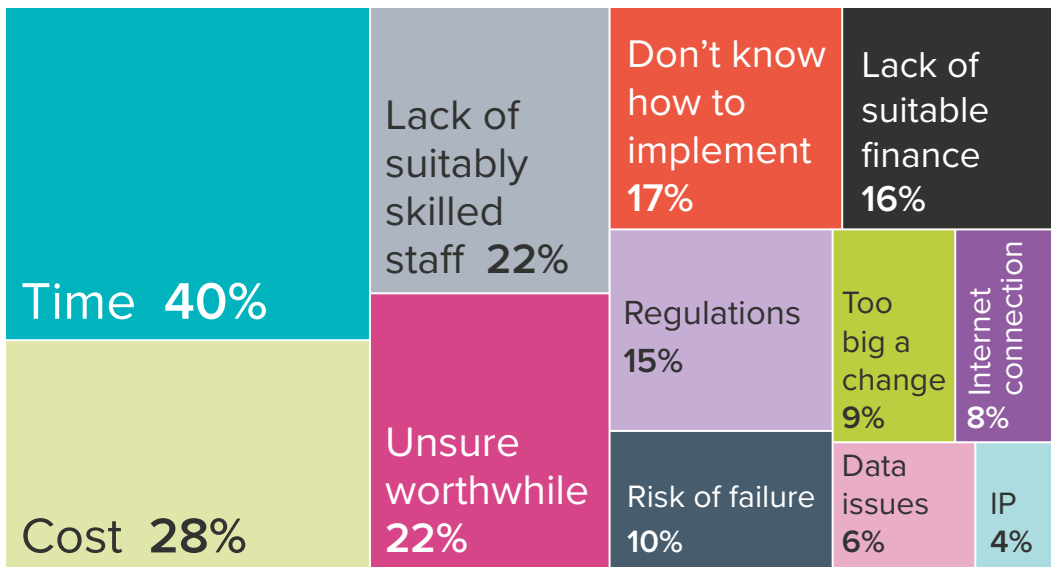
There are no significant differences in the revenue gains when comparing different sectors.

BARRIERS AND INCENTIVES TO INNOVATION

FSB research shows the main barriers to innovation are largely related to time and affordability. There are other factors involved including small business owners being unsure that they will benefit from implementing such a change and a perceived inability to carry through the innovation in a successful way. Smaller factors include intellectual property, regulations, data, and internet connection.

Figure 5: Barriers to innovation for all small businesses

Source: FSB innovation survey, 2023



Our research suggests that some underrepresented groups are more likely to experience some barriers more than others.

Figure 6 highlights how disabled and female entrepreneurs are held back by avoidable barriers such as lack of suitable finance and know-how. Disability and innovation have received very little research attention. FSB’s Business without Barriers report stated: *“disabled entrepreneurs are an essential part of the UK economy, with disabled-owned small businesses accounting for 8.6 per cent of the turnover of all UK businesses. Disabled people in work are more likely to go into self-employment than non-disabled people in work.”*¹⁹

Although fewer women carried out no innovation in comparison to men, our research suggests women are more likely to identify lack of time, know-how and a view of costs being too high as greater barriers than men.

¹⁹ FSB, Business without Barriers: Supporting disabled people and those with health conditions in the workforce, 2022, <https://www.fsb.org.uk/resource-report/business-without-barriers.html>

Our qualitative research highlighted the intersection of gender and socio-economic background as a factor when understanding barriers to innovation.

“I’m not your typical tech founder. I’m female, I’m in my forties and I’m from the heart of the South Wales valleys where we’re only a few generations away from our industrial past. With the investor landscape still having a heavily weighted male presence, it’s inevitable that many investors don’t see me in their own image.

“I often don’t fit the preconception or expectation of a typical investee and because of that there is a tendency for investors to underestimate my capability. This doesn’t deter me, however, it does mean that I need to commit more time and energy to finding investment and to proving myself.

“The irony is that females, who are often surviving in the face of the additional challenges and hurdles, are ultimately better, safer investees; there are hundreds if not thousands of us ploughing on and wasting precious time and resource whilst we’re waiting for the investor ecosystem to realise that.”

Victoria Mann, CEO of NearMeNow, Wales

Twenty-four per cent of disabled small business owners report a lack of suitable finance as a barrier to innovation. In comparison to 14 per cent of non-disabled small business owners.

Figure 6: Barriers to innovation for small business owners by gender and disability

Source: FSB innovation survey, 2023

	Total	Disabled business owner	Non-disabled business owner	Male	Female
Lack of time	40%	38%	40%	36%	49%
Lack of suitable way to finance	16%	24%	14%	15%	18%
Lack of know-how in implementation	17%	17%	17%	13%	26%
The cost is too high	28%	34%	26%	26%	33%

The top incentive to encourage small business owners to make innovative changes are financial incentives, either through grants or tax relief (Figure 7). Although, small business owners’ views on the barriers and incentives to innovation change depending on what type of innovation is being considered.

Figure 7: Incentives to innovate by different types of innovation under consideration

Source: FSB innovation survey, 2023

	All small businesses	Small businesses considering the following type of innovation in next 12 months			
		New products	Improved products	Manufacturing processes	Internal and/or customer facing processes
Government grants	50%	60%	62%	72%	64%
Tax relief	46%	57%	54%	61%	61%
Help implementing	28%	32%	37%	40%	50%
Better information and advice	26%	23%	30%	30%	42%
More awareness of the potential benefits	17%	12%	16%	16%	21%
More suitably skilled staff	24%	32%	31%	45%	32%
Better internet connection	13%	13%	15%	13%	9%
More capacity	23%	31%	34%	29%	37%

Barriers and incentives for developing new products

For those considering developing new products, affordability is an issue. However, compared to the other types of innovation, cost is less of a barrier to small businesses looking to develop new products. This is despite it being far more expensive than improving products or making changes to internal and/or customer facing processes.

Twenty-eight per cent of the small businesses considering developing new products say that cost is a barrier and 60 per cent say that increased government grants would incentivise them to further develop new

products. This is comparatively low compared to the figures for other types of innovation. 34 per cent of small businesses considering improving internal and/or customer facing processes and 35 per cent of those considering improving manufacturing processes say cost is a main barrier.

Similarly, there are a lower number who say that more help implementing, or better information and advice would incentivise them to carry out new product development. Of the small businesses considering developing new products, 19 per cent say they were concerned that they “did not know how to implement” and nine per cent say they were concerned that it would be “too big a change.”

These two trends can be explained by there being a relatively high amount of financial and non-financial support available to those considering developing new products.

In-keeping with the other innovation categories, 57 per cent of small businesses considering developing new products say that tax relief would incentivise them to develop new products. Changes announced in the Autumn Statement of 2022 and the 2023 Spring Budget, has led to the rate of R&D tax relief for small firms being significantly cut back. Therefore, it is unsurprising to see so many small firms call for improved tax relief support.

For small businesses considering developing entirely new products, IP is also identified as a barrier. 11 per cent see IP as a barrier compared four per cent across all small businesses. This is a much higher figure than those who successfully applied for patents.

The risk of failure is also rated more highly as a barrier for small businesses considering developing new products than average, with 17 per cent saying it is a barrier.

Barriers and incentives for significantly improving products

Small businesses considering improving their products rate cost (30%), lack of finance (24%) and lack of time (50%) as top barriers. As outlined in Figure 7, small business owners looking to improve their products believe at a similar rate to those looking to develop new products that more tax relief and more government grants would incentivise them to innovate. This is despite the cost of developing new to market products being 65 per cent higher than for improving products.

Thirty-seven per cent of this group of innovators say that more support on implementing would incentivise them to improve their products - a figure that is five per cent higher than those looking to develop new products. There is a strong case that more support, including financial support, would encourage more small business owners to improve their products.

Barriers and incentives for improving manufacturing processes

It is highly expensive for small firms to update their manufacturing processes. Despite this, it is crucial that we encourage small manufacturing firms to do so if we are to grow the economy. The modernisation of manufacturing processes is vital to reaching the net zero target and improving productivity.

In the UK, the manufacturing sector accounts for 12 per cent of our overall Greenhouse Gas emissions.²⁰ 22 per cent of those who developed processes for manufacturing goods say they did so for environmental reasons. While the return on investment is lower than other types of innovation, the importance of changing manufacturing processes to enable the UK to reach our net zero target means supporting this is fundamental.

The average cost of introducing new manufacturing processes is £36,495. This is the most expensive of all types of innovation, which on average costs £27,356 (Figure 4). Small businesses considering updating their manufacturing processes are most likely to highlight cost (35%) and lack of suitable finance (36%) as barriers. They are also more likely to indicate that additional government grants would incentivise them to innovate (Figure 7).

Small firms with a turnover of over £1 million are twice as likely to be able to invest in updating manufacturing processes than the average small business (Figure 1). This evidence makes it seem counterintuitive that the Government has prioritised providing grants to the largest manufacturing firms over smaller businesses.

The Industrial Energy Transformation Fund (IETF) supports businesses using high amounts of energy to reduce their fossil fuel consumption. To be able to benefit from the grant funding, firms need to be able to spend £100,000 or more on eligible technology. In May 2023, the Department for Energy Security and Net Zero (DESNZ) announced that 26 large businesses would be awarded £24.3 million, which takes the total amount awarded to large businesses to £61.4 million.²¹ It is welcome that companies such as Heineken, Kellogg's, Toyota and Britvic are investing in reducing their fossil fuels consumption. However, given that small manufacturing businesses are locked out from taking similar action, and a fair transition to net zero must include businesses of all sizes, one must wonder if some of this grant funding could be better directed to them instead.

20 UCL, Towards Net Zero in UK manufacturing: Options and challenges for the biggest emitting sectors, 2021, <https://www.sustainablefinance.hsbc.com/-/media/gbm/sustainable/attachments/towards-net-zero-in-uk-manufacturing.pdf>

21 Department for Energy Security and Net Zero, Factories receive government support to grow the economy, cut emissions and reduce energy costs, 2023, <https://www.gov.uk/government/news/factories-receive-government-support-to-grow-the-economy-cut-emissions-and-reduce-energy-costs>

Barriers and incentives for adopting new and/or significantly improved processes

Thirty-four per cent of small firms considering making changes to their internal and customer facing processes say cost is still a barrier. Financial support would incentivise these small businesses at a similar level to other innovators (Figure 7).

However, compared to other types of innovation, those considering changes to their processes are held back by a lack of support that is unrelated to cost. Almost a third (32%) identify a lack of understanding over the implementation as a barrier and 58 per cent identify time as a barrier. This group of small businesses are more likely than average to say that more support to help implement (50%), better information, advice and guidance (42%), or more capacity to implement (37%) would incentivise them to innovate.

We have seen earlier (Figure 4) that this is not the most time-consuming innovation, but it seems that there is a perception that introducing these changes will be time-consuming. The lack of support and guidance on how best to implement these changes is also off-putting. Ensuring better support to those who are considering making changes to their processes is the subject of a subsequent chapter.

Earlier in the report, we identified that female small business owners are more likely to have carried out this type of innovation. Those considering this type of innovation are more likely than average to identify barriers. This includes a lack of time (61%) and lacking the understanding of how to implement (42%).

Automation

As outlined in Figure 3, half (50%) of small businesses who adopted new and/or significantly improved processes in the last three years say that one of their main reasons for doing so was to automate processes. There is an emerging consensus that investing in automation will be crucial to boosting productivity and dealing with labour shortages.

Automation cannot be applied to all processes but where it can be, additional support could help small businesses to automate and be more productive. FSB research undertaken in May 2022 found almost half (48%) of all small firms were not automating processes as it was not possible to do so.²²

For the small businesses which feel they can automate certain processes, the main barriers faced are a high initial cost (19%), uncertainty of return (14%), and a lack of external finance (9%). This varies by sector. In manufacturing, 36 per cent of small businesses said that the high initial cost

²² FSB, Energy and National Living Wage survey, 2022

of automation was a barrier, and 21 per cent cited uncertainty of return. In contrast, for small businesses in the accommodation and food sector, 59 per cent said processes cannot be automated, which reflects the sector's reliance on labour.

