Future Governance Forum

REBUILDING THE NATION 05

Spurring innovation

By Hamida Ali, Shuab Gamote
Joseph Holland, and Adam Terry

Published
March 2025

FGF

This paper was first published in March 2025
The contents and opinions expressed in
this paper are those of the authors only.

Company number, England & Wales: 14406854

Contents

About 2
About The Future Governance Forum 2
About Viasat 3
About the authors and acknowledgements 3
Foreword 5
Introduction 6
Summary of recommendations 9
Chapter One: Strategy 12
Chapter Two: Regulation 20
Chapter Three: Institutions and funding 28

About The Future Governance Forum

Our mission is to shape a comprehensive new operating model for the way the country works.

FGF was founded to advance new approaches to progressive policymaking and delivery, with a focus spanning national, devolved, regional, and local government.

We are more than a traditional think tank. We concentrate on the *how* as much as the *what* of policy design and implementation. Through our research and our convening power - the *forum* at the heart of our project - we not only develop new ideas, but test and iterate them in practice.

Our approach is rooted in collaboration. We work closely with partners across our shared ecosystem and build new networks bringing together practitioners and diverse voices from across sectors, borders and tiers of government, facilitating insight-sharing and driving forward the ideas we advocate.

Our current programmes of work explore:

- **Mission Critical:** how can government translate mission-driven government from ambition into action?
- **Impactful Devolution:** how can government meaningfully and permanently devolve power to regional and local level in one of the most centralised countries in the world?
- **Rebuilding the Nation:** how can we utilise innovative models of public and private investment to spur growth and rebuild our crumbling infrastructure?
- **Institutional Renewal:** how can we rewire the state to ensure its institutions and people are fit to meet the challenges of the 21st century?

By prioritising these questions we are thinking about new progressive models of governance for the long term.

Get in touch:
hello@futuregovernanceforum.co.uk
futuregovernanceforum.co.uk
@FutureGovForum
the-future-governance-forum-fgf

About Viasat

Viasat is a leading global technology company, helping a rapidly changing world solve its most demanding connectivity needs. Viasat powers some of the world's most important communications solutions – on the ground, in the air, at sea, and in space.

About the authors and acknowledgements

Adam Terry

Adam is Deputy Director at The Future Governance Forum, having previously been the Labour Party's Head of Policy Development. Prior to that he worked as Head of Policy in the Shadow Treasury Team and as a senior political adviser in both the UK and European Parliaments. He started his career in the UK civil service, including roles at the British Embassy in Kabul and the Prime Minister's Office in 10 Downing Street. He has also worked in both the charity sector, as Head of Public Affairs at the housing charity Shelter, and the private sector, as a senior adviser at the political consultancy Global Counsel.

Hamida Ali

Hamida is Head of Learning and Practice at The Future Governance Forum and has over 20 years experience of addressing equality and diversity in public sector organisations. She served as a councillor in the London Borough of Croydon and in October 2020 was elected as Leader of the Council. Since standing down as a councillor, Hamida has joined the team who deliver some of the leadership development programmes for councillors in leading roles for the Local Government Association.

Joseph Holland

Joseph Holland is a Research Associate at The Future Governance Forum, and the Operations and Programmes Manager at Progressive Britain. He has experience in policy research, political communications and political campaigns in the Labour movement. A former professional football player, he has a Master's degree in Economics.

Shuab Gamote

Shuab joined The Future Governance Forum as a Researcher after completing a Master's in Public Policy at the Blavatnik School of Government. He previously worked at Manchester Metropolitan University, where he managed multiple projects as part of the university's education strategy. Before this, he led and developed an award-winning initiative tackling the awarding gap at the Students' Union, producing reports on student experience.

Acknowledgements

This report would not have been possible without the support of Viasat and input from the individuals and organisations listed below (as well as those who spoke to us off the record, and whose names are therefore not listed below). We are very grateful to Viasat for their support, and to all our interviewees and roundtable attendees for sharing their insight and experience. This does not in any way indicate their endorsement of the report's conclusions and/or recommendations, which are ultimately the views of the authors.

- **John Abbott,** Chief Executive Officer, Satellite Applications Catapult
- **James Cemmell,** Former Vice President, Government Engagement, Viasat
- **Alice Bunn**, Chief Executive Officer, Institution of Mechanical Engineers and President, UKspace
- **Alex Chalmers,** Platform Lead, Air Street Capital
- **Rory Daniels**, Senior Programme Manager, Emerging Technologies, Tech UK
- **Dr Rob Doubleday**, Executive Director, Centre for Science and Policy, University of Cambridge
- **Dr Barbara Ghinelli**, Director Innovation Clusters and Harwell Campus, UKRI STFC
- **Tom Hollywood**, Director, DGA Group
- **Michelle Howard**, Programme Director, Space Working Group, D Group
- **Sarah Hunter**, Non-Executive Director, Advanced Research and Invention Agency (ARIA)
- **Kirsty Innes**, Director, Technology Policy, Labour Together
- **Yasrine Ibnyaha**, Senior Director, Advanced Concepts and Technologies, Viasat
- **Professor Richard Jones**, Vice-President for Regional Innovation and Civic Engagement, University of Manchester
- **Katie King**, Chief Executive Officer, BioOrbit
- **Lucy Mason**, Director, Capgemini Invent
- **Roger McKinlay**, Challenge Director, Quantum Technologies, UK Research and Innovation (UKRI)
- **Kanishka Narayan MP,** Member of Parliament for the Vale of Glamorgan
- **John Reeves**, Managing Director Global Affairs, Viasat
- **Leo Ringer**, Founding Partner, Form Ventures
- **Mary Towers**, Employment Rights Policy Officer, Trades Union Congress
- **Will Wallace**, Partner, DGA Group
- **Lord David Willetts**, Chair of UK Space Agency

Foreword

This report comes at the right time. There is intense interest in improving our performance on innovation so as to raise the growth rate. Innovation comes in many forms but developing and applying new technologies is often key.

This report deliberately focuses on three key general purpose technologies - space, AI and quantum. The UK would gain substantial economic benefits if it has successful strategies for developing these and the report has good advice on how to do this. Regulation can be a problem if it is designed for old technologies and is too risk averse. But getting the regulatory regime right can be a key source of comparative advantage. Again the report offers good practical suggestions on how to achieve this. Money matters too and the report has good suggestions on how best to target limited public funds and also promote private funding alongside.

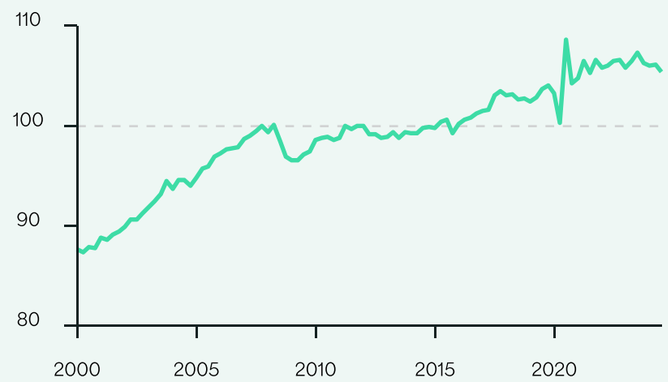
The Future Governance Forum has promoted lively and constructive discussions of important difficult issues. There is a big prize of promoting new technologies to boost the growth rate and enhance public services as well. The proposals in this report could help achieve that great prize.

Rt Hon Lord Willetts FRS
Chair, UK Space Agency

Introduction

The new UK government has made clear that economic growth is at the top of its agenda, the foremost among its five national missions. The government is equally clear that achieving that mission will require a step change in productivity growth which has been sluggish ever since the 2008 financial crisis (see **Figure 1**). In its general election manifesto, the governing Labour Party asserted that "delivering growth and raising productivity depend on fresh thinking and new ideas"[1]. In other words, innovation: a prerequisite to delivering on that primary national mission.

Figure 1: UK productivity growth since 2000



House of Commons Library, Productivity: Key Economic Indicators, 16 August 2024.

There is, or should be, a golden thread that runs through the life cycle of a new product or service, from the research and development (R&D) needed to cultivate the initial idea, the innovation needed to take existing ideas and adapt and improve them for additional uses, and finally the commercialisation stage at which commercial success is achieved. This paper considers all three of those stages but has a particular focus on what the new UK government can do to accelerate the middle stage - innovation - so that private enterprises and public institutions can do more with existing technology, scale up and raise levels of both productivity and economic growth.