Barriers and incentives for firms not considering innovating

The final group of small businesses to consider are the 30 per cent of small businesses which have not made any innovative changes to their business in the last three years. A further 42 per cent of small businesses say either that they were not considering any changes in the next 12 months, or they were unsure about it. Reaching this group of small business owners and encouraging them to adopt innovative practices, in particular, is crucial to addressing the UK's productivity problems.

The small business owners that had not made changes in the last three years had still given innovation some consideration. On average, these small business owners spent seven days considering making innovative changes to their businesses. Only 31 per cent of these small business owners had spent no time thinking about new products or processes to their businesses. This means that only nine per cent of all small businesses had not made innovative changes to their business or spent time considering making these changes.

Less than a quarter (23%) of the small businesses not currently considering making changes to their products or processes say nothing would incentivise them to innovate. These findings indicate that there is a tiny proportion of small business owners who are inherently reluctant to change their business operations and products.

The biggest barrier for this group of small businesses is not a lack of willingness but a lack of guidance and a poor understanding of the potential benefits. 19 per cent of these businesses say that more awareness of the potential benefits of innovating would encourage them to do so.

Additionally, a third (33%) of those who are unsure whether they are going to innovate say that "better information and advice" would help to persuade them to do so. More support and a better understanding of the benefits of innovation needs to be better targeted towards firms not currently innovating.

Barriers for all types of innovation: Skills

As shown in Figure 5, access to suitably skilled staff is a large barrier preventing small businesses from innovating, this is particularly the case for those looking to update their manufacturing processes. 39 per cent of small businesses considering updating their manufacturing processes say lack of skilled staff is a barrier. 45 per cent of firms considering improving

manufacturing processes say that more suitably skilled staff would enable them to innovate. This is compared to 24 per cent on average.

Forty per cent of small business owners in construction say that a lack of suitably skilled staff is a main barrier to innovation. As identified earlier, this is a sector that has the least innovation activity. More than half (55%) of small construction businesses had not made any changes to their products or processes over the past three years.

Thirty per cent of small businesses that are considering developing new products say that lack of suitably skilled staff is a barrier to innovation. This is the same number for small businesses considering changes to internal and/or customer facing processes.

The skills issues faced in relation to innovation needs to be seen more broadly than just scientists and academics. We need to give those in work, especially in sectors such as construction and manufacturing, more opportunity to upskill and reskill throughout their lives. FSB's, *Scaling Up Skills* report recommended a training tax relief system based on the R&D tax relief system to encourage more employees to receive in-work training to encourage small businesses to upskill their staff.²³

Barriers for all types of innovation: Regulation

A truly 'pro-innovation' regulatory model should encourage all small firms to innovate and improve productivity.

The Government's AI White Paper had a focus on adopting a 'pro-innovation' approach to the technology.²⁴ This included the development of a regulatory sandbox for AI. A growing number of countries are looking at regulatory sandboxes to assist companies in developing emerging technologies. The Financial Conduct Authority (FCA) is widely credited with creating the first formal regulatory sandbox and define it as "*a 'safe space' in which businesses can test innovative products, services, business models and delivery mechanisms without immediately incurring all the normal regulatory consequences of engaging in the activity in question.*"²⁵

Despite the Government wanting to expand the number of regulatory sandboxes, their impact in bringing forward emerging technologies is quite hotly debated.²⁶ There is agreement though that it is an approach that

23 FSB, *Scaling Up Skills: Developing education and training to help small businesses and the economy*, 2022, <https://www.fsb.org.uk/resource-report/scaling-up-skills.html>

24 Department for Science, Innovation and Technology, *A pro-innovation approach to AI regulation*, 2023, <https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper>

25 The Financial Conduct Authority, *Regulatory Sandbox*, 2015, <https://www.fca.org.uk/publication/research/regulatory-sandbox.pdf>

26 For instance, see: Johnson, W. G. (2022), *Caught in quicksand? Compliance and legitimacy challenges in using regulatory sandboxes to manage emerging technologies. Regulation and Governance*, <https://onlinelibrary.wiley.com/doi/full/10.1111/rego.12487>

takes significant resources from a regulator. While the FCA has conducted evaluations of the sandboxes they introduced, they have focused on the merits of their approach and the benefits for the users of the sandbox not on the holistic economic outcomes.²⁷

There are many advocates of deregulation for certain emerging technologies, including those firms that stand to benefit from Government taking this approach. However, our evidence indicates that these businesses or sectors do not see regulation as more of a barrier to developing products or processes than other small businesses. 16 per cent of small businesses that had successfully applied for R&D tax relief in the last three years identified regulations as a barrier to innovation compared to 15 per cent on average.

Small businesses in sectors more closely related to R&D actually seem less likely to identify regulation as a barrier to innovation: manufacturing (14%), professional, scientific, and technical activities (13%) and information and communication (7%). This is compared to 22 per cent in accommodation and food services, 18 per cent in wholesale and retail, and 19 per cent in construction.

FSB's, *Escaping the Maze* 2021 report found that the second most significant impact of regulatory burden upon small business is reduced productivity, with 36 per cent saying this was an impact:

*"Small businesses have reported that the burden of complying with regulatory requirements often results in lower levels of productivity, innovation and a greater financial burden, owing to the need for external advice. Deficiencies in the regulatory system such as poor design, complexity and inconsistencies make it difficult for businesses to comply with regulatory requirements, and as such contribute to the burden upon the UK's smallest businesses. Government and regulators must reform the culture which surrounds the proposal of new regulations under the domestic framework."*²⁸

In addition, the report highlighted the case of the Government of British Columbia as an example for the UK to follow in reducing regulatory burden for small businesses. If the aim is to boost productivity and economic growth rather than providing assistance to a select few companies, the UK Government should adopt an approach to regulation reform with proven success that benefits a wide range of small businesses.

Broader approaches to regulation that encourage a wide range of

27 The Financial Conduct Authority, Supporting innovation in ESG data and disclosures – the digital sandbox, 2022, <https://www.fca.org.uk/publications/corporate-documents/supporting-innovation-esg-data-disclosures-digital-sandbox>

28 FSB, *Escaping the Maze: How small businesses can thrive under the British Columbia regulatory model*, 2021, <https://www.fsb.org.uk/resource-report/escaping-the-maze.html>

businesses to innovate should also be encouraged. For instance, the Information Commissioner’s Office has recently launched an innovation advice service for businesses wanting to use data for innovative purposes.²⁹

“The ICO appreciates that data protection law can be complex. We are here to help and to empower all businesses to responsibly innovate and grow.

“As well as our Business Advice Service, which gives general advice to enable businesses to use personal data responsibly, we have recently launched our Innovation Advice Service. This service offers specific innovation advice to businesses with specific technical questions when planning to use personal data in new or innovative ways. Data is increasingly crucial to innovation, and it is important to support small businesses to use it responsibly.”

Paul Arnold, Deputy CEO and Chief Operating Officer, Information Commissioner’s Office

Recommendations

UK Government should:

- **Spend the equivalent of at least 10 per cent of the overall Research and Development budget on the diffusion and adoption of innovation.** R&D and the invention of new products only has an economic impact if they are widely used. If the point of spending public money on R&D is to boost UK productivity, there needs to be recognition of the importance of small businesses taking up new or improved products or processes. The UK Government has brought forward different support schemes to enable more companies to adopt innovation, but these have been poorly funded and short-lived. Similarly, business support continues to be poorly funded and constantly changing. Only through significant commitment can business support schemes be a success.
- **In line with the British Columbia Model, the UK should set a target of reducing regulatory requirements by one-third in three years.** Regulatory requirements resulting from legislation, administrative rules, guidance, policies and regulatory practices should all be included in scope. The detailed principles of the British Columbia Model should be included in the UK’s domestic regulatory framework, and the success of the reform should be

²⁹ Information Commissioner’s Office, Innovation advice service, accessed July 2023, <https://ico.org.uk/for-organisations/advice-and-services/innovation-advice/>

assessed by the number of regulatory requirements which have been repealed, with an emphasis on ensuring that regulatory requirements are proportionate to the size and complexity of a business.

- **Ensure that regulators prioritise approaches that encourage a broad range of businesses to innovate rather than focusing too much on policies such as sandboxes that only benefit a few well-resourced firms.** It is important to ensure transparency about the regulatory flexibility firms can access through sandboxes and ensure that these flexibilities are available to all regulated entities. Regulators should develop support services that enable all small businesses looking to innovate to be able to quickly clarify regulatory boundaries as well as access advice and guidance so they can proceed with innovation in a timely manner. An example of this type of service was recently launched by the Information Commissioner's Office.

The Department for Science, Innovation and Technology should:

- **Commission the National Audit Office to publish, every two years, a review on the economic impact of UKRI and Innovate UK spending. Audit Scotland, the Northern Ireland Audit Office, and the Wales Audit Office should also be commissioned to carry out similar reviews of R&D spending.** The reviews should be based on the economic impact of specific grant funding that UKRI has spent and not on macroeconomic data related to R&D spending in general. There is little oversight of billions of pounds of public money and this needs to change. It is important to recognise that some UKRI grants will be of limited immediate economic benefit. However, the rationale for expanding UKRI's budget was an economic case and the impact should be judged on an economic basis.

HM Treasury should:

- **Introduce a 'modernisation and diversification tax relief scheme' based on R&D tax relief. This scheme would provide small businesses tax relief for those who have invested in significantly improving products or processes.** R&D tax relief is currently focused on firms developing new products through science. This is a narrow way to view innovation; improving products and processes brings similar financial benefits to firm. A new scheme, with the tax relief set slightly lower than the

current R&D tax relief, would encourage more firms to improve their products and processes.

The Department for Business and Trade should:

- **Pilot a scheme to enable businesses looking to “on-shore” or “re-shore” manufacturing processes to overcome barriers they face.** During the pandemic and uncertainty related to global supply chains, we saw more businesses move their manufacturing supply chain back to the UK. However, there are feasibility challenges that restrict some businesses being able to do so. These might be related to not having enough suitable workers or certain parts being hard(er) to access. Government should work with a diverse range of businesses who would like to on/re-shore their manufacturing processes, identify the barriers that are preventing them from doing so and what policymakers could do to enable them bring their manufacturing processes to the UK. This could include introducing skills bootcamps in certain areas or working out solutions supply chain problems. If the pilot succeeds in encouraging the majority of these companies to bring a higher proportion of their manufacturing processes to the UK, it should be expanded.
- **Develop an Automation Fund, providing small businesses with grant funding to automate processes where access to labour is challenging.** This could be targeted towards specific sectors in which we know they cannot fill certain roles due to labour shortages and automation could potentially solve this issue if small businesses were better able to invest. To ensure that small businesses are also training and developing their staff, as a pre-requisite to eligibility, firms should have a training plan in place.

The Department for Energy Security and Net Zero should:

- **Decrease the eligibility thresholds for firms to be eligible to apply for Industrial Energy Transformation Fund (IETF).** The current threshold for energy efficiency and decarbonisation projects should be reduced from £100,000 to £20,000. The Department should also consider lowering the minimum engineering and feasibility studies thresholds. The IETF is currently only available for energy intensive firms spending £100,000 or more on energy efficiency or decarbonisation projects. It is also available for feasibility studies that cost over £30,000 or engineering studies that cost over £50,000. The current focus on large firms is misplaced and this fund should be

opened up so that small businesses can apply. Small businesses who made changes to manufacturing processes in the past three years, on average report the cost at £36,495. Only 11 per cent of small businesses state the cost exceeded £100,000 and only one third (33%) state it exceeded £25,000.

The Scottish Government should:

- **Set out a clear timeline of the support the Scottish Government plans to provide over the next ten years.** FSB Scotland welcomes the Scottish Government's recent publication of the National Innovation Strategy, which highlights the clear link between the lack of innovation within small firms and the resulting impact on productivity on Scotland's economy.³⁰ The setting of a target to bolster support available to SMEs to innovate, particularly around forms of finance and investment is greatly welcomed.

The Northern Irish Government should:

- **Ringfence 10 per cent of Government R&D spend for NI for innovation diffusion, and government expenditure on R&D must be, at least maintained at 2021 levels.** The ambitions, set out by the 10x Delivery Plan, to boost R&D expenditure by 55% and to enable more businesses across the economy to become innovative are welcome.³¹ However, these goals are not achievable if there is a decreasing level of government expenditure on innovation.

The Welsh Government should:

- **Build on its Innovation Strategy, published earlier this year, to assess how its own policy levers can be used to incentivise small business investment and innovation, and apply our recommendations accordingly.**³²

30 Scottish Government, National innovation strategy 2023 to 2033, 2023, <https://www.gov.scot/publications/scotlands-national-innovation-strategy/documents/>

31 Department for the Economy, 10x Delivery Plan 2023/24, 2023, <https://www.economy-ni.gov.uk/publications/10x-delivery-plan-202324>

32 Welsh Government, Wales innovates: Creating a stronger, fairer, greener Wales, 2023, <https://www.gov.wales/wales-innovates-creating-stronger-fairer-greener-wales.html>

Such levers include:

- The link between further and higher education and the business ecosystem.
- Business rates relief and business premises policy (with a view to incentivising firms to update machinery and expand to larger premises).
- Public procurement.
- An Economic Development Strategy over specific areas (such as technology and manufacturing sectors) to promote growth and address time and cost pressures for SMEs.³³

³³ FSB Wales are due to publish a report with Swansea University on Manufacturing later this year, which will provide further analysis and evidence.

RESEARCH AND DEVELOPMENT

As outlined earlier, there is a fixation amongst policymakers of the need to focus R&D on a select few industries. A continuation of this approach will not lead to an increase in the rate of commercially viable inventions. Significant evidence indicates that the rate of invention is slowing down. Government and academics are not entrepreneurs, they do not have the same level of understanding of where there are gaps in the market and the viable new products that might fill consumer demand.

“The Government seems to think that invention comes only from universities and that turning inventions into products and taking them to market is much easier and less work than the initial invention step. Wrong on all counts.”

FSB member, Scientific research and development, South East England

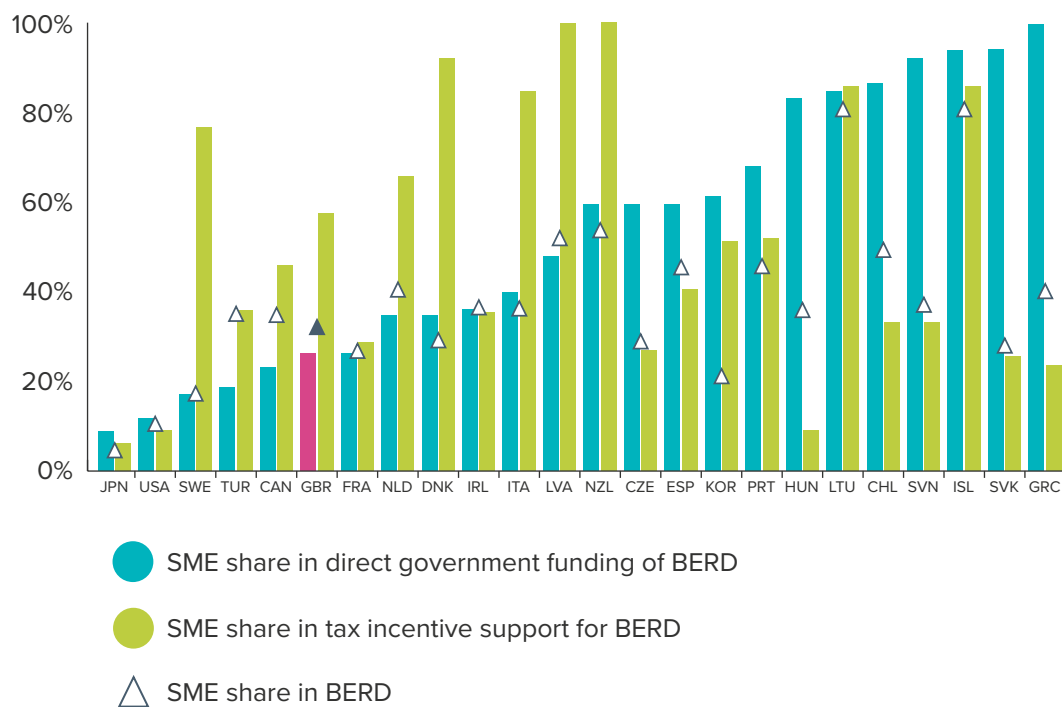
Reviewing the academic literature of policies that have proven to be effective in encouraging R&D, American economists found solid evidence that R&D tax credits have strong net benefits. Whereas they found little evidence on the effectiveness of mission-oriented policies, patent boxes, and IP reforms.³⁴

A predominantly state-led approach in addressing foreseeable problems such as climate change is logical. It is less logical to apply this to innovation policy more broadly, it results in less productivity gains and economic growth than might otherwise be achieved. More focus should be given on encouraging more firms to conduct R&D, to build on existing inventions and to work together in identifying gaps in the market and cross-sectoral innovation. Policymakers should focus on giving entrepreneurs the best landscape to bring new inventions to market rather than setting innovation priorities on a top-down basis.

34 Bloom, N., Van Reenen, J., and Williams, H. (2019) A Toolkit of Policies to Promote Innovation, *Journal of Economic Perspectives* (33:3), pp.163–184, <https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.33.3.163>

Figure 8: Percentage of government support for business R&D, 2017 or latest year

Source: OECD Economic Surveys: United Kingdom 2020, https://www.oecd-ilibrary.org/economics/oecd-economic-surveys-united-kingdom-2020_2f684241-en



The proportion of R&D fiscal support going to UK SMEs is much lower than other OECD countries (Figure 8). Since 2020, there have been two developments that mean the SME share of Business Enterprise Expenditure on R&D (BERD) is much higher and their share of financial support from the Government will be lower in the future.

In autumn 2022, the Office for National Statistics (ONS) updated their methodology on calculating R&D expenditure. The updated ONS BERD data, indicate that SMEs spent £24.3 billion in 2021 on R&D with a total business spend of £46.9 billion.³⁵ This is a large change in estimates with ONS' BERD data published in November 2021 estimating total business R&D spend in 2020 was £26.9 billion of which £19.8 billion (74%) was spent by businesses with more than 250 employees.

³⁵ ONS, Business Enterprise Research and Development, UK: 2021, 2022, <https://www.ons.gov.uk/releases/businessenterpriseresearchanddevelopmentuk2020>

“The UK is not good at scaling up innovative companies. This move on R&D Tax Credits makes it harder for us to grow the business and begin exporting beyond UK. We recognise that schemes need to be revised and resources conserved but let’s focus on what is successful and not on what is administratively simple. Differentiate on skills, not scale; expertise not enterprise-size.”

Eddie McGoldrick, Director of The Electric Storage Company,
Northern Ireland

The UK Government has committed to undo a policy that successfully ramped up the contribution provided by SMEs to R&D spending. Despite a slight change at the Budget 2023 from announcements made at the Autumn Statement 2022, the Government has dramatically cut R&D tax relief for small firms from April 2023.³⁶

R&D tax relief

The UK Government has cut the rate of R&D tax relief while major economies, such as France and the US, have boosted their rate of relief.³⁷ In a speech in January 2023, the Chancellor stated that *“if anyone is thinking of starting or investing in an innovation or technology-centred business, I want them to do it here [in the UK].”*³⁸ Yet a recent report found that 70 per cent of firms are planning to move R&D activity abroad, 36 per cent of whom say this is due to more favourable R&D tax credit schemes in other countries.³⁹

“[The changes to R&D tax relief mean] I will look to move my business out of the UK as the government is totally ineffective in supporting business. We have already setup a company in Singapore.”

FSB member, Computer programming and consultancy,
South East England

At the Autumn Statement 2022, the Chancellor announced that the rate of R&D tax relief claimed by small firms under the scheme specifically designed for them would be cut. The level of relief firms received through

36 HM Treasury, Autumn Statement 2022, 2022, <https://www.gov.uk/government/publications/autumn-statement-2022-documents>

37 International Accounting Bulletin, UK to lose R&D research top spot to France, 2023, <https://www.internationalaccountingbulletin.com/news/uk-to-lose-rd-research-top-spot-to-france/>

38 HM Treasury, Chancellor Jeremy Hunt’s speech at Bloomberg, 2023, <https://www.gov.uk/government/speeches/chancellor-jeremy-hunts-speech-at-bloomberg>

39 Ayming, UK Innovation Barometer, 2023, <https://www.ayming.co.uk/insights/whitepapers/uk-innovation-barometer/>

the Research and Development Expenditure Credit (RDEC) scheme (used by large businesses or SMEs conducting R&D for large businesses) would be increased but not at the same level of the savings made to the SME scheme.

This announcement was somewhat undone by the announcement at the Spring Budget 2023 that loss making SMEs which have a R&D intensity of 40 per cent or above will receive a higher rate of relief from April 2023 compared to other firms.⁴⁰ However, these loss-making firms with a 40 per cent R&D intensity will still receive a smaller tax credit from April 2023 compared to previously.

HM Treasury estimates that 20,000 SMEs will receive the higher rate of relief.⁴¹ In 2020-21, 38,910 loss making firms successfully applied for a tax credit under the SME R&D tax relief scheme.⁴² This equates 51 per cent of loss-making small firms or 25 per cent of all firms that successfully applied in 2020-21.

R&D tax credit and loss making businesses

Level of R&D tax credit received by loss making small business in 2022: £33.35 for every £100 of R&D investment.

Level of R&D tax credit received by loss making small business from April 2023: if R&D intensity is above 40 per cent, then they can claim £27 for every £100 of R&D investment, instead of £18.60 for non-R&D intensive loss makers.

One positive of R&D tax relief is that it encourages firms to undertake R&D for the first time. In the financial year ending March 2020, 22 per cent of those successfully applying for the SME scheme were first time claimants. This figure stood at 27 per cent in 2019.⁴³

Figure 9 outlines the impact of the changes announced to R&D tax relief, for those who recently successfully applied and for those aware of the relief.

40 HM Treasury, Spring Budget 2023, 2023, <https://www.gov.uk/government/publications/spring-budget-2023>

41 HM Treasury, Spring Budget 2023 Media Factsheet: Cutting & Simplifying Tax for Businesses to Invest and Grow, 2023, <https://www.gov.uk/government/publications/spring-budget-2023-factsheet-cutting-simplifying-tax-for-businesses-to-invest-and-grow/spring-budget-2023-media-factsheet-cutting-simplifying-tax-for-businesses-to-invest-and-grow#research--development>

42 HMRC, Research and Development Tax Credits Statistics: September 2022, 2022, <https://www.gov.uk/government/statistics/corporate-tax-research-and-development-tax-credit/research-and-development-tax-credits-statistics-september-2022>

43 HMRC, Corporate tax: Research and Development Tax Credits, 2022, <https://www.gov.uk/government/statistics/corporate-tax-research-and-development-tax-credit>

Figure 9: Impact of the R&D tax relief announcements at the Autumn Statement

Source: FSB innovation survey, 2023

Impact	Small businesses aware of R&D tax relief	Small businesses that claimed R&D tax relief in last three years
It will reduce the viability of my existing business	7%	20%
Less likely to invest as much in R&D	28%	64%
More likely to choose less risky R&D investments	8%	24%
More likely to invest in R&D	0%	1%
Need to secure additional external funding for R&D	8%	23%
Change existing plans for R&D	9%	22%
Make cuts to other budgets (e.g. training)	8%	25%
Make staff redundant or stop planned hiring	5%	12%
Other	3%	3%
Nothing – I would not have invested in R&D anyway	36%	2%
Nothing – I will continue to invest as much in R&D regardless	20%	21%
Don't know / Not sure	9%	3%

FSB research shows the impact of R&D tax relief has been huge for small businesses. Only two per cent of firms say that it has had no impact. The majority of firms (55%) say that they increased investment in R&D and a substantial number of firms say that they had either decided to increase investment in future projects or are undertaking projects that would not have happened otherwise.