We have looked at the innovation policy landscape more broadly, but to give our work a practical focus we have considered in particular three high potential technology areas: space, Artificial Intelligence (AI) and quantum computing. All three of these areas are of critical importance not just for the UK's overall growth and competitiveness, but also for economic resilience and national security. Approached in the right way, they also enable much broader innovation across the economy: developments in space, for instance, regularly unlock dual-use capabilities that can then be applied elsewhere; AI

1 Labour Party, Change: Manifesto 2024, June 13 2024, p.35.

and quantum computing are transversal technologies with the potential to unlock productivity growth in a whole range of sectors. In all three the UK has the opportunity to be world-leading if policymakers think strategically and intervene in a targeted, focused manner.

The size of the prize is immense. AI has been identified as a £550bn opportunity for the UK[2] with the potential to improve productivity by 1.5% per annum[3]. Quantum computing is estimated as a $2 trillion value opportunity by 2035 and the UK has secured a nascent industrial base in both quantum computing and communications[4]. Space has been long established as Critical National Infrastructure in the UK and accounts today for 52,000 direct employees and £18.9bn income in the UK[5] with potential for the UK to increase its share of a global industry estimated to grow to $1 trillion by 2040[6]. The extent to which the incoming government understands this was evident in the recent Budget: aerospace was allocated £975m of funding over five years and cited as a major focus of developing defence capabilities.[7]

The potential benefits are also more than just economic. In order to keep the UK secure in an increasingly multipolar and dangerous world, technological innovation is a source of strategic advantage. Equally, innovative new technologies will be at the heart of the UK's decarbonisation, in terms of meeting both the new government's mission for clean energy by 2030 and the legally binding target of Net Zero by 2050.

In all cases, the state has a major role to play in driving and facilitating this innovation, crowding in private investment as it does so.

This role, though, is different to what it has been historically. For the second half of the twentieth century the major sources of R&D spending were public, with the private sector benefiting from, and building upon, breakthroughs made by the state (especially in the realm of defence). However, the early years of the twenty-first century saw an inflection point, after which private sector R&D spending outstripped public, and it is now commercial breakthroughs on which governments tend to build and innovate (such as the nascent use of AI in the delivery of public services).

The change of administration in the UK, along with its stated focus on economic and productivity growth, offers an important moment to look at how central government in particular can establish a policy environment in which innovation can flourish, in every part of the country. To that end, over the last few months The Future Governance Forum (FGF) - with support from Viasat - has been conducting desk research and interviews with experts in the fields of R&D, innovation, space, AI and quantum computing, culminating in a roundtable

2 Public First and Microsoft, Unlocking the UK's AI Potential: Harnessing AI for economic growth, 15 May 2024.

3 Department of Science, Innovation and Technology (DSIT), AI expert to lead Action Plan to ensure UK reaps the benefits of Artificial Intelligence, 26 July 2024.

4 McKinsey Digital, Quantum Technology Monitor, April 2024.

5 UK Space Agency, Size and Health of the UK Space Industry 2023, 26 July 2024.

6 Morgan Stanley, The Space Economy's Next Giant Leap, accessed October 2024.

7 HM Treasury, Autumn Budget 2024: Fixing the foundations to deliver change, 30 October 2024, pp. 65,

discussion at Viasat's new International Headquarters in London on 3 October 2024. During the course of that work we spoke to a wide range of stakeholders, from policymakers and regulators, to academics and think tank researchers, to investors and practitioners, sectoral experts and trade unionists.

This report is the outcome of that work, and is written in accordance with the Chatham House Rule (so the contributions of those we have spoken to are woven throughout the work, but never attributed to an individual, and the final report reflects FGF's interpretation and analysis of what we have heard and read).

The report is structured around three areas of the innovation landscape: overall government strategy, the regulatory environment, and the institutions and funding which shape and enable innovation policy. For each of these, we start by briefly describing the commitments the new government made in opposition and the actions it has taken during its first few months in office, before offering a view and recommendations on what might come next if we are to accelerate the innovation process, lifting productivity levels and with them, the UK's international competitiveness and the living standards of its citizens.

Summary of recommendations

Strategy

The new government should...

1. **Lead with purpose**: Articulate an overall purpose around which other activity can coalesce. Consolidate existing strategies, roadmaps and frameworks in pursuit of that purpose, but do not throw them out and replace them wholesale.

2. **Govern in partnership**: Act as an "orchestrator", sending out a clear demand signal to the market, to give much-needed confidence for those who are looking to try new things and lower risk perceptions so as to encourage creativity and innovation.

3. **Prioritise ruthlessly**: Be selective as to where the state intervenes, based on confidence in the UK's strengths and realism about where it is more limited or where others are further advanced. This requires a frank assessment of where the state can add value in ways the private sector can't, being prepared to disappoint influential stakeholders and also being comfortable with the prospect of getting things wrong.

4. **Embed innovation across the policy agenda**: Weave innovation throughout the new government's five missions and into its ambitions for regional economic development, by overcoming both disconnects within Whitehall and regional over-concentration of R&D spending and outcomes.

5. **Don't fetishise the frontier**: Pay attention to the practicalities of what works, rather than becoming fixated on "the new and shiny" or assuming that a single technological solution can act as a substitute for investment or hard work.

6. **Run concurrent short- and long-term growth strategies**: Alongside immediate economic policies to deliver benefits and ease cost of living pressures quickly, the government also needs a longer-term strategy in which policy and investment horizons are better aligned.

Regulation

The new government should...

7. **Strike the right balance between risks and benefits**: Take a more nuanced view of the potential harm of new technologies, determining from where exactly such harm might arise and then mitigating against that specific risk rather than acting too broadly. Aim for regulation that is coherent and predictable while agile enough to take new developments into account.

8. **Encourage regulators to do more thinking aloud**: Regulators should show more publicly how they are wrestling with a particular problem at an early stage, rather than waiting until they have answered every question before pronouncing on an issue.
9. **Ensure regulators have the right resources**: A pro-innovation approach to regulation requires sufficient regulatory capacity to deliver. Funding is critical, but so too are skills: effective regulation of advanced technologies requires regulators to have a deep understanding of the fields they are overseeing.

10. **Set rules and delegate powers without sacrificing accountability**: Ensure greater awareness of and compliance with existing statutory guidance, while giving regulators a clear means of communication with the government as to when they consider changes need to be made, and ensure that such requests are taken seriously and acted upon.

11. **Lead the way on international standards**: Set national regulations so as to encourage innovation and attract internationally mobile firms, while maintaining a clear sense of the UK's own values and ethics and not engaging in a race to the bottom on standards. Look to existing strengths where the UK can play a leadership role and bring international governments and regulators together, being realistic and selective as to where the UK might be best placed to act.

12. **Promote collaboration with government, with industry, and between regulators**: Break down siloes and improve collaboration - within government, but also across regulators, industry and beyond. Central government should operate in a genuinely cross-departmental manner and send a single, coherent message out to both regulators and industry as to what it is trying to achieve. Regulators should work effectively with industry when carrying out their duties, based on the shared central insight that good regulation should have the interests of the citizen at its heart.

13. **Take a fresh look at competition policy**: Make a strategic choice about how to develop and apply competition policy in a changed and changing geopolitical context, and how to balance the development of national champions that can compete at scale globally with a desire to see healthy domestic competition driving prices down and value up.

Institutions and funding

The new government should...

14. **Develop stable, long term funding streams**: Clarify how the commitment to 10-year funding settlements for "certain R&D activities" will work in practice and put support for innovation at the heart of the next Comprehensive Spending Review given its role as a proven driver of economic growth.

15. **Demystify the institutional landscape**: Ensure each public organisation in the innovation landscape sets out clearly its mandate, its objectives and rationale for them, the timetables to which it is operating and the means by which stakeholders can engage with both the institution and its processes.

16. **Model open, collaborative ways of working**: Look beyond reforming individual institutions to the overall institutional ecosystem and how it functions. Science and technology should be seen as enabling capabilities, core to all departments' work and so with a coherent approach across Whitehall. Encourage greater exchange between public and private sector, getting more expert and unusual voices into government where possible.

17. **Maximise the power of government as a purchaser**: Shift to a more outcome-oriented approach to procurement and open up the system to smaller and more early-stage companies. Move from a grant-dominated model of funding to one that is much more geared towards contracts.