Figure 10: The impact of successfully claiming R&D Tax Relief/Credit (only asked to those who had successfully claimed R&D tax relief in the past three years)

Source: FSB innovation survey, 2023

Impact	Response
Improved cashflow for my business	64%
Increased investment in R&D	55%
Increased investment in future projects	41%
Undertaking project(s) that wouldn't have happened otherwise	35%
Hired additional staff	14%
Easier to secure finance	2%
Other	2%
Don't know / Not sure	4%
No impact on my business or R&D investment	2%

If the Government's aim is indeed for innovative businesses to grow, then R&D tax relief policy must be viewed as a success. The small business contribution to R&D expenditure is now higher than large businesses or universities.⁴⁴

Fraud and error

Part of the Government's stated rationale for lowering the rates of tax relief for the SME scheme is that there is a large amount of fraud and error in the SME scheme. In July 2023, HMRC estimated that for 2020 to 2021, the levels of non-compliance in the SME scheme were 24.4 per cent of the total value claimed. They go on to say that they found fraud indicators in less than five per cent of the total value claimed.⁴⁵ With a scheme as complex as the R&D tax relief, it is not unexpected that there is a significant amount of error. However, the broader point here is that the solution to addressing fraud and error should not require punishing innovative small businesses, but rather to focus on prevention.

FSB is concerned that the high complexity of the scheme has led claimants

44 ONS, Business Enterprise Research and Development, UK: 2021, 2022, <https://www.ons.gov.uk/releases/businessenterpriseresearchanddevelopmentuk2020>

45 HMRC, Compliance approach to Research and Development tax reliefs, 2023, <https://www.gov.uk/government/publications/compliance-approach-to-research-and-development-tax-reliefs>

to rely on intermediaries which specialise in R&D tax relief claims. Previous FSB research found that of those SMEs that applied successfully for SME R&D tax relief, 84 per cent said that they applied via a third party (e.g. an accountant, agency, R&D tax credit specialist).⁴⁶ This compares to nine per cent who applied themselves. We estimate that on average, intermediaries take 16 per cent of the resultant tax savings as payment for this service. Therefore in 2019-20, of the £4.4bn spent on the SME R&D tax relief scheme, £641 million went to intermediaries. This is money that could be used by these firms to fund even more R&D activity.

Due to concerns around fraud, HMRC has ramped up its clampdown efforts. However, numerous FSB members have highlighted the aggressive, scattergun and inconsistent approach taken by HMRC on compliance, sometimes to historic claims that had previously been agreed upon. A recent House of Lords Economic Affairs Committee inquiry on the matter heard from many witnesses issuing the same concern, concluding that:

“HMRC should address the criticisms witnesses made of the way its compliance activities are conducted. These included an inconsistency of approach, failing to take account of information already received from claimants when making enquiries, poorly focused questions and a reluctance to engage constructively with taxpayers and their agents.”⁴⁷

Merging the schemes

The Government also announced at the Autumn Statement 2022 that the RDEC scheme and the SME scheme will eventually be merged, subject to consultation. Merging these two schemes together is highly complex as there are many differences between them. The Treasury has set itself a highly unrealistic timeline that the schemes will be merged by April 2024. This is both unrealistic in terms of delivery but also to give notice to firms that use R&D tax relief of the details of the new scheme.

Businesses often set their R&D plans over several years and require certainty if they want to make R&D investment. The RDEC and SME scheme have different rules on claiming R&D tax relief when R&D is outsourced to a third party. We hope that if the schemes are merged, SMEs will be able to continue to claim for subcontracted R&D.

SMEs often subcontract at least part of their R&D activity. It is important that it is not just R&D intensive firms who are eligible for tax relief, but tax relief is available as an incentive to firms who are undecided whether to conduct

46 FSB, A Duty to Reform: Making tax work for small businesses in a digital world, 2021, <https://www.fsb.org.uk/resource-report/a-duty-to-reform.html>

47 The House of Lords Economic Affairs Finance Bill Sub-Committee, Research and development tax relief and expenditure credit, 2023, <https://committees.parliament.uk/publications/33732/documents/184361/default/>

R&D. The latter are unlikely to have huge R&D teams and will outsource much of the work. Maintaining in-house R&D services can be a costly affair for many enterprises, especially SMEs.

Encouraging synergy and business interaction

Enabling more synergy between businesses in R&D is vitally important. For all the focus on collaboration between universities and businesses, if more effort was paid instead to encouraging cross-sectoral collaboration between businesses, we are likely to see positive impact on the level of invention.

A celebrated example of the outcome of synergy leading to invention is the wheelee suitcase. This is the right combination of two basic inventions – the wheel and the suitcase. Or even the example of the smartphone, which involves the combination of several (more complex) inventions. Several economists argue that it is synergy, i.e. encouraging more entrepreneurs to identify these novel combinations, rather than total R&D spend that matters most when it comes to invention.⁴⁸

“My wife and I set up our business several years ago as a cross-fertilization of her experience in fintech and mine in the energy sector to enable more small businesses to go green...why on earth would I want to involve a university in my business, we’d have to stump up huge amounts of cash and IP for semi-regular meetings with an academic without a commercial bone in their body.”

Eddie McGoldrick, Director of The Electric Storage Company,
Northern Ireland

Of course, spending on R&D and early research remains important. To go back to the smartphone, as Mariana Mazzucato identified nearly all the individual components of an iPhone were developed by research from the public sector.⁴⁹ Yet it took an entrepreneur to identify this and develop synergies to bring to market.

Our qualitative research suggests there is a sense that government departments do not want to give grants to consortia of small businesses. This is a shame as the public sector, not only could be getting better return on investment for their grants but should be using tools at its disposal to encourage more businesses to work together. The same logic could be applied to public procurement.

48 Haskal and Westlake, *Restarting the Future*, pp. 123-124

49 Mazzucato, *The Entrepreneurial State*, p.6

“We work with a whole network of specialist consultants and colleagues. I don’t need a data scientist every day. I can’t afford to employ a data scientist full time. I can’t afford to employ somebody in the Netherlands full time. But over the year we’re employing a lot of different people with different skills inside and outside the UK, and I do agree that I don’t think the Government understands. For example, we will put groups of us together to pitch for government projects. We very, very rarely win them. They always appear to go to the big agencies.”

Liz Montgomery, Owner and Director at Sharp Research Ltd, Essex

“Just because you don’t directly employ lots of people doesn’t mean you’re not working with and sharing work with a lot of people also working independently or with small numbers of employees. The majority of independent experts that I work with have decades of valuable experience but either minimal or no employees. I really don’t think Government gets that.”

Ruth Dolby, Director at Food Science Fusion, East Midlands

Recommendations

UK Government should:

- Set itself a target that half of all direct government BERD funding should be directed to SMEs. Figure 8 outlines that compared to other OECD countries, direct R&D support is predominantly accessed by large firms. It is important that small innovative businesses also benefit from this support. The OECD highlight that a number of countries, such as Australia, Estonia, Ireland and Luxembourg, have introduced direct SME-targeted funding, which could provide good examples to consider.⁵⁰ As they are always over-subscribed, expansion of Innovate UK’s Smart Grants should also be considered.

HM Treasury should:

- Reconsider merging the two R&D tax relief schemes - the RDEC and the SME scheme. However, if they are merged, HM Treasury should:

50 OECD, OECD Economic Surveys: United Kingdom, 2020, https://www.oecd-ilibrary.org/economics/oecd-economic-surveys-united-kingdom-2020_2f684241-en

- Have a higher rate of tax relief for SMEs (defined as having less than 250 employees) instead of a higher rate of relief for firms with R&D intensity of 40 per cent. Other countries have a similar arrangement, including Canada, where R&D tax relief scheme for SMEs has a higher rate than that for large businesses.⁵¹
- Maintain the current rules from the SME scheme when a business commissions another organisation to conduct R&D on its behalf.
- Postpone the timelines, for Treasury to properly develop the new scheme in a consultative fashion. After publication of its final plans, several years should be given before it is implemented. This is to give small businesses time to understand the new scheme.
- **If HM Treasury does merge the two schemes together, the level of R&D intensity at which small businesses claim a higher rate of relief should be decreased to 10 per cent intensity.** A similar version of the scheme in Australia has set a higher rate of relief for those with two per cent or more R&D intensity. A higher rate should also be made available for firms claiming who are not loss making. With countries such as France and the US increasing R&D tax relief, it is important that the UK remains competitive.
- **Monitor the impact of the changes it has made to R&D tax relief, including the changes in rates, that were announced in 2022 and 2023 fiscal events. HM Treasury should also publicly publish a review to assess the impact of the changes on levels of R&D conducted.** FSB is highly concerned over the impact of changes to R&D tax relief as announced in 2022. Our research shows the significant impact it has had, with only two per cent of the firms that claimed in the last three years saying it had no positive impact. The majority of these firms (55%) say that they increased investment in R&D and a substantial number (35%) are undertaking projects that would not have happened otherwise. Almost two-thirds (64%) of small businesses say that changes to R&D tax relief means that they are less likely to invest in R&D tax relief.

51 OECD, R&D Tax Incentives: Canada, 2021, <https://www.oecd.org/sti/rd-tax-stats-canada.pdf>

HMRC should:

- **Review its compliance activities and, while ensuring that it accepts genuine cases for relief, it should not be heavy-handed, aggressive or inconsistent.** We also agree with the House of Lords Economic Affairs Committee that HMRC needs to review its current training programme for its R&D teams to ensure it is providing officers with the skills and knowledge they need to work effectively and appropriately with businesses on R&D relief.
- **Ensure that all intermediaries that are named on R&D tax credit claims adhere to a code of practice.** Generally speaking, intermediaries are helpful in assisting small businesses with making their claims. However, there has been a proliferation of bad actors.
- **Put a cap on how much intermediaries can charge at 25 per cent of the total amount of the tax reduction.** Many of these companies operate on a ‘no win, no fee’ basis and take a large commission from the amount of tax relief secured. At least one in ten intermediaries charge at least 25 per cent of the tax reduction, which reduces the amount a small business spends on R&D.

The Department for Science, Innovation and Technology should:

- **Devolve a high number of current Innovate UK grants to national governments and in England to combined authorities.** Innovate UK should be focused on co-ordinating activity and providing grants where they can provide justification of why they should be set at a UK level. In English regions currently without combined authorities, Innovate UK would keep responsibility. If more innovation grants are set at a local level, this would enable government to encourage more collaboration and synergy between firms. This would also enable more alignment between the devolved nations/English regions’ priorities and innovation spend. Co-ordination at a national level is important, in the long-term, DSIT could consider taking this role back from Innovate UK.
- **Establish specific innovation grants, at a national or a regional level, that are only for cross-sectoral businesses wanting to develop new products or build on pre-existing products.** For example, this could be a Innovate UK grant or if more of

Innovate UK's functions are devolved, a grant set by a national government or combined authority.

- **When R&D and innovation grants are awarded to large businesses, they should be actively encouraged to diffuse innovation through to small businesses in their supply chain.** Compared to other OECD countries, direct financial support for innovation is at a higher level' between 'directed' and 'towards' larger businesses. An analysis of Innovate UK grants found that 19 per cent of their grant funding has gone to five large businesses. As well as a more even distribution of funding, there should be a stipulation that if large businesses benefit from this grant funding, it should benefit more small businesses.