18. **Target funding geographically and at "the innovation gap"**: Look to increase the percentage of research funding that is awarded to domestic companies, while improving the regional distribution of funding and the diversity of recipient firms. Expand existing innovation funding schemes where they exist (but are perhaps too small to have a significant impact) and consider how best to connect R&D programmes with innovation programmes and then onward to commercialisation.

19. **Unlock the power of patient private capital**: Design the structures and incentives of new pension 'megafunds' and the British Growth Partnership so as to encourage investment in innovative new companies right across the UK, in particular through smaller UK-focused private capital funds with a regional dimension.

Chapter One: Strategy

An effective government innovation strategy will require making political choices about where to direct constrained resources for maximum impact. The new administration will wish to signal political change and renewal, while leveraging present functioning institutions and policies in order to secure a fast start, and without unnecessarily tearing up parts of the status quo that might lead to industry disillusionment or paralysis.

Mobilising the whole of government to implement a new strategy and aligning delivery levers, such as procurement processes and regulation, is notoriously difficult and an area where prior administrations have failed. However, this is consistent with the new administration's commitment to a mission-driven approach, which it describes as "a new way of doing government that is more joined up, pushes power out to communities and harnesses new technology"[8].

AI, quantum and space represent strategic and timebound opportunities for the government, which must act with the decisiveness and urgency of the UK's international competitors. The challenging geopolitical context surrounding the development and regulation of strategic technologies means the UK must carefully position itself on the global stage and work with international partners to achieve its objectives. With strategy set, the government needs to maximise its role as 'orchestrator' of various actors to ensure implementation happens, and at pace.

The new government's initial commitments and actions

The new government has affirmed its belief in a more strategic, active role for the state - not just to correct egregious market failures but to shape markets in the first place. The Secretary of State for Science, Innovation and Technology, Peter Kyle, has spoken of the need for government itself to innovate in pursuit of these objectives. When doing so, he explicitly referenced the space sector as one from which a mission-driven government can learn: moving beyond the tried and tested in order to "find the bold solutions to the problems that have dogged our country for decades, and the solutions we will face in the decades to come"[9].

This approach is encapsulated in the government's five missions and alongside them its industrial strategy green paper[10]. Within that green paper, the government identifies "digital and technologies" as one of its eight "growth-driving sectors", as well as defence and advanced manufacturing. In the section on defence the green paper explicitly references "developing and applying

8 Labour Party, Change: Manifesto 2024, p.12.

9 Secretary of State Peter Kyle, Speech at the Farnborough International Air Show, 22 July 2024.

10 Department for Business and Trade (DBT), Invest 2035: The UK's modern industrial strategy, 14 October 2024, p.23.

new technologies such as AI, quantum, and space capabilities, which drive positive spillovers across the economy"[11].

As examples of the steps a more interventionist central government might take to support R&D and innovation, Labour committed in opposition to creating a new National Data Library[12] and bringing forward a Digital Information and Smart Data Bill, intended to help scientists make better use of data for world-class research[13].

From our interviews we have heard that this emphasis on a more strategic approach to R&D and innovation, and a commitment to more certainty and long-termism, has broadly been welcomed - though stakeholders are waiting to see how this manifests itself in practice.

In this context the appointment of the former Government Chief Scientific Adviser Patrick (now Lord) Vallance as the new Minister of State for Science, Research and Innovation has been seen as a positive early step. His appointment was announced alongside the commissioning of tech entrepreneur and chair of the Advanced Research and Innovation Agency (ARIA) Matt Clifford to produce an Action Plan for how AI can drive economic growth and deliver better outcomes for people across the country[14]. Since we held our roundtable, that Action Plan - and the government's response to it - has been published and advanced the agenda further still[15].

Set against this, though, are the actions the new government has taken since coming to office as part of its determination to tackle what it described as a £22bn 'black hole' in the public finances that it inherited from its predecessor. The decision, for instance, to cancel £1.3bn of planned funding for technology and AI projects - including the proposed supercomputer at Edinburgh University - has been criticised as short-sighted and at odds with a stated aim to keep the UK at the forefront of technological innovation[16]. And while the Autumn Budget included a commitment to a record £20.4bn of R&D spending for 2025-26[17] - and £25m for an 'R&D Missions Programme' - there is still a lack of detail as to how exactly this will be deployed and to what extent the new government is going to make science and technology a central feature of its overall economic strategy.

11 Ibid.

12 Labour Party, Change: Manifesto 2024, p.35.

13 Prime Minister's Office, The King's Speech 2024, 17 July 2024, pp.39-40.

14 DSIT, AI expert to lead Action Plan to ensure UK reaps the benefits of Artificial Intelligence.

15 Matt Clifford CBE, AI Opportunities Action Plan, DSIT, 13 January 2025; and DSIT, AI Opportunities Action Plan: Government response, 13 January 2025.

16 Julia Kollewe and Dan Milmo, UK shelves £1.3bn of funding for technology and AI projects, The Guardian, 2 August 2024.

17 DSIT, Government backs UK R&D with record 20.4 billion investment at Autumn Budget

What should come next?

1. Lead with purpose...

In FGF's report *Mission Critical 01*, published in partnership with the UCL Institute for Innovation and Public Purpose (IIPP) and written by Professor Marianna Mazzucato, we advocated that an administration serious about turning mission-driven government from ambition into action should "lead with purpose, and govern in partnership"[18].

Establishing this overriding purpose - the kind of economy the government wants the UK to be, and thus the end to which increased innovation is a vital means - was seen as critical to everything else that follows. As one of our contributors said, "you cannot spend enough time on getting that right". This sense of purpose must have at its core a vision to make the UK a global leader in a ruthlessly prioritised set of areas in which we have - or could gain - a genuine competitive advantage.

This sense of purpose is distinct from establishing a(nother) strategy for innovation or for specific sectors (in the past four years alone, UK governments have published an innovation strategy, an R&D roadmap, a science and technology framework and individual strategies for each of our three chosen sectors/technologies)[19]. Instead, those we spoke to strongly felt that what is needed from the new government is the clear and deliberate articulation of overall purpose around which activity can then coalesce. The strong sense was that there is plenty of detail out there, but a lack of unifying vision. Existing strategies, roadmaps and frameworks should be consolidated and adapted - but not thrown out and replaced wholesale - in pursuit of the overall purpose.

Approaching the issue in this way should enable a new government to balance its desire to signal change from its predecessor with avoiding potentially disruptive levels of uncertainty for stakeholders. The effect of the latter should not be underestimated: as another contributor put it, "political churn is death to innovation".

2. ...and govern in partnership

Achieving a national mission cannot be done by government alone; it requires the state to galvanise action across sectors and across society. To do that, government needs to act as an "orchestrator"[20]. This is especially true of its role in creating the right conditions for innovation.

Our interviewees and roundtable attendees spoke of the importance of government thinking of itself as an "anchor tenant" in the various industries

18 Mariana Mazzucato (with Sarah Doyle, Nick Kimber, Dan Wainwright and Grace Wyld), The Future Governance Forum and the Institute for Innovation and Public Purpose, Mission Critical 01: Statecraft for the 21st Century, May 2024.

19 HM Government, UK Research and Development Roadmap, July 2020.
Department for Business, Energy and Industrial Strategy (BEIS), UK Innovation Strategy: Leading the future by creating it, July 2021.
Prime Minister's Office and DSIT, UK Science and Technology Framework, March 2023.
UK Space Agency, DSIT, Ministry of Defence (MoD), BEIS, National Space Strategy, February 2022.
DSIT, BEIS, Office for Artificial Intelligence, Department for Culture, Media and Sport (DCMS), National AI Strategy, September 2021.
DSIT, National Quantum Strategy, March 2023.

20 Mazzucato et al, Mission Critical 01, p.8.

where it is hoping to spark innovation, and sending out a clear demand signal to the market. This gives much-needed confidence for those who are looking to try new things and lowers the risk perception in a way that encourages creativity and innovation.

Similarly, government should look to put the right infrastructure in place that others can then use to build on. A lack of infrastructure was seen as a major blocker to innovation, and yet when this is done well - for example, the existing infrastructure that allows a company like BioOrbit to manufacture cancer drugs in space[21] - it enables unexpected but high-value new use cases to emerge.