The Cabinet Office should:

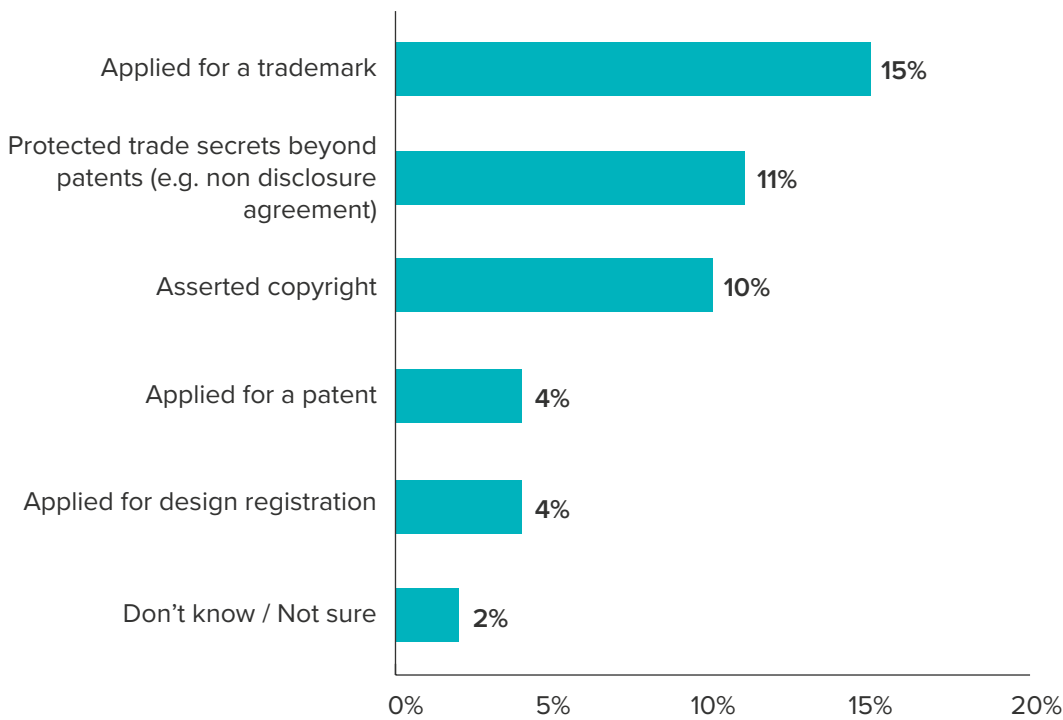
- **Use public sector procurement to encourage joint bids from small businesses, to encourage more collaboration between businesses and the cross-fertilization of ideas.** Some procurement opportunities could be awarded extra points when bids from more than one business. FSB would like to see Dynamic Purchasing Systems (DPS) be used for the vast majority of public sector procurement instead of framework agreements. Consideration could be given to how DPS could encourage more joint-bids for procurement opportunities.

INTELLECTUAL PROPERTY

FSB research suggests the majority of small firms have never applied for, or asserted, intellectual property rights. Seven in ten firms (70%) say that they had never successfully applied for IP or asserted copyright. Though there does seem to be a relatively high uptake of those using trademarks.

Figure 11: Percentage of small businesses who have ever successfully applied for IP

Source: FSB innovation survey, 2023



Small firms in manufacturing sector are much more likely to have successfully applied for a patent (15%), a trademark (27%) or applied for design registration (7%). In contrast, 90 per cent of those in construction have not used IP.

There has been no increase in small businesses using patents since our research in 2018. Even those small firms that had claimed R&D tax relief were unlikely to have applied successfully for a patent; 20 per cent of those who had successfully applied for R&D tax relief had successfully applied for a patent.

Seventy-three per cent of small business owners with a disability and 74 per cent of female business owners have never successfully applied for IP or asserted copyright. Only two per cent of those with a disability and two per cent of female business owners have ever successfully applied for a patent. Additionally, only five per cent female business owners have ever successfully applied protected trade secrets in ways beyond patents.

The main barriers for small businesses accessing IP are related to a lack

of awareness, the perception that registration procedures are complex and costly, and the high cost of enforcement of those rights. Updating patents also incurs significant additional costs. Given these factors, small businesses are at a competitive disadvantage when it comes to patents compared to large firms.

A balanced IP regime

There is a need to achieve a balance in IP laws. If it is too hard, this deters businesses from building on the IP of others. If the IP regime is too soft, then this deters would-be inventors from investing in R&D and enables others to use new ideas and products without those developing this from benefiting.

At the same time as limited IP use amongst small firms, of those thinking about developing entirely new products in the next 12 months, 11 per cent say that “concern about intellectual property” was a main barrier to them doing so. This can be contrasted with the seven per cent of those who recently introduced new products who say that they had ever successfully applied for a patent.

Patents are an important incentive for those developing new inventions and exist to reward those willing to develop new ideas. However, they also grant companies monopolies for twenty years, discourage others from building on research and inherently favour large businesses.

The ‘patent box’ tries to encourage companies to make profits from their patents by reducing the corporation tax paid on those profits. HMRC finds that the overwhelming beneficiaries of this £1.2 billion per year policy are large businesses. In the tax year of 2019 to 2020, large companies claimed 95 per cent of the relief and in the tax year of 2020 to 2021, it was projected that large companies will continue to claim 94 per cent of the relief.⁵²

Academic evidence on the impact of patent boxes indicates that it does little to encourage domestic R&D activity. A report from the European Commission examined the effect of patent boxes on 2,000 companies in 12 countries from 2000 to 2011.⁵³ It found that patent boxes benefited companies financially but had little impact on the level of R&D. A 2015 report from Australia’s Office of the Chief Economist came to a similar conclusion. Introducing a patent box might lead to more patents being filed in Australia, it said, but they would mostly be ones derived from R&D conducted overseas.⁵⁴

52 HMRC, Patent Box relief statistics: September 2022, 2022, <https://www.gov.uk/government/statistics/patent-box-reliefs-statistics/patent-box-relief-statistics-september-2022>

53 European Commission Joint Research Centre, Patent Boxes Design, Patents Location and Local R&D, 2015, https://joint-research-centre.ec.europa.eu/system/files/2015-08/JRC96080_Patent_boxes.pdf

54 Australian Government Office of the Chief Economist, Patent Box Policies, 2015, https://www.industry.gov.au/sites/default/files/May%202018/document/pdf/patent_box_policies.pdf?acsf_files_redirect

Recommendations

HM Treasury should:

- **Abolish the Patent Box tax relief scheme and focus this funding elsewhere within innovation policy.** Government spends about £1billion per year on patent tax relief, of which around 95 per cent goes to larger companies. A substantial body of evidence demonstrates that the Patent Box has little to no impact on R&D being conducted within the country.

The Intellectual Property Office (IPO) should:

- **Give accelerated handling to patent applications from first time applicants.** This could be based on the Green Channel that the IPO currently operates, in which the applicant's patent request receives accelerated handling if they can explain why the technology is environmentally friendly.
- **The additional money that would be saved through scrapping the Patent Box could be put towards partially covering the legal fees of SMEs which are applying for a patent for the first time.** A small business that hires a patent attorney to make the initial application should be reimbursed by up to £4,000 by Government when the IPO has received their first application.
- **Conduct a review of the impact of patent hoarding on innovation.** To deter companies holding patents without any intention of marketing the inventions covered by their patents and/or holding a patent solely for the purposes of stifling competition (so-called 'patent trolls'). This review should evaluate the impact on small businesses ability to innovate. It should also consider what financial deterrents could be put in place to prevent 'patent trolls' and whether additional financial incentives for SMEs would encourage more to apply for patents.
- **Conduct a review on ensuring that small businesses have clarity up front on IP ownership before conducting joint R&D activity with universities.** Small businesses are often put off from working in collaboration with universities due to concerns around IP ownership. Ensuring more clarity on this issue before small businesses enter into agreements should encourage more joint working on R&D.

TECH ADOPTION

It is quite well documented that the adoption of technology by small businesses would lead to large productivity gains and consequently increased economic growth.⁵⁵ Our research shows there has been a strong increase in small businesses using technology since 2018. The vast majority (83%) of small firms now have a company website compared to only half (51%) in 2018.⁵⁶ There has also been a large increase in the number of companies using cloud storage, up from one third (33%) in 2018 to two thirds (67%). It is also positive to see an increase in firms that are using bespoke software, up from 29 per cent in 2018 to 35 per cent.

“Plenty of businesses are ripe for digital transformation but it’s really difficult for them to do so because they ultimately have to dedicate time, resource and ultimately cost to it. It’s not covered by tax relief or any other financial incentive which could help the business cover those costs.”

Richard Askew, Managing Director of Askew Brook, Yorkshire

Figure 12: Current tech uptake from small businesses

Source: FSB innovation survey, 2023

Tech adoption	Percentage
Company website	83%
Digital accountancy (e.g. QuickBooks, Xero)	67%
Cloud storage (e.g. Dropbox, Google Drive)	67%
Cyber security products (e.g. antivirus software)	65%
Company social media	62%
Bespoke software or applications	35%
Data analytics tools	33%
Cloud computing platforms (e.g. Google Cloud, Amazon Web Services, Microsoft Azure)	29%
Customer Relationship Management (CRM) software	24%
eCommerce products	19%
Online project management tools	19%
Enterprise resource planning software	4%
Machine learning tools	2%
Other	6%
My business does not use any of these technologies or services	2%

55 For instance: The Entrepreneurs Network, Upgrade: Closing the digital gap and lifting productivity for SMEs, 2020, <https://www.tenentrepreneurs.org/research/upgrade>

56 FSB, Spotlight on Innovation: How Government can unlock small business productivity, 2018, p.59, <https://www.fsb.org.uk/resources-page/innovation-report-final-pdf.html>

Previous FSB research found only ten per cent of small businesses have cyber insurance.⁵⁷ Our recent data further highlights the number of smaller firms exposed to cyber risks, with just over a third (35%) of small businesses stating they do not have cyber security products. Those who had not innovated in the past three years are also less likely to have adopted the technology listed in Figure 12. For instance, only 70 per cent of these firms have a company website, only 54 per cent have digital accountancy software, and 25 per cent have bespoke software.

There is a variation in the adoption of different forms of technology within different sectors. Small businesses in construction (85%), information and communication (85%) sectors and carrying out professional, scientific and technical activities (74%) are more likely to use cloud storage services compared to 67 per cent of all small businesses. Small businesses in accommodation and food services (27%) and construction (23%) sectors are the least likely to use data analytics tools in comparison to 33 per cent of all small businesses.

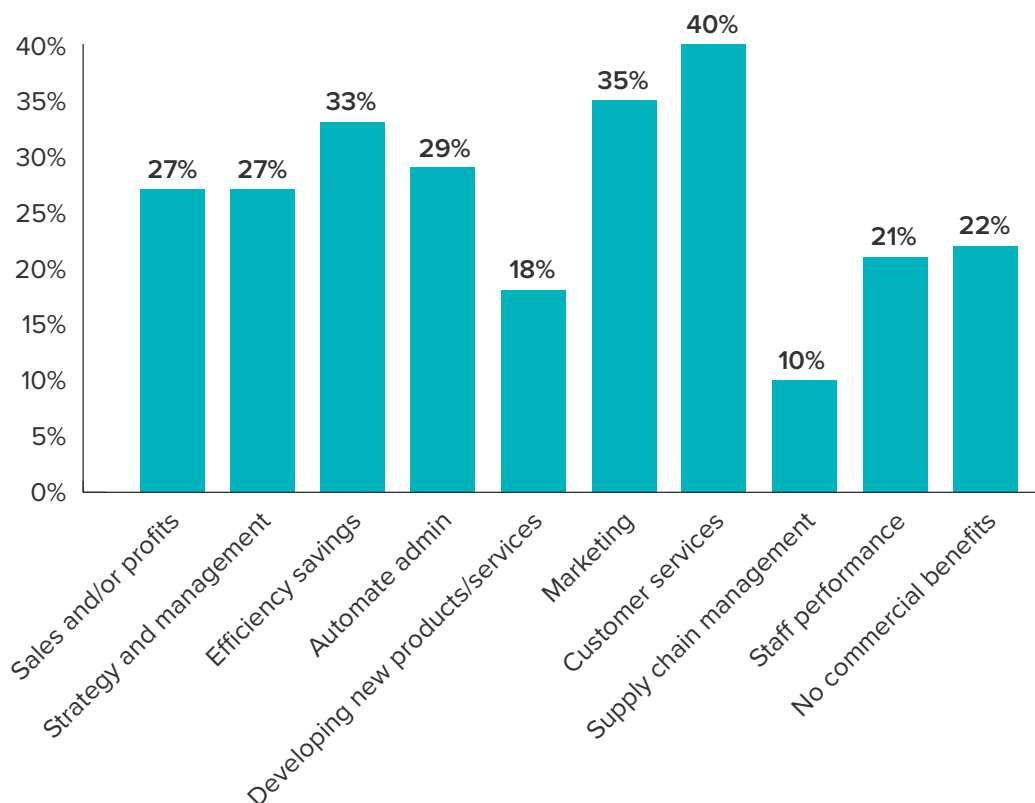
Benefits of technology and data

Only 22 per cent of small businesses report to have made no commercial benefits from using data. Figure 13 shows that using data can have a wide range of commercial benefits for small businesses, including improved marketing and customer services.

57 FSB, Paying a premium? Reforming the insurance market to work for small firms, 2022, p.41, <https://www.fsb.org.uk/resource-report/paying-a-premium.html>

Figure 13: Commercial benefits of using data for small businesses

Source: FSB innovation survey, 2023



“There’s so much out there in terms of technology, small business owners find it hard to pick the candy out of the candy shop. They honestly don’t know where to begin. It is a scary landscape and there is zero trust in any advice or apps.

“It is fundamental to have the right products and the right software and the right skills. Small businesses need to think beyond just purchasing the product to where the product fits within their business. They need to think not just of immediate cost but their skills requirements.”

Ruth Partington, Founder and CEO of Empower Translate, Wales

Small businesses who have adopted certain types of technologies are more likely to report that they have found commercial benefits from using data. Small businesses that use cloud storage (67%) are more likely than average to say that they have gained commercial benefits from using data; 15 per cent of small businesses with cloud storage say that using data provides no commercial benefits (compared to 22 per cent on average). However, this is not on the same level as small businesses who have adopted other technology that makes use of the data they store.

Small businesses that use CRM systems and online project management

tools regard them as particularly worthwhile investments, with only five and six per cent of firms respectively stating that using data provides no commercial benefits (compared to 22 per cent of all forms of technology used by small businesses). Those small businesses with cloud computing platforms and data analytics software are also likely to see a wide range of commercial benefits.

Therefore, there are a considerable number of small businesses who are using cloud storage to capture their data but do not yet have the technology to maximise the commercial benefits that using that data can bring.

An additional trend we find is that small firms that innovated in the last three years are more likely to say that they have used data for commercial benefits. Of those who have made innovative changes to their business in the last three years, only 12 per cent say that the use of data had not brought any commercial benefits. This is compared to two in five (40%) of those who have not innovated.

In particular, small businesses that introduced new or significantly improved processes have used data for commercial benefits. 52 per cent of these businesses say that they used data to support their strategy, planning and management and 58 per cent say that using data had led to improved marketing.

From this, we can conclude that data is vital to innovation but particularly for those small businesses looking to make innovative changes to their processes.

“There’s some real gold behind small businesses using data but they often don’t know how to extract it.”

Yvette Lamidey, Executive coach and mentor, Buckinghamshire

Artificial Intelligence

There is no single, universally agreed definition of artificial intelligence (AI). AI is complex, and there are several different types of AI, so small businesses may interpret what constitutes AI differently.

The development of AI tools requires large datasets as well as necessary software and hardware which can often be highly expensive for small firms. They may outsource the development of outputs that require AI systems to others who already have large datasets and the necessary hardware and software. It is therefore an open question whether AI puts SMEs at a competitive disadvantage and who owns the output developed by an AI system.

FSB’s qualitative research identified the potential of ChatGPT and other

similar tools to support them in marketing and copywriting.

“We’ve recently started using ChatGPT as a tool that can work up initial drafts. It requires careful oversight to be effective for our business but it’s a huge time-saver.”

Steve Vallender, CEO of Bursali Towels, Cardiff

Considering labour shortages and the decline in productivity, AI tools should be embraced rather than feared. However, concerns about the potential risks posed by AI need to be investigated to ensure algorithms encourage inclusive growth rather than counter against it. Hence the need for adequate legislation to be implemented to protect entrepreneurs and their customers.

Help to Grow: Digital

The Help to Grow programme which was announced at the Budget in 2021 is designed to boost the productivity of smaller firms.⁵⁸ There were two strands to the programme. Help to Grow: Management offers MBA-style management training to some SMEs and was opened in August 2021. Help to Grow: Digital offered some SMEs with discounted software and expert advice on how to best utilise it. This was opened in January 2022 and closed in February 2023, with the Government stating that less than 1,000 businesses used the scheme.⁵⁹

“HtG: Digital tried to shoehorn all small businesses into one route of adoption. Everyone will have a unique requirement and consider themselves to be unique.”

Ruth Partington, Founder and CEO of Empower Translate, Wales

Initially both schemes were only open to business with between five and 249 employees, though Help to Grow: Digital was subsequently expanded to all SMEs with employees. This scheme offered discount on technology in three areas: CRM; accountancy; and e-Commerce (though not initially). This was based on solid evidence that these technologies enhanced productivity. However, within these three categories, there were only some technology products available and FSB members consistently fed back that these products were not the ones most small businesses were using.

⁵⁸ HM Treasury, Budget 2021, 2021, <https://www.gov.uk/government/publications/budget-2021-documents>

⁵⁹ Department for Business, Energy & Industrial Strategy, Final opportunity for businesses to access Help to Grow: Digital scheme, 2022, <https://www.gov.uk/government/news/final-opportunity-for-businesses-to-access-help-to-grow-digital-scheme>

There was plenty of evidence that firms smaller than this would benefit from the scheme.⁶⁰ Additionally, businesses of this size would presumably make up a lot of the so-called ‘long tail’ of unproductive firms, who were the target audience.

Nineteen per cent of small businesses are aware of the scheme. This is higher than Help to Grow: Management, which 13 per cent of small businesses are aware of. It is lower than a similar scheme in Scotland called Digital Boost, which 36 per cent of small businesses based in Scotland are aware of.

However, the main problems with the scheme seem less related to the eligibility and awareness and more about the products available. Figure 14 shows 60 per cent of small businesses say the technology the scheme offered was not what their business needed. This was especially true with the specific products on offer.

Figure 14: Reason for not using Help to Grow: Digital for small businesses aware of the scheme but did not use it

Source: FSB innovation survey, 2023

Reason for not using Help to Grow: Digital	Percentage
The specific products aren't the right ones for me	34%
I've already adopted the technology that is available in the scheme	21%
The type of technology isn't relevant for my business	20%
I wasn't aware that I was able to use the scheme	16%
I am self-employed and not eligible	14%
Not enough of a discount	7%
I don't think my staff have the skills to successfully use the technology available	2%
Other	10%
Don't know / Not sure	7%

While cost certainly can be a factor in adopting and upgrading technology, especially for certain sectors and products, the products offered through Help to Grow do not necessarily have expensive upfront costs. This can be reflected by only seven per cent of firms saying that they thought the discount offered through the scheme was not enough.

⁶⁰ Coadec, Making the most of Help to Grow: Ensuring that small businesses get the help they need, 2021, https://coadec.com/wp-content/uploads/2021/05/Help-to-Grow_-Report.pdf

“As a very small micro business we need grants that are small enough and not necessarily match funded to implement some of the equipment or software or training that we would make best use of. For a small business like ours £100 - £500 to spend on focussed training or equipment makes the difference between adopting it or not. Also, a lot of social media training is entry-level. It is harder to find someone who has the technical ability to make it work.”

FSB Member, Retail, West Midlands

Recommendations

UK Government should:

- **Commit to ensuring that the software providers of Making Tax Digital (MTD) do not increase prices in a rent-seeking manner.** MTD has already created a significant cost burden to small businesses that have adopted it. We urge the Government to commit to ensuring a competitive market exists within MTD-software such that rent-seeking behaviour is minimised, and prices remain competitive.

The Department for Science, Innovation and Technology should:

- **Introduce digital audit vouchers for small businesses to enable more small firms to think about how they are using data and technology, vouchers should be introduced to enable them to audit their tech needs and what technology they should consider adopting.** To help reduce the partiality of the firms conducting the audit, the auditing organisation would need to reimburse the voucher cost if the small business ends up buying its products. This scheme could be piloted before full roll out.
- **Implement a UK-wide DigitalBoost Development Grant Fund, based on the example of the successful Scottish scheme.** This fund would give SMEs funding to enable them to introduce new digital but on the proviso that they have a tech adoption plan in place. As with the scheme in Scotland, a UK version should also offer a ‘Digital Health Check’ for small businesses and offer one to one advice.

The Competition and Market Authority (CMA) should:

- **Review and enforce data interoperability between different software that require large data input from SMEs.** Given the importance of data for innovation, encouraging more firms to use

the latest products that bring most value for them is crucial. This is not achievable if small businesses are unable to change software products as it is too difficult for them to move their data and they are effectively locked into specific platforms at ever increasing prices that eat into their margins. The CMA should enable small businesses to switch between different software products, such as cloud computing and accountancy software, without significant difficulties.

The Intellectual Property Office should:

- **Request that the Law Commission to conduct a review into the use of Artificial Intelligence and how it relates Intellectual Property.** The review should specifically examine two interconnected issues and suggest solutions. Firstly, whether current IP rights are sufficient to cover the outputs generated from AI systems. Secondly, whether small businesses are likely to be increasingly unable to profit from AI-generated outputs that they have commissioned due to imbalanced contracts. The review should look to clarify the status and ownership of the output of AI systems including the possibility of creating a new IP right as well as considering how best to counteract restrictive contractual terms relating to AI system usage.

Local governments (in England) should:

- **Encourage community collaboration by connecting digital entrepreneurs moving into a geographic area to work with the local microbusinesses and sole traders who want to adopt digital solutions.** A pilot approach, outlined in a report from the Good Things Foundation, could be a ‘support-for-rent’ model in Hackney, that encourages digitally-capable entrepreneurs to provide support and advice to local businesses as part-payment for being in a local co-working space.⁶¹

⁶¹ Good Things Foundation, Improving digital skills for small and micro businesses, 2019, <https://www.goodthingsfoundation.org/insights/improving-digital-skills-for-small-and-micro-businesses/>

GREEN ADOPTION

Encouraging small firms to adopt innovation is not only crucial for productivity but also in enabling them to reduce carbon emissions. Previous FSB research found the majority of small businesses (56%) believe that the planet is facing a climate crisis.⁶² The majority of small businesses have taken actions to reduce their carbon footprint, in a range of areas including energy, waste and transport. However, only 36 per cent of small businesses have a plan to combat climate change, suggesting that actions are being taken on an ad hoc basis. 28 per cent of small businesses say it will be extremely difficult to transition to a net zero economy.

“No business is going to lose margin just to go green...First and foremost, you’ve got to have a viable business. If you’ve got a viable business, then you can start to bring in the other facets and considerations.”

Mark Knight, RetroMarques, West Midlands

FSB’s, *Credit Where’s Credit Due* report found 22 percent of all small businesses say they plan to invest in decarbonisation over the next 24 months.⁶³ 17 per cent of small businesses who introduced innovation in the past three years report one of their main reasons for doing so is to reduce environmental impacts.