It is incumbent on the private sector itself to organise more effectively so as to interact with a government that wants to work in partnership - and areas such as AI and quantum in particular are not (yet) traditional sectors with trade bodies and an obvious focal point around which to coalesce - but our contributors were clear that it is for government to initiate this collaborative way of working. This should be about rebuilding trust where perhaps it has been lost due to what respondents described as disjointed strategy, lack of clear direction, and siloed ways of working over recent years. It also means moving the conversation beyond transactional talk of funding and onto a more strategic discussion with the right people in the room.

The government's emerging missions architecture, such as the Mission Delivery Unit in Cabinet Office, and the proposed new Industrial Strategy Forum and Business Partnership Framework[22], are obvious starting points from which this engagement work could begin. FGF's report *Mission Critical 02* sets out further thinking on how this could work in practice[23].

3. Prioritise ruthlessly

We heard consistently from our contributors that implementation of an effective innovation strategy will require the Government to be selective as to where it intervenes, based on confidence about the UK's strengths and realism about where it is more limited or where others are further advanced.

Even in the most benign conditions, government cannot meaningfully direct resources towards every sector of the UK economy, and such choices become even harder in times as fiscally straitened as these. Those we spoke to highlighted the trade-off between breadth and depth, with the risk being that in appeasing sectoral interest groups the government spreads limited resources too thinly to make a difference anywhere: salami-slicing a substantial budget so that it becomes, in the words of one contributor, little more than "an SME subsidy scheme".

Government therefore needs to make difficult decisions about where to intervene and where to stand back, based on a frank assessment of where the state can add value in ways the private sector can't. This requires being prepared to disappoint influential stakeholders and also being comfortable

21 UK Research and Innovation, UK start-up to develop tech for pharma factory factory in space, 7 November 2023.

22 DBT, Invest 2035, pp.52-53.

23 Ram Puvinathan and Grace Wyld, Mission Critical 02: Governing in partnership with business and trade unions, The Future Governance Forum, October 2024.

with the prospect of getting things wrong; little wonder in some ways that many respondents pointed out that governments of all stripes have historically not been good at making these choices. But it is vital that they do, and one contributor was keen to point out that the UK does have a partial track record of not simply "letting a thousand flowers bloom" but actively prioritising R&D support to key sectors: they gave the example of small satellites as a technology which the UK government backed years ago and which has paid off. Similar bold choices are needed today, and will require both honesty and political self-confidence.

Respondents debated where some of the trade-offs might be here, in particular around the semiconductor industry. While there was broad agreement that the UK should not seek to be a mass market leader in a sector already dominated by Taiwan and others, and that the previous government's semiconductor strategy had been slow to emerge, some argued that in niche areas of the industry - notably the complex, compound semiconductors produced by companies like Pragmatic and Paragraf - the UK has potential competitive advantage where government attention and support could be invaluable. Getting to that point means recognising and playing to the UK's existing industrial strengths (as well as identifying areas where it has vulnerabilities or weaknesses that must be addressed), but also acknowledging limitations and those areas in which it is not possible to exercise total sovereignty.

To avoid criticisms that modern industrial policy becomes just another means of the state trying (and failing) to "pick winners", contributors argued that the government should look less at individual firms and more at the broad capabilities it wants the UK to have, leveraging where it already has a lead and then building on that at scale. ARIA, for instance, focuses on tackling specific problems (rather than backing specific sectors or technologies), and makes a distinction between early stage R&D investments - which can be much broader, in the hope that some of them will lead to successful enterprises - and later stage applied R&D investments which need to become ever more focused.

In that sense, the industrial strategy green paper's identification of digital and technology as one of the government's growth sectors is a step in the right direction, although it is perhaps the broadest of the eight and therefore much will depend on how it is now developed into a fully-fledged sector strategy - with specific interventions identified for particular sub-sectors - by spring 2025.

Similarly, the previous government had identified five critical technologies - AI, engineering biology, future telecommunications, semiconductors and quantum technologies - for their "ability to build strategic advantage, create opportunities for growth and capitalise on existing UK strengths".[24] Most contributors felt that the new government should stick with this classification and now start to deliver on it (although some questioned the evidence base and the rigour that went into identifying those five in the first place).

24 Prime Minister's Office and DSIT, The UK Science and Technology Framework: Update on progress, 9 February 2024.

4. Embed innovation across the policy agenda

Several of our respondents stressed that the government should not lose sight of the fact that good innovation policy should serve as a means to a broader end, not as an end in itself. Therefore weaving R&D and innovation throughout the new government's five missions and into its ambitions for regional economic development will be essential. In this context the announcement in the Budget of a £25m R&D Missions Programme is welcome.

Achieving this requires overcoming two major existing obstacles: disconnects within Whitehall, and regional over-concentration of R&D spending and outcomes.

For the former, it is important to prevent science and technology policy being seen as 'wonky' (or, in the words of one of our respondents, as "having a conversation with itself") and disconnected from the rest of Whitehall. In this, DSIT has a major role to play by acting as a genuinely cross-government department and embedding emerging technology policy across all five missions, in support of the other big scientific departments - such as the Ministry of Defence (MoD) and the Department for Health and Social Care (DHSC) - and in making the case to HM Treasury in particular that science, innovation and technology clearly adds value to the government's wider economic policy and industrial strategy.

For the latter, we heard how a lack of focus on the geographic spread of investment in recent years meant that, as one respondent put it, "the UK government's R&D policies have effectively been acting as an anti-regional policy for some decades". The National Endowment for Science, Technology and the Arts (NESTA) has estimated that many parts of the UK have missed out on government R&D spending to the tune of £4 billion each year - money it argues could have leveraged a further £8 billion from the private sector[25].

To address this, the government should link its innovation policies to its aim of raising productivity levels in those parts of the country which are currently lagging behind - something it has emphasised in both the industrial strategy green paper (which has a whole section dedicated to 'place') and the overarching growth mission, where the full ambition is to "secure the highest sustained growth in the G7 - with good jobs and productivity growth *in every part of the country* making everyone, not just a few, better off"[26] (our emphasis).

5. Don't fetishise the frontier

With an established R&D strategy in place, and Government having made the difficult but vital decision to prioritise certain sectors over others, the strategy then needs to be broken into separate individual plans that are sensitive to the differences between and within those sectors. A single framework approach won't work for all three of our chosen focus areas of AI, space and quantum computing, let alone for all other sectors or technologies.

In developing these plans, it is important for the government to pay attention to the practicalities of what works. This means not becoming fixated on what

25 Tom Forth and Richard Jones, NESTA, The Missing £4 Billion: Making R&D work for the whole UK, 27 May 2020.

26 The Labour Party, 5 Missions for a Better Britain: Secure the highest sustained growth in the G7, September 2023.

respondents described as "the new and shiny" (a criticism several respondents levelled at the previous government) at the expense of enabling R&D in traditional sectors where the UK has existing strengths. Neither should the government assume that a single technological solution can act as a substitute for investment or hard work.

Several of our respondents highlighted that the space sector can be particularly vulnerable to this risk. The image in the public eye (and therefore often in that of politicians) is of astronauts and rocket launches, which misses the extent to which our space and satellite sector functions as a basic, everyday utility (in need of attention and investment in much the same way as roads or hospitals) and how critical it is to national security or climate objectives. Respondents gave the example of how satellite technology is being used to measure methane and carbon dioxide emissions as part of efforts to reach net zero[27]. The UK can gain considerably by focusing its efforts in the space sector on those areas where it has most to offer - such as data or In-Orbit Servicing and Manufacturing (IOSM) - rather than in those more attention-grabbing aspects where it may not (notably heavy launch capability).

6. Run concurrent long- and short-term growth strategies

The incoming government has sought to make a virtue of its commitment to long-termism and stability, including an overall pledge to deliver "a decade of national renewal". Should Labour win a second term and thus govern for the whole of that decade, we would hope this long-termism would continue and for policy stability to endure for at least ten years. Yet equally respondents were looking to the new government to establish a broader cross-party consensus on the virtues of greater stability in science and technology policy that could also survive a change of governing party in future.

Our respondents saw this as a welcome note to strike, especially in sectors and technologies that are often characterised by significant upfront costs and where significant policy changes every five years (or, as has recently been the case, more often even than that) can be especially disruptive. Aligning policy horizons with investment horizons - so talking in terms of ten rather than five years - would make a real difference. Other democracies are able to do this and the UK should seek to do the same.

Similarly, respondents argued that a new government of a different political stripe should be mature and confident enough to maintain those elements of its predecessor's agenda which are working well. Several suggested, for example, that the new government, when establishing its industrial policy, should look at what it could rejuvenate from the 2017 strategy produced by then Prime Minister Theresa May and then Secretary of State for Business, Energy and Industrial Strategy Greg Clark[28]. Some contributors pointed out that in parts of the country, at regional and local level, elements of this programme had continued to be delivered long after May's successor Boris Johnson had abandoned the national level strategy.

However, as one respondent pointed out, "economic growth is not just one thing: there's long-term growth and short-term growth". To ensure people

27 David Willetts, ConservativeHome, How ventures in space bring benefits to earth - and not least to Britain, 17 January 2023.

28 BEIS, Industrial Strategy: Building a Britain fit for the future, November 2017.

across the country begin to feel an immediate ease in cost of living pressures, and to meet the political imperative of demonstrating early success, the government will have to pursue certain policies that are short-term in nature and deliver benefits quickly. Meanwhile the transformative changes that reformed R&D and innovation policy can unlock - especially in the sectors and technologies we have considered here - are by their nature long-term and will likely not pay off within a single parliament. The challenge for a new and very busy administration is to develop and then run those two distinct strategies simultaneously.

Chapter Two: Regulation

The UK has the potential to be a genuine world leader in the regulation of innovative technologies. Yet there is also much to improve in the current system: the regulatory architecture too often acts as a barrier to innovation, a bottleneck just at the moment before the moment of commercialisation. It's an area where the new government has considerable potential headroom to make changes, without spending lots of money, and could start to see benefits quickly.

Venture capital firm Form Ventures has argued in its 'Fix the Regulators' campaign that reform should focus in three areas: resources, rules and risk appetite.[29] Many of our conversations for this report focused on the last of these, noting that effective regulation of frontier technologies may require shifting from an overly cautious approach to one that encourages more experimentation. This must be balanced with the need to provide certainty within the regulatory environment to encourage long-term investments in capital-intensive areas such as space infrastructure, as well as ensuring appropriate levels of protection for workers, consumers and citizens.

Our contributors agreed that regulators themselves need to be better-resourced, and that this is as much about skills and expertise as it is about funding. We also discussed the particular challenges that fast-moving technologies pose for a rules-based system that needs to balance agility with accountability to parliamentarians. Our conversations also ranged beyond Form's "three Rs", considering how regulators can and should be more open and collaborative, as well as considering where UK regulation fits into the global picture.

There is also a clear link to what we have covered in Chapter 1: good regulation flows from good strategy. While the UK's regulators are rightly independent of government, they nevertheless operate in a context set by elected politicians and will respond to the overall direction of the government of the day. DSIT has a vital role to play here: the Chief Scientific Adviser has previously argued that the Secretary of State should "set out government's regulatory reform priorities in science and technology and oversee and support the implementation of a pro-innovation regulatory reform plan across government"[30], a recommendation that the previous government accepted and committed to implementing[31].

29 Andrew Bennett and Leo Ringer, Form Ventures, Fix The Regulators, 20 February 2024.

30 Professor Dame Angela McLean, Chief Scientific Adviser, Pro-innovation Regulation of Technologies Review: Cross-cutting and Growth Duty Recommendations, November 2023.

31 HM Government, Response to Professor Dame Angela McLean's Pro-Innovation Regulation of Technologies Review: Cross Cutting, November 2023.

The new government's initial commitments and actions

In opposition, Labour campaigned on a pledge to "make Britain the best place in the world to innovate"[32] and promised in its manifesto to "ensure economic regulation supports growth and investment, promotes competition, works for consumers, and enables innovation".[33]

Its major initiative in this area since coming into office has been the establishment of a Regulatory Innovation Office (RIO)[34] . The RIO is a new unit within DSIT, incorporating the existing functions of the Regulatory Horizons Council (RHC) and the Regulators' Pioneer Fund (RPF), and overseen by the Science Minister. Its stated aim is to "support regulators to update regulation, speeding up approvals, and ensuring different regulatory bodies work together smoothly" and it will initially focus on a small number of sectors, including space and healthcare AI.

The RIO was a manifesto commitment for Labour, first announced in October 2023[35] as having three major responsibilities:

1. Setting and monitoring targets for regulatory approval timelines, benchmarked against international comparators;

2. Providing strategic steers for the activities that regulators should prioritise (drawn from the Industrial Strategy); and

3. Supporting a "beefed-up" RHC with a requirement to respond to its reports within a set time period.

The unit is now getting up and running (at the time of writing the government is recruiting its first chair), and the publication of its initial priority sectors reveals where its work will be focused, though there is still much to be determined as to its ultimate mandate, power and resources.

The new body will need to navigate a complex web of interactions with other existing regulators, from the Medicines and Healthcare products Regulatory Agency (MHRA) and the Information Commissioner's Office (ICO) to Ofcom and the Civil Aviation Authority (CAA), and those organisations' established mandates as well as their overall cultures. Yet the very existence of the unit, and its announcement within the new government's much-vaunted first 100 days, demonstrates the extent to which it sees the drivers of innovation as being genuinely cross-cutting and the need for coordinated action across government to maximise the benefits.

32 Peter Kyle MP, post on X, 29 October 2023.

33 Labour Party, Change: Manifesto 2024, p.28.

34 DSIT, Game-changing tech to reach the public faster as dedicated new unit launched to curb red tape, 8 October 2024.

35 Labour Party, Labour will end regulatory backlogs to give the public access to life-saving treatments sooner, 28 October 2023.

What should come next?

7. Get the balance right on risks v benefits

The majority of our conversations regarding regulation revolved around how to ensure the UK's system is best set up to encourage innovation and to allow companies to take (calculated) risks in pursuit of it. Most of our respondents felt the current system was too risk averse, with the statutory Growth Duty - which is supposed to operate as a stimulus to innovation - poorly understood. Respondents told us that there is currently no system in place to evaluate how well the Growth Duty is being implemented, and research suggests that awareness is limited primarily to regulators themselves.

Some of our respondents put this down to broader cultural expectations: "regulators tend to get a lot of flak when things go wrong, but no-one notices when they get it right". Equally, some argued, a certain type of person is attracted to work as a regulator: those who want to protect people, and prevent an industry from causing harm. This 'check and balance' role is vitally important, but many of those we spoke to felt the tendency at the moment is for regulators to see risk much more readily than they see opportunity.

AI was cited as a case in point. While the previous government's AI strategy explicitly centred on opportunity and driving innovation while taking risk into account, there was a perception among respondents of a marked shift to a more risk-focused approach in recent years - notably with the hosting of the AI Safety Summit and the establishment of the AI Safety Unit. One respondent characterised this bluntly as "an attitude of complacency, followed by one of panic". The new government looks inclined to redress the balance here, with the new launch of an AI Opportunities Unit and the recent publication of the AI Opportunities Action Plan[36].

A similar impulse sits behind Chancellor Rachel Reeves' assertion in her Mansion House speech last year that "the UK has been regulating for risk, but not regulating for growth" and her announcement that financial services regulators will be issued with new "growth-focused" remits ahead of the publication of a Financial Services Growth and Competitiveness Strategy as part of the broader Industrial Strategy package[37].

Set against this, though, it is worth stressing the views of those respondents who were wary of such arguments causing the pendulum to swing too far the other way, with consumer, worker and citizen rights being compromised in a bid to create a regulatory framework too focused on 'getting out of the way' of entrepreneurialism.

The fact is that new technologies are always going to have the potential for harm, and the shared view of our respondents was that the UK needs to get better at taking a more nuanced view of this, determining from where exactly such harm might arise and then mitigating against that specific risk rather than acting too broadly. Regulation of fast-moving technologies needs to be coherent and predictable while agile enough to take new developments into account. That is not an easy path to tread, but it is a vital one for government and regulators to get right.

36 Matt Clifford, AI Opportunities Action Plan, DSIT.

37 HM Treasury (HMT), Chancellor fires up financial services sector to drive growth, 14 November 2024.

8. Encourage regulators to do more thinking aloud

Several industry contributors to our research made the point that they would welcome regulators being more comfortable 'thinking aloud': being more transparent about how they are wrestling with a particular problem at an early stage, rather than waiting until they had answered every question before pronouncing on an issue. With fast-moving technological developments in particular, a lot can happen while the sector is waiting for the regulator to announce its view to the world, and as one contributor put it: "it's hard to innovate around a vacuum".