Cogo

In early 2023, FSB conducted a series of roundtables with FSB members and carbon management solutions provider Cogo.⁶⁴ Attendees highlighted the importance of minimising their impact on the climate, but also their lack of time, expertise, and resources to get started. In contrast, the most environmentally conscious firms highlighted that they allocated significant time to develop their knowledge of how to make their company more sustainable. Some referenced Growth Hubs as a means to achieve this.

Access to finance was a significant barrier for all attendees and the cost of doing business was delaying small businesses in taking necessary action in making the transition. Several companies used their personal savings though one exception was a special grant from the Scottish Government. Lack of sufficient funding also affected the level of investment currently possible.

62 FSB, *Accelerating Progress: Empowering Small Businesses on the journey to net zero*, 2021, p.11, <https://www.fsb.org.uk/resource-report/accelerating-progress.html>

63 FSB, *Credit Where Credit’s Due: Small businesses and the need for external finance for investment and growth*, 2022, p.7, <https://www.fsb.org.uk/resource-report/credit-where-credit-s-due.html>

64 More information about Cogo can be found on their website: <https://www.cogo.co/>

“The plans are always there, and I think it’s a case of delaying rather than not doing. Obviously, it’s also being realistic because of the current rate of inflation and overall increased running costs, which are impacting on everybody. I would have preferred to have replaced our old van with a fully electric vehicle, but I can’t afford that, and I don’t have any access to any funding that could help with that.”

Di Symes, That’s Pawfect, West Midlands

Other barriers identified at the roundtable discussions included renting a premise rather than owning their premises. This meant that small businesses were often reliant on their landlords’ efforts to boost their sustainability. The lack of a comprehensive EV charging infrastructure was also identified as a significant barrier, particularly to rural-based firms. Additionally, the different terminologies in this space were deemed as confusing and that more clarity is required. Overall, the terms “sustainability” and “environmentally friendly” over other terms seemed to have been the preferred options for attendees.

This qualitative evidence echoes FSB research from 2021, which found that the key barriers for small businesses not introducing an energy efficient solution were that energy was not a significant cost (29%), or the return on investment took too long (24%), and that their landlord does not allow the installation of energy efficient solutions (20%). The report also found that three in ten (28%) of small businesses say a business rates discount would encourage them to improve energy efficiency.⁶⁵ The business rates system should be used to encourage rather than dissuade small businesses to invest in becoming more energy efficient.

Two developments have taken place since 2021: a large increase in energy costs and a large increase in the cost of finance due to interest rate rises. Therefore, just as there might be a window of opportunity to encourage more firms to adopt energy efficiency solutions, there is a lack of available finance for them to fund it.

65 FSB, Accelerating Progress: Empowering Small Businesses on the journey to net zero, 2021, <https://www.fsb.org.uk/resource-report/accelerating-progress.html>

Recommendations

UK Government should:

- **Review the law on commercial tenancies to prevent commercial leases from blocking low-carbon improvements.** Tenants in commercial properties should have the primary decision-making power with regards to their choice of energy supply and installation of smart meters. Landlord and tenant law should be updated to preclude overly restrictive lease clauses which allow commercial landlords to unreasonably stop a tenant switching energy supplies, installing smart meters, or installing other reasonable energy efficiency improvements.

HM Treasury should:

- **Introduce a VAT rebate investment scheme to incentivise investment into green adoption by reducing the cost barriers.** A VAT rebate investment scheme whereby small businesses can reclaim 150 per cent of the VAT on eligible purchases as opposed to the current 100 per cent reclaim i.e. a 50 per cent VAT tax credit. Given that VAT reclaims can be done quarterly, this scheme would provide cashflow to businesses quickly and help them implement green investments which can be costly.
- **Broaden the eligibility of Green Reliefs for Business Rates to include not just plant and machinery and low-carbon heat networks but also for businesses who make their property more energy efficient (for example, insulation or retrofitting).** FSB's *Accelerating Progress* report recommended green reliefs for business rates so welcomes this initiative. However, green reliefs could go further so that they are applicable to a wider range of small businesses.

The Department for Energy Security and Net Zero should:

- **Introduce a "Help to Green" scheme to boost SME investment in net zero.** FSB welcomed news that Government will pilot a new audit and grant scheme, which will enable small businesses to implement measures to become more energy efficient. The scheme would include an online hub of practical information on how to reduce energy usage and environmental impact and a voucher/grant scheme, with a value of up to £5,000 a time, which would make a grant contribution to investing in low emission transport solutions, sustainable manufacturing, energy efficiency or microgeneration.

Local governments (in England) should:

- **Look to use the business rates system to encourage businesses to become more sustainable.** For example, the London Borough of Sutton is piloting a Green Enterprise Partnership scheme, which provides discretionary business rates discounts to local businesses for a period of up to 2 years.⁶⁶ Under this scheme businesses contribute 30 per cent to be part of the partnership, effectively reducing their final business rates bill by 70 per cent. Businesses on the scheme will access discounts as they progress through a 4-step certification scheme.

⁶⁶ London Borough of Sutton, The Green Enterprise Partnership, accessed July 2023, <https://www.sutton.gov.uk/w/gep>

ADOPTING INNOVATION AND BUSINESS SUPPORT

The diffusion and adoption of innovation needs to be carefully considered and brought forward. As the leading academic on diffusion of innovation put it:

*“Getting a new idea adopted, even when it has obvious advantages, is difficult. Many innovations require a lengthy period of many years from the time when they become available to the time when they are widely adopted.”*⁶⁷

Difficult though it might be, it is fundamental to encouraging firms to boost their productivity. Numerous attempts have been made by UK government to encourage firms to adopt innovation, mostly focused on technology but these have all had mixed results. It is often the case that these efforts have been some combination of inadequately funded, poorly delivered, given too short a timeframe, and overly prescriptive from central government. Help to Grow: Digital suffered from a combination of being too prescriptive in terms of product eligibility and business size, as well as having too short a timeframe.

“The gap between R&D and the genuine ability to adopt is huge. It’s just not accessible, there is a huge impenetrable wall.”

Ruth Partington, Founder and CEO, Empower Translate

As identified earlier, for those small businesses considering introducing new or significantly improved processes, time and uncertainty of how to implement were particular barriers identified. This group are more likely than the average to say that more support to help implement (50% to 28% on average) or better information, advice and guidance (42% to 26% on average) would incentivise them to innovate. As well as more capacity to implement (37% to 23% on average).

These findings correlate with other studies. A historical study that recognised that *“the diffusion of innovation across firms is a core driver of aggregate productivity growth”* found that:

*“The need to reorganise production to make efficient use of new technologies – a feature common to many new technologies – can lead to both slow technology adoption and to aggregate productivity gains that materialise slowly.”*⁶⁸

⁶⁷ Rogers, E. M. (2003), *Diffusion of Innovations*, 5th edition, New York: Free Press, p.1

⁶⁸ Juhász, R., Squicciarini, M., and Voigtländer, N. (2020), Technology adoption and productivity growth: Evidence from industrialisation in France, The Centre for Economic Policy Research, <https://cepr.org/voxeu/columns/technology-adoption-and-productivity-growth-evidence-industrialisation-france>

It is difficult for small businesses to change their processes in order to be more efficient and they could benefit greatly from support and advice on how to do so. Despite the potential of business support to drive up productivity, it is underappreciated in terms of Government funding and attention. It is necessary to consider the level of funding in order to boost quality of public sector provision and assure that it reaches those businesses who could benefit most.

The latest *Productive Business Index* produced by Be the Business found that those SMEs who receive advice have both improved strategic planning and improved performance. The report found that 38 per cent of business leaders who receive advice are planning to increase activity on their business strategy in the next 12 months. This is compared to just 17 per cent of those businesses who receive no regular advice.⁶⁹

Current business support landscape

According to a recent estimate, there are around 750 start-up support programmes across the UK. This includes accelerators and incubators and a host of other similar organisations.⁷⁰ Supporting tech start-ups does not necessarily have to be to the detriment of more established SMEs. Yet, our qualitative research highlighted a confusing landscape and a mixed picture on how useful that support can be, difficulties with finding the right person to talk to and a confusing, ever-changing patchwork of organisations.

“Most support seems aimed at new(ish) businesses. We have been trading for 23 years. Although we would benefit from mentoring, it needs to be related to our business rather than generic.”

FSB Member, Construction, South East England

Almost half of small businesses (49%) in Wales go to Business Wales to seek advice on how to grow their business and over a third (34%) of small business owners in Scotland would go to Scottish Enterprise.

69 Be the Business, *Productive Business Index – Edition Six, Q1 2023*, 2023, <https://www.bethebusiness.com/our-thinking/be-the-business-productive-business-index-edition-six-q1-2023/>

70 Centre for Entrepreneurs, *Incubation nation: The acceleration of UK startup support*, 2022, <https://centreforentrepreneurs.org/cfe-research/incubation-nation/>

Figure 15: Who small businesses would seek support from if wanting to grow their business

Source: FSB innovation survey, 2023

Organisation	Response
Federation of Small Businesses	51%
Business Wales (Wales only)	49%
Private sector business support (e.g. accountants)	35%
Scottish Enterprise (Scotland only)	34%
Growth hubs (England only)	22%
Local councils and authorities	19%
Universities	8%
Made Smarter (manufacturing businesses only)	7%
Further education colleges	5%
Accelerators & incubators	5%
Independent RTOs (Research and Technology Organisations)	4%
Catapult centres	3%
Other	12%
None of the above	18%
Don't know / Not sure	10%

Our evidence suggests small firms want advice from those based locally with private sector experience (Figure 15).

Despite the ever-changing business support offering in England, over a fifth of small businesses (22%) in the country say they would seek advice on how to grow their business from a Growth Hub. While seven per cent for Made Smarter might seem small, this has only been launched in 2018 and only for certain regions within England. Only 11 per cent of small businesses say they would go to a Further Education College and/or a university, we should consider whether these are the most suitable conduits to business to offer this support.

Interestingly, female business owners are much more likely to be using business support than male business owners. Only eight per cent of female business owners say they would not use business support compared to 22

per cent of male business owners. This could be linked to the earlier finding that women are much more likely to have adopted new or significantly improved processes compared to men.

There are geographical variations in terms of small businesses engaging with their local authorities to grow their business. 29 per cent of small firms in Scotland engage with their local authority in comparison to the South East of England, where only 13 per cent of small firms do so.

Our research shows regional variations in England for small firms engaging with Growth Hubs. 31 per cent of small businesses in the West Midlands say that they would seek advice from a Growth Hub, compared to 16 per cent of small business based in the East of England. Our qualitative research adds to this mixed view of Growth Hubs across England.

“My Growth Hub is a fantastic resource and I am concerned about its future. They have a strong understanding of how businesses work and the advisers are great at directing me to the relevant people.”

Yvette Lamidey, Executive coach and mentor, Buckinghamshire

“Growth Hubs really are a postcode lottery and it’s a bit of a mixed bag. My one seems more concerned with measuring number of calls and no interest in outputs or level of success. I’m aware of several other local businesses seeking support and the response, no matter the query, was always for them to suggest speaking to a business trade body.”