One contributor pointed to the value of regulators issuing 'position papers' on emerging technologies and of talking publicly at a more nascent stage about their thinking. This is something where the Financial Conduct Authority (FCA) was seen as having been effective[38], alongside its use of a regulatory 'sandbox' to enable industry players - including in AI and quantum - to test new products in a controlled environment[39] (notwithstanding wider concerns about the FCA's effectiveness articulated in a recent parliamentary report[40]).

Private firms can find it invaluable to understand when a regulator is considering or scoping certain actions, and the regulator in turn can use such exercises to test the temperature with a particular sector before taking a decisive view on where to place regulatory parameters. Further developing this regulatory approach in the UK can make it a more attractive destination both for new companies to establish themselves and for existing companies from elsewhere in the world to establish new subsidiaries.

9. Ensure regulators have the right resources

A pro-innovation approach to regulation requires sufficient regulatory capacity to deliver. Funding is critical, and without meaningful sums of money to dedicate to encouraging (and overseeing) innovation, regulators are likely to deprioritise it in favour of their core mandates and business as usual. Emily Miles, Chief Executive of the Food Standards Agency, has set this out bluntly: "We really want to be able to respond to innovative and emerging food technologies but our current resource constraints, and the legal strictures of the current regimes, mean we can't do as much as we'd like"[41].

The funding gaps for regulators can often be relatively small - especially in relation to overall R&D spending - and yet addressing them could yield substantial benefits in terms of innovation, and overall productivity and economic growth. The RPF was established in 2017 in part to tackle precisely this challenge, though its initial allocation of funding was only £10m[42]. Its absorption into the new RIO - and the political prominence attached to the new unit - is an encouraging sign that the RPF might be able to play a bigger role in future.

38 Nikhil Rathi, Financial Conduct Authority (FCA), Our emerging regulatory approach to Big Tech and Artificial Intelligence, 12 July 2023.

39 FCA, Regulatory Sandbox, accessed 28 November 2024.

40 Martin Arnold, 'Incompetent' UK financial regulator slammed by parliamentarians, Financial Times, 25 November 2024.

41 Andrew Bennett, The Form Playbook Interview: Emily Miles, FSA, on food startups and regulation, 10 September 2023.

42 BEIS and Kantar, Evaluation of the Regulators' Pioneer Fund (round 1) - Main Findings Report, July 2021.

Yet it is about more than just funding. A critical skills gap also persists within many regulatory bodies, who often face a steep learning curve as the markets they oversee transform rapidly. Effective regulation of advanced technologies requires regulators to have a deep understanding of these fields, yet there is often insufficient expertise within key regulatory agencies. This lack of knowledge contributes to delays and inefficiencies, highlighting the need for greater recruitment and retention of the right skills and expertise to align regulation more effectively with the pace of technological advancement. This remains an open question in relation to the newly-established RIO: it is not yet clear what funding the organisation will have to recruit staff (at present it has only advertised for a Chair and two policy advisers).

Our discussions also covered the potential to move more regulators towards an industry-funded model, expanding regulatory capacity and in turn accelerating approval timelines. One contributor pointed to the different culture at Ofcom, the communications regulator that does operate on an industry-funded model, which is considered to have a much greater awareness of its audience and its 'clients' (though safeguards to avoid the risk of 'regulatory capture' would be important).

10. Set rules and delegate powers without sacrificing accountability

Regulators derive their powers from the executive and the legislature, and operate in a rules-based framework set by both. Yet as technology develops ever faster, it becomes harder and more cumbersome to return to parliament every time those rules need amending to reflect changed reality. One answer is to delegate ever more power to the regulator to adapt their own rules more rapidly, though this starts to raise questions about regulatory accountability and a potential democratic deficit.

One contributor emphasised ensuring that decisions were made based on the right moment for regulatory intervention: a reminder that it is the application of the technology, not the technology itself, that should serve as the trigger. As they put it, "good regulation should be technology-agnostic". Another pointed out that previously some UK regulators have used a 'traffic light' system for the regulation of emerging technologies and wondered if it might be worth returning to something like this again, given that it is often not possible to wait for new primary legislation to be passed.

As a counter to that view, though, a third pointed out that the Covid-19 experience showed that it is possible to pass legislation very quickly if needed, and we should be wary of departing too far from the primacy of parliament in establishing the rules under which innovative technological applications should operate.

A quick win in relation to rules would be for government to ensure greater awareness of and compliance with existing statutory guidance. As mentioned above, the Growth Duty - established in 2015, recently expanded to cover Ofcom, Ofgem and Ofwat and refreshed last year[43] - is not felt to be currently being effectively implemented or monitored.

Meanwhile, if most significant rule-making powers remain in the hands of elected politicians, then regulators need a clear means of communication

43 DBT, Growth Duty: Statutory Guidance Refresh, 21 May 2024.

with the government as to when they consider changes need to be made, and such requests need to be taken seriously. Again, the government commitment when establishing the RIO - that it will act more quickly on recommendations from the RHC - is welcome in this regard and, if implemented, would address a concern that several of our contributors raised about the pace and effectiveness of regulator-to-government dialogue. The government should consider how to embed a 'quick reaction' element into the RIO as it is being established, with a specific focus on supporting regulators to get up to speed quickly on technological developments and to be as well-placed as possible to respond to them.

11. Lead the way on international standards

The UK also needs to consider its regulatory architecture in the international context, looking at where it should compete and where it can benefit from convening and collaborating.

One contributor argued that in the past the UK's world-leading outcome-based regulatory approach had actively brought firms to the country, but was much less confident that this was still the case today. This is not necessarily because the UK approach has worsened, but more that others - allies and partners, as well as traditional rivals - have moved beyond the UK by taking bolder steps. They are setting national regulations that encourage innovation and attracting firms that might otherwise have come to the UK. The government needs to respond to this, while maintaining a clear sense of its own values and ethics and not engaging in a race to the bottom on standards. As one contributor put it, the UK needs "to compete while maintaining the moral high ground". Many contributors pointed to AI as a particular sphere where the UK should look to establish and consolidate a lead, given that many companies feel the EU's approach is actively deterring innovation.

At the same time, the UK should look to existing strengths where it can play a leadership role and bring international governments and regulators together. As with the difficult choices involved in domestic industrial policy, this requires being realistic and selective as to where the UK might be best placed to act. Examples given by our contributors included the legal, financial and insurance aspects of space regulation - such as developing space clutter removal bonds or developing arbitration processes governing low-earth orbit - as well as the nascent regulatory framework around quantum computing, especially when it comes to ethics and the protection of intellectual property.

12. Promote collaboration with government, with industry and between regulators

The need to break down siloes and improve collaboration - within government, but also across regulators, industry and beyond - was a recurring feature in our discussions for all three chapters of this report.

As previously covered, central government needs to operate in a genuinely cross-departmental manner and send a single, coherent message out to both regulators and industry as to what it is trying to achieve. The continued prominence of DSIT under the new government, and the creation of the RIO within it, should help with this, as should the establishment of the Science and Technology Cabinet Committee. The RIO could play a helpful role by acting as a central, signposting function for industry where multiple regulators might be involved in assessing and overseeing a particular innovation.

Beyond that role, though, some we spoke to stressed that for the RIO to function not just as a setter of "priorities for regulators which align with the government's broader ambitions" but also an enforcer, it will need to have 'teeth'. The Science Minister's comments that the RIO's role will be to provide "political support", to "give cover" to regulators and to operate via "incentive and permission" means that it may err on the side of soft rather than hard power. In this sense it has echoes of the Digital Regulators Cooperation Forum (DRCF) – formed of Ofcom, the ICO, the Competition and Markets Authority (CMA) and the FCA – which coordinates the activities of the main digital regulators but which some argue has struggled to make an impact.

Several of our contributors also spoke of the vital importance of regulators working effectively with industry when carrying out their work - as long as both retain the central insight that good regulation should have the interests of the citizen at its heart. We heard of how the FCA's work on cryptocurrencies, for instance, was seen to bring a lot of firms to the UK in the first place. Yet today, there are firms in other sectors looking to leave the UK because they do not feel that regulators are sufficiently responsive. Done well, this should be a two-way street: businesses helping regulators to better understand the technologies they are seeking to regulate, and firms benefiting from a more tailored regulatory regime (or at the least an appreciation of why a regulator has come to a particular conclusion).

13. Take a fresh look at competition policy

One institution which came in for particular focus during our discussions was the CMA, and the role it can play in enabling a pro-innovation environment. This situation has developed further since we conducted our interviews and held our roundtable, with the change of CMA chair last month[44].