FSB Member, Tech sector, England

In March 2023, the government announced that the functions of Local Enterprise Partnerships (LEPs) would be delivered by local government in the future, with central government funding for LEPs being removed from April 2024.⁷¹ This followed the decision in March 2022 to cut funding for Growth Hubs in half for the 2022/23 financial year.⁷² The funding for Growth Hubs has slightly increased (by less than £1 million) for 2023/24, which is still a level of funding much lower than previous years.⁷³ This is despite strong evidence that the Growth Hubs are exceeding targets that were set.⁷⁴

71 HM Treasury, Spring Budget, 2023, <https://www.gov.uk/government/publications/spring-budget-2023/spring-budget-2023-html>

72 Department for Business, Energy and Industrial Strategy, Letter to LEP Chief Executives: Confirmation of Funding for Growth Hubs, Financial Year 2022/23, 2022, https://www.buckslep.co.uk/?wpfb_dl=1066

73 Department for Business, Energy and Industrial Strategy, Industrial Development Act 1982: annual report, 2021 to 2022, 2022, <https://www.gov.uk/government/publications/industrial-development-act-1982-annual-report-2021-to-2022>

74 Department for Business and Trade, Evaluation of the Growth Hubs, 2015-2020, 2023, <https://www.gov.uk/government/publications/evaluation-of-the-growth-hubs-2015-to-2020>

It is our view that the numerous changes to business support landscape over the last few years has been detrimental to business growth. Unfortunately, this has been a trend with business support in England in recent years. It has created an uncertain and confusing landscape for SMEs. As we identified in our 2018 report, *Sharing Prosperity*: “One of the key changes that England can make comes from neighbouring countries in Wales and Scotland. Centralised brands are important for improving business recognition and delivering a consistent picture across all areas of England.”⁷⁵

What works for SMEs?

Our research shows small firms prefer advice via the private sector and to be accessible locally. The need for local delivery of business support is also reflected by academics that have identified that countries with more devolution tend to be better at diffusion.⁷⁶

“Because of the risk aversion culture that’s inherent in many people in post-industrial communities – we’re encouraged to take safe jobs and doing something different to the norm isn’t encouraged. There’s a fundamental lack of confidence in trying something different, and failure isn’t celebrated.

“The idea that you can’t innovate without trialling new things and that trials sometimes result in failure is alien. Indeed, I have experienced local innovation funding applications that have required certainty of success before funding is awarded. For the country to develop a productive economy, we need to evolve from this mindset.”

Victoria Mann, CEO of NearMeNow, Wales

For business support to succeed in the long run, central Government needs to commit to supporting local business support over the long-term. It is likely that it will take a number of years for awareness of business support organisations to build and thus have a tangible impact.

Small businesses are likely to engage with advice which relates to them and their business. Business support needs to be tailored to individual SMEs. A one size fits all approach for the UK’s 5.5 million small businesses is doomed to fail. Trust is an integral part of the small business support culture. Small businesses are a lot less likely to trust someone who appears to just want to sell them products or someone who has not developed a relationship with them.

⁷⁵ FSB, *Sharing Prosperity: The Future of UK Business Support*, 2018, <https://www.fsb.org.uk/resources-page/sharing-prosperity---the-future-of-business-support-pdf.html>

⁷⁶ Taylor, M. Z. (2016), *The Politics of Innovation: Why some countries are better than others at science and technology*, New York: Oxford University Press, p.136

Business support should not solely focus on firms who want to achieve growth. Many small businesses do not necessarily want to grow but nearly all want to be more efficient and effective.⁷⁷ Innovation adoption is relevant for these types of businesses as well. Even if the end goal is not for these businesses to grow, encouraging modernisation will have an impact on the UK's productivity.

Trust, reliability and local support have been identified as important criteria. Policymakers should take lessons from some of the initiatives by the Centre for Research in Ethnic Minority Entrepreneurship (CREME), as outlined in the below case study. Enabling a partnership approach at a local level, with an emphasis on developing long-term trust-based relationships is vital.⁷⁸

Case Study on use of community organising techniques to engage businesses

There has been a longstanding challenge in ethnic minority entrepreneurs being discouraged from seeking business support. The disjointed and complicated business support system in the UK has made this situation worse. CREME at Aston University has worked with several organisations across the private sector and civil society to offer a range of support initiatives for ethnic minority businesses (EMBs) located in some of the most deprived areas of Birmingham.

The Business Leaders Project, which has been running since 2016, aims to develop a more inclusive business support ecosystem for EMBs in Birmingham. Many of whom had not previously used formal business support.

This programme is unique in utilising community organising methods to deliver group training and one-to-one support with several local partners. The project engages EMBs with mainstream support provision. It also empowers EMB owners to become business leaders and campaign on the issues that affect their communities.

Summary taken from The Centre for Research in Ethnic Minority Entrepreneurship (CREME) & NatWest, Time to Change: A Blueprint for advancing the UK's Ethnic Minority Businesses

77 Be the Business, Ambitions Beyond Growth: Responding to the diversifying needs of the UK's SME population, 2022, <https://www.bethebusiness.com/our-thinking/ambitions-beyond-growth-responding-to-the-diversifying-needs-of-the-uks-sme-population/>

78 Aston University Centre for Research in Ethnic Minority Entrepreneurship, Time to Change: A Blueprint for advancing the UK's Ethnic Minority Businesses, 2022, <https://www.aston.ac.uk/latest-news/new-aston-university-report-sets-out-blueprint-advancing-growth-potential-ethnic>

Specific innovation organisations need specific duties

Growth hubs, local authorities, universities and all the organisations listed in Figure 15 are each involved in the innovation landscape and have a valuable part to play. However, clarity on each organisations role and purpose is essential.

Case study on diffusion agents: Canada

Industrial Technical Advisers (ITAs) work for the Industrial Research Assistance Program in Canada, to assist SMEs with technological innovation and diffusion. ITAs are given large amounts of authority to build networks with firms, research organizations and education institutions in their industries of expertise and their geographic areas. The recruitment process favours candidates with industry experience so they bring knowledge of technology development as well as networks of contacts in their target industries.

Rather than solving particular issues by developing technological solutions themselves, the ITAs use their networks to locate other organizations that can assist and overcome barriers to innovation. They are able to do this successfully through intimate and consistent contact with firms.

This approach is focused on promoting innovation and growth in traditional industries. The focus is on incremental improvements rather than blue-sky thinking, which brings certain benefits: 90 per cent of businesses improve their technical knowledge or capabilities related to their businesses; 70 per cent report improved productivity; whereas only 30 per cent reported the development of novel technologies. However, the ITAs' focus is not radical invention but to boost productivity.

Unfortunately, due to pressure for Canada to focus more on early stage R&D, IRAP has in recent years been given an ever-expanding set of policy programs focused at that goal. Yet that is not the reason the organisation was set up and the broadening in focus has led it being less effective at what it does well.

Summary taken from Dan Breznitz, Innovation in Real Places

Just as universities are not necessarily well suited to encourage small businesses to adopt innovation, Made Smarter should stick to its purpose of engaging and encouraging SMEs to modernise and use the latest technology.

Language

When engaging with small firms directly and encouraging them to use

technological solutions to improve their efficiency, it is vital that this is put to them in terms that are understandable and relatable. Terms such as “innovation”, “productivity”, and “internet of things” are also best avoided when encouraging small firms to adopt products and processes to make them more efficient. A report from the Business, Energy and Industrial Strategy Select Committee concluded that: *“The concept of productivity is still not widely understood by SMEs and most would struggle to measure it or recognise the benefit of taking action to improve it.”*⁷⁹

“Our firm isn’t a tech company but I’m keen to use the latest technology as I’m lazy, and tech is a huge time and effort saver. I do spend a lot of time researching and trying the right product but once I’ve picked it, it makes our lives so much easier and effective. For instance, using machine learning tools to keep our customer base feel well cared for is a huge time and money saver. To get the same results with staff would require me to hire several people.”

Steve Vallender, CEO of Bursali Towels, Cardiff

“I’ve been to universities putting on events to encourage small firms to adopt emerging technologies. I work at the cutting-edge of technology and often have no idea what they’re talking about. The level of detail and complications that academics go into is completely unnecessary.

“Small firms just need to know about how to apply tech products to their business and the potential benefits. Demystifying digital transformation and how businesses could transform needs simplicity of language otherwise businesses will see it as too time-consuming and costly to implement. How can an academic understand the perspective of small business owners if they’ve never run a business?”

Hollie Whittles, Director of Purple Frog Systems, West Midlands

⁷⁹ House of Commons Business, Energy and Industrial Strategy Committee, Small businesses and productivity, 2018, https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/807/80705.htm#_idTextAnchor009

Recommendations

The Department for Business and Trade should:

- **Publish a UK-wide inclusive enterprise strategy which focuses on barriers to entrepreneurship including business support for underrepresented groups.** Business support and networks are fundamental in providing resources to businesses to enable them to start-up and grow. UK-wide inclusive enterprise strategy needs to incorporate the needs of local business communities. Building on networks of intermediaries already trusted by communities directing business support will break down barriers faced by underrepresented entrepreneurs.
- **The success of business support programmes should be judged on outcomes not output.** Often, the success of business support is judged by how many businesses have been reached rather than the actual impact of that support. Measuring whether the businesses who had received support subsequently grew their turnover, the long-term GVA and their satisfaction with the service would be better metrics to use.
- **Direct extra funding towards business support and this should be ring-fenced.** In an earlier recommendation, we suggest that the innovation diffusion and adoption budget should be set at 10 per cent of the total R&D budget. In England, the extra money should be used in the following ways:
 - **Establishment of Business England – this organisation would provide coordination and stewardship to business support delivery in England.** The delivery of business support would remain with local authorities. Business England should also regularly collect data of the types of technology and innovation that have been adopted by businesses in different sectors and regions.
 - **Made Smarter should be expanded geographically and be exclusively focused on the diffusion of innovation. Following the example of Made Smarter, similar bodies should be set up for different sectors across the country – these organisations should be focused on enabling small businesses to adopt innovation and technology.** Private sector experience and knowledge of business innovation should be essential criteria in its expansion. As is the case with Made Smarter, these would be focused on certain sectors and geographies.
 - **Funding for Growth Hubs should be increased to at least the same level as the 2020/21 financial year.** These are important

signposting organisations that can point small businesses towards more specialised support.

The Department for Science, Innovation and Technology should:

- **Move responsibility for innovation diffusion out of Innovate UK.** National governments would be responsible for co-ordination and regional governments, working with local partners, responsible for delivery. Ideally in England this would be a responsibility of Business England. Without this body, the responsibility should be with DBT/DSIT. Innovate UK should maintain responsibility over Knowledge Transfer Partnerships (KTPs) and Catapult Centres.

The Northern Ireland Department for Economy should:

- **Carry out further, targeted research with SMEs regarding innovation - in particular around user experience, behaviour analysis and the importance of language.** Awareness and understanding amongst SMEs is a key barrier to improvements in innovation activity, but a focus on understanding behaviour change in the NI context is essential to bringing about understanding and improvement.⁸⁰

The Welsh Government should:

- **Alongside the UK Government, ensure that funding and capacity for Business Wales is retained after 2025, and that the Development Bank of Wales remains strongly capitalised to support SMEs in innovation.** 49 per cent of small businesses in Wales would go to Business Wales for advice if they were looking to grow their business. Apart from FSB, this is the highest percentage out of all business support services in the UK. This finding is similar to results of previous surveys, which confirms that Business Wales is well known and regarded by small businesses as a one stop shop for business support. It is currently a competitive advantage for the Welsh business environment.

80 Department for Business, Energy and Industrial Strategy, Business Basics: Attitudes to Adoption, 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/838473/attitudes-to-adoption.pdf

METHODOLOGY

This report is based on FSB members views on tech adoption and innovation across the UK. FSB undertook a mixed method approach for the research, consisting of a quantitative online survey, two focus groups and ten interviews with individual FSB members. The survey was nationwide in its reach and members were invited to participate in the survey via email and social media channels.

The survey was administered by the research agency Verve and was in the field from 18 January 2023 – 3 February 2023. The survey questionnaire was completed by a total of 1,035 small businesses. The survey findings are all weighted according to FSB membership weighting (to reflect the demographic balance of FSB members throughout the UK).

All percentages derived from the survey are rounded to the nearest whole number, which is why some percentages presented in the figures do not sum to 100 per cent. The focus groups took place via Zoom and in person with members based in England and Wales, and purposefully drew from a variety of regions and sectors. Two focus groups took place on 17 March 2023 and 27 March 2023.

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