Some contributors suggested it may be time to look again at the CMA's remit, broadening it out to make it more holistic. The CMA process involves looking backwards at past performance rather than focusing on current developments or looking ahead to the future - an approach which almost by design risks missing out on the potential benefits of new innovations. The CMA's pure focus on the consumer interest - dating back to the Enterprise Act 2002 - can also lead to an emphasis on low prices above all else, blocking some mergers and acquisitions when there might be an argument in favour of consolidation.

The CMA also interacts with a range of other sectoral regulators where they share competition powers under an arrangement known as concurrency. As one respondent pointed out, this arrangement has not always functioned effectively, and as the government considers the outcomes of the CMA's recent review of concurrency it should consider how to embed consideration of innovation as a consumer benefit - and not just a consumer harm - into that arrangement[45].

The outgoing Conservative government already sought to change the competition landscape to a certain extent, with the Digital Markets, Competition and Consumers Act 2024 making more of a distinction based on scale: exempting smaller mergers while increasing scrutiny of vertical or

44 DBT and Competition and Markets Authority (CMA), Former Amazon boss named interim chair of CMA, 21 January 2025.

45 CMA, Review of the competition concurrency arrangements, 19 December 2024.

conglomerate transactions where the acquirer is a large company. It also passed the National Security and Investment Act 2021, which superseded the Enterprise Act's public interest merger regime provisions and introduced proactive screening for national security issues in 17 distinct areas (including AI, quantum computing and space).

As such, the new government inherits a landscape in which competition policy is increasingly seen as interdependent with questions of national security and economic resilience rather than purely driven by the consumer interest. This is arguably belated, given that such a shift happened much sooner in the USA and Europe, and the establishment of a standalone foreign investment regime simply brings the UK in line with the likes of the US, France and Germany. It is also going to take time to bed in: the new Investment Security Unit (ISU) established by the 2021 Act has been criticised for focusing on too large a number of transactions and "losing sight of the wood for the trees", although a recent report shows a lower proportion of reported transactions brought in for full review, implying an increase in confidence and efficiency from within the ISU in determining which transactions require full scrutiny.[46]

Nevertheless, the new government will need to make a strategic choice about how it develops and applies competition policy in a changed and changing geopolitical context, and how it balances the development of national champions that can compete at scale globally with a desire to see healthy domestic competition driving prices down and value up. Space is a case in point, with consolidation already happening in both satellite and terrestrial communications, and where the government will need to make strategic decisions about how it responds to those developments and how it wishes to support the UK sector.

46 Cabinet Office, National Security and Investment Act 2021: Annual Report 2023-2024, 10 September 2024.

Chapter Three: Institutions and funding

Several of our contributors felt that the UK's institutional and funding landscape for innovation is fragmented, and that those institutions which do show the most promise are often still nascent. The incentivisation of current institutions to collaborate and leverage synergies - such as sharing the costs and benefits of mutually beneficial programmes or promoting "dual-use" technologies - is not as effective as it could be.

This is not to say that stakeholders are looking for the new government to carry out sweeping institutional changes. Far from it; political and institutional instability has proven to be the enemy of long-term investment. In that context, the government's decision not to embark on major machinery of government changes, and its commitment to long-term funding settlements for at least part of the R&D environment, are positive steps.

The new administration should now think about how it can build on this start, and where improvements can be made within the existing system so that it functions more effectively. This is partly about encouraging a more open, collaborative approach within and between institutions, and partly about ensuring both public and private sources of funding are targeted towards encouraging innovation and raising productivity. The forthcoming Comprehensive Spending Review (CSR) offers an obvious opportunity to embed innovation within departmental budgets, but more broadly the government should think strategically about how it leverages its powers of procurement to drive innovation - while in turn applying that innovation within its own operating system - and about the signals it can send to encourage the private sector to follow suit.

The new government's initial commitments and actions

The incoming administration has signalled continuity by leaving its predecessor's machinery of government changes in place: maintaining the recently-established DSIT and seeking to expand both its scope and size. The department will incorporate experts in data, digital and AI from the Government Digital Service (GDS), the Central Digital and Data Office (CDDO) and the Incubator for AI (i.AI) in its bid to become "the digital centre for government"[47].

In another sign that the new government is comfortable keeping institutional arrangements it perceives to be working from the old regime, Secretary of State Peter Kyle has also praised the work of the AI Security Institute (which he has also now renamed from AI Safety Institute, reinforcing its significance to national infrastructure)[48] and committed to build on its work so far[49]. As one

47 DSIT, DSIT bolstered to better serve the British public through science and technology, 8 July 2024.

48 Tackling AI Security Risks to Unleash Growth and Deliver Plan for Change, DSIT, February 2025

49 London Tech Week, London Tech Week 2024: Keynote and Q&A with Peter Kyle, 5 July 2024.

of the first steps in doing so, the new government has announced the creation of a new AI Opportunities Unit within DSIT (alongside the commencement of work on the new AI Action Plan)[50].

Labour has made much in both opposition and the early days of government of the contrast between its promise of certainty, stability and long-termism and what it presents as the "chaos" of the preceding years. In innovation policy, this has manifested itself most clearly in the commitment to ten-year budgets for "certain R&D activities"[51]. This is part of a broader commitment to more long termism in the public finances, with the Chancellor of the Exchequer having launched a multi-year spending review which will conclude in June 2025 and set departmental spending plans for a minimum of three years.[52]

Labour also undertook in its manifesto to simplify government procurement processes so as to "support innovation and reduce micromanagement" as part of its overall mission-driven approach to government[53]. The new government delayed implementation of the Procurement Act 2023 until February 2025, allowing time for Cabinet Office Minister Georgia Gould to revise the National Procurement Policy Statement (NPPS) so that it meets "the challenge of applying the full potential of public procurement to deliver value for money, economic growth, and social value"[54]. Government has now published a new National Public Procurement Policy Statement, which came into effect on 25 February 2025. It signals government's expectations of public procurement as an enabler of innovation, greater opportunity for smaller suppliers and progressive employment practice[55].

What should come next?

14. Develop stable, long term funding streams

Everyone we spoke to welcomed the new government's commitment to ten-year research funding settlements for R&D. They felt that in the past the absence of such an approach had led to public spending being spread too thinly across numerous initiatives, and that the lack of certainty had made it difficult to leverage in much-needed private sector capital. The next question for the government will be to define what precisely it means by "certain R&D activities" and therefore what is eligible for a longer-term settlement. One option could be to look at individual sectors or technologies - such as those we cover in this report - and consider where they may benefit from the certainty of ten-year funding commitments.

Similarly, the return - as of June 2025 - of multi-year CSRs for all other areas of government spending was seen as a welcome shift from recent years which

50 DSIT, AI expert to lead Action Plan to ensure UK reaps the benefits of Artificial Intelligence.

51 DSIT, Peter Kyle's speech at the Campaign for Science and Engineering Conference, 11 September 2024.

52 HMT, Fixing the Foundations: Public spending audit 2024-25, p.2.

53 Labour Party, Change: Manifesto 2024, p.35.

54 UK Parliament, Written Ministerial Statement: Procurement Act 2023 update, 12 September 2024.

55 Thousands of small businesses to benefit from new government buying rues, boosting local jobs, growth and innovation, Cabinet Office, February 2025

looked no further than 12 months ahead at a time. Respondents were keen to see support for innovation at the heart of the next CSR given its role as a proven driver of economic growth. This requires a concerted effort, though, if it is to happen. As one contributor put it, "a CSR isn't like figure skating: you can't come second in every department's list of priorities and still win".

15. Demystify the institutional landscape

One observation that we heard consistently from our contributors - across a range of sectors and holding a variety of roles - was the difficulty that many people and organisations find in trying to navigate the institutional landscape of UK research and innovation policy. Start-ups and SMEs in particular find the set-up confusing; they are often unable to parse departmental responsibilities, to find direct lines of communication to those they need to speak to, and - perhaps most critically - to determine where to go to access funding.

While we heard different views on the strengths and weaknesses of individual institutions, the overall picture was of a machine in which not all elements are working effectively. This also means that those institutions which are generally seen as operating well - many respondents cited both ARIA and Innovate UK - are doing so relatively under the radar, without the recognition they perhaps deserve nor their good practice being shared with other organisations.

Government could make a real difference through a concerted effort to demystify these institutional arrangements and the processes they oversee: by ensuring each organisation sets out clearly its mandate, its objectives and rationale for them, the timetables to which it is operating and the means by which stakeholders can engage with both the institution and its processes.

16. Model open, collaborative ways of working

Government should concentrate not just on reforming individual institutions but on looking at the overall institutional ecosystem and how it functions. Science and technology should be seen as enabling capabilities, core to all departments' work and so with a coherent approach across Whitehall. In one sense the creation of DSIT in 2023 recognised this point, but it also saw certain policy functions moved out to other departments - including DBT, the Department for Education (DfE) and the Department for Energy Security and Net Zero (DESNZ) - which risked some elements of science and technology policy being moved to the margins, and teams working on similar issues no longer connected to or collaborating with one another.

Certain steps the new government has taken - such as expanding the remit of DSIT and establishing the Science and Technology Cabinet Committee, chaired by the Prime Minister[56] - suggest that it is moving in this direction, but it will require continued and concerted effort. It will also be important to develop and embed a clear vision for how DSIT should operate: will it be a Cabinet Office style 'horizontal' department, supporting other more traditional line ministries and playing a role in the delivery of all five missions? That would seem to make sense, but to do that effectively it needs to be empowered from the centre to genuinely influence the behaviour of other departments.

Several of our contributors in particular pointed out how the UK should be doing more to unlock the dual use capabilities of some breakthroughs, notably

56 Cabinet Office, List of Cabinet Committees, 21 October 2024.

those in defence and security. As one contributor noted, "in many cases [an innovation] is not classified until used for a specific application", and so its benefits could be felt more widely if an enabling environment was in place. The same was seen to be true elsewhere, with many technologies and innovations potentially able to be applied much more widely but, as one contributor put it, "the mechanisms for engagement are a nightmare, and not at all open".

This more open, collaborative approach also means being more porous between public and private sector in terms of personnel, and trying to get more expert and unusual voices into government where possible. Several contributors spoke of the way that the AI Security Institute is doing this effectively - in a way they thought the civil service rarely does - while another argued that UKRI should look to broaden its skillset to include social scientists.

17. Maximise the power of Government as a purchaser

One in three pounds of public money - £300bn a year - is spent via public procurement[57]. Many of our contributors highlighted the extent to which they believe this is a dramatically under-used lever in efforts to unlock and diffuse innovation. Before taking up his role as Science Minister, Sir Patrick Vallance argued that government should introduce more of a "procurement pull", making it easier for companies using technologies that have been developed via public research funding to bid for public sector contracts[58]. In this way, the government can catalyse the commercialisation of these technologies and realise the successes of public investment domestically.

Procurement policy could also better facilitate innovation by shifting to a more outcome-oriented approach and opening up the system to smaller and more early-stage companies. Many contributors felt that the current system is too prescriptive about the specific solution required, rather than identifying outcomes and capabilities. Rather than a system that incentivises risk reduction and tends to default to the bidder with the lowest price point, the Government should use a broader set of criteria for assessing bids and build ongoing evaluation and feedback into the process to encourage greater experimentation. This approach could also help to end the current scenario where many government departments' procurement functions have become overly reliant on their largest customers.

Linked to this, many of our contributors also argued strongly in favour of moving from a grant-dominated model of funding to one that is much more geared towards contracts. The existing grant funding model - where available capital is usually between £100,000 and £1m at a time - does not work for everyone, and tends to lock out smaller and more early-stage enterprises. There was a strong sense that a grant-based model worked against incentivising innovation, because bidders feel the pressure to minimise potential risks in order to secure funding. The Government's revised Public Procurement Policy Statement is a positive step in this direction, given its explicit focus on enabling greater access to public sector contracts for smaller companies[59].

57 Government Commercial Function policy paper, The Procurement Act - a summary guide to the provisions, 16 June 2022.

58 The Form Playbook, Sir Patrick Vallance: "If you're a regulator, the incentive to take risks is virtually zero", June 26 2024.

59 National Procurement Policy Statement, Cabinet Office, February 2025

And yet as things stand contracts are thin on the ground and can be tortuously slow to agree: one contributor described their experience of taking three years to negotiate a contract with a public agency for data provision, a delay they attribute to HM Treasury rules. The government should look at reforming existing institutions to move to models featuring both contracting and grant-making, with an emphasis on the former where possible.

18. Target funding geographically and at "the innovation gap"

As mentioned above, R&D funding in the UK is highly geographically uneven. In 2019-20, just five institutions within the 'golden triangle' of London, Oxford and Cambridge received over a third of all recurrent research funding in England: 3% of institutions being given 35% of the total money available[60].

The international success of the golden triangle is something of which the UK should rightly be proud. The region contributes more than £94bn annually to the UK's economy and supports over 250,000 jobs[61]. Its continued success was at the heart of recent announcements by the Chancellor to unlock the potential of the 'Oxford-Cambridge Growth Corridor'[62].

However, such stark over-concentration of investment has significant knock-on effects elsewhere, compounding regional inequality in the UK. This is something that the new government has committed to reversing.

The government should consider first of all looking at how it can increase the percentage of research funding that is awarded to domestic companies - one contributor pointed out that in the US, 51% of government grants go to American companies, and there are conditions attached about establishing operations within the country - and beyond that the regional distribution of that funding and the companies that it is awarded to.

Alongside geographic targeting, contributors also pointed to the "innovation gap" in the funding landscape: while government funding is often focused on early stage R&D, and venture capital can come in at the commercialisation stage, the intermediate step of innovating with existing ideas and technologies is missed and becomes something of a "no-man's land". (Or, where it does exist, it is mostly grant-based and suffers from limited awareness and/or follow-through.)

This lack of formal innovation funding programmes effectively breaks the chain between R&D and commercialisation. And yet if the government can get this right, such programmes can be a highly effective means of helping industry leverage and combine several technologies - such as space, quantum computing and AI - for application across multiple sectors (for example, health, energy or defence). The government should look to expand existing schemes where they exist (but are perhaps too small to have a significant impact) as well as how best to connect R&D programmes with innovation programmes and then onward to commercialisation.

60 Connor McKenzie, The rebalancing act of public research and development, Higher Education Policy Institute, 20 October 2021.

61 Health Tech World, The UK Golden Triangle: a beacon for global health innovation, 30 October 2024.

62 HMT, Chancellor vows to go further and faster to kickstart economic growth, 29 January 2025.

19. Unlock the power of patient private capital

The level of investment required in particular sectors such as space is substantial, demanding both more public institutional funding and more patient private capital. Chancellor Rachel Reeves' proposed reforms to pension fund arrangements - announced in her November 2024 Mansion House speech - are an attempt to unlock the latter. She proposes consolidation in both the Defined Contribution (DC) and Local Government Pension Scheme (LGPS) markets to produce a series of "megafunds" that have the scale to make transformational investments[63].

This builds on her predecessor Jeremy Hunt's announcement of the 'Mansion House Compact' the previous year, under which some of the UK's largest DC pension schemes committed to investing allocating at least 5% of their default funds to unlisted equities by 2030[64]. In November 2023, FGF advocated for consolidation of the kind that Reeves has now proposed in our second Rebuilding the Nation report, *Pension reform that delivers for savers and the economy*[65].

The 2024 Mansion House speech also provided more detail on the British Growth Partnership (BGP), a British Business Bank initiative aimed at crowding in more of that institutional investment and directing it towards growth opportunities. The Chancellor argued that these pension proposals could unlock around £80bn, and she was clear that as well as that money being available for much-needed infrastructure investment, it can and should also be directed towards "exciting growth businesses"[66]. The government is now consulting on these proposals.[67] Getting the policy design right will be critical to ensuring that the new 'megafunds' are able to invest in innovative new companies right across the UK, in particular through smaller UK-focused private capital funds with a regional dimension, and that this element of the funding ecosystem is not lost with the drive towards greater consolidation and scale.

63 HMT, Pension megafunds could unlock £80 billion of investment as Chancellor takes radical action to drive economic growth, 13 November 2024.

64 Chancellor of the Exchequer Jeremy Hunt, Mansion House speech, 10 July 2023.

65 Andrew Dyson and JP Spencer, Rebuilding the Nation 02: Pension reform that delivers for savers and the economy, The Future Governance Forum, November 2023.

66 Chancellor of the Exchequer Rachel Reeves, Mansion House speech, 14 November 2024.

67 HMT and Department for Work and Pensions (DWP), Pensions Investment Review: Unlocking the UK pensions market for growth, 14 November 2024.

FGF