Submission to House of Commons Select Committee on Science and Technology

Proposal for an Independent "UK Office for Innovation and Industrial Strategy"

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November 2022

Background

This document has been prepared in response to the Chairman's request for a written submission expanding on a proposal made during David Connell's oral evidence to the Committee on 12th October 2022.

It draws on the findings of various detailed reports by the author, including *Is the UK's Flagship Industrial Policy a Costly Failure,* cited by Rishi Sunak, in his February 2022 Mais Lecture and *Leveraging Public Procurement to Grow the Innovation Economy,* an independent review for Prime Minister Theresa May. [1]

The Problem

There has been much recent debate about the need to accelerate UK economic growth, particularly through more effective application of the nation's strengths in science and technology and the creation of new, world class, STEM based companies.

Though attractive as a policy aim - growing more globally differentiated, innovative UK businesses would accelerate growth and increase productivity, tax revenues and average earnings, it is not a new one. And successive governments of all colours have failed to find the magic formula.

This is in large measure because incoming Ministers and their advisers lack the tools and information to do the job:

- The levers of innovation and industrial policy are spread across government. There is no overarching responsibility for policy and no meaningful co-ordination. Business and Research and Innovation Ministers from both major parties have expressed frustration over this situation for at least 20 years.

- The data required to monitor individual policy instruments is grossly inadequate and nowhere is annual spending on different policies, the business and financing challenges they are designed to address or their cost effectiveness in terms of outcomes, pulled together. In some cases, including Innovate UK and the British

[1] These and supporting research reports are available at:
< https://www.cbr.cam.ac.uk/people/research-associates/david-connell/>

Business Bank, even basic annual spending data is unavailable.[2] And a desire to justify existing programmes tends to lead to biased reporting.

- Policy debate is dominated by the best funded and organised interest groups – large UK and international corporations through the CBI, venture capital and private equity investment groups, and university research interests and their champions. Genuinely independent analysis tends to be limited in scope.

- Incoming business ministers rarely have relevant experience and change frequently.

Implications of Recent Events: R&D Tax Credits and BERD

Policy makers, probably including most incoming Ministers, have been unaware of the extent to which innovation policy spending is dominated by the Treasury led R&D Tax Credits scheme. Introduced in 2000 for SMEs, it has grown steadily in scope and generosity, and is forecast to cost £9.5 billion in 2021/2.[3] Together with the £1.2 billion a year Patent Box, also with dubious impact on business outcomes and open to gaming through multinational tax planning, these Treasury schemes cost around 20 times as much as Innovate UK's programme of R&D grants to businesses. Their expansion has arguably pre-empted expenditure increases on schemes capable of having a transformational impact on emerging STEM based companies, or indeed new ventures within established corporations. Despite the enormous cost of these Treasury led programmes, it has virtually no internal resource for policy analysis, relying instead largely on feedback from the CBI and other industry associations.[4]

September's surprise 60% increase in estimated UK business R&D (BERD) by the Office of National Statistics makes solving the long standing problems raised in this paper even more urgent. If the revision is correct it means that the UK's 20 year R&D shortfall, compared with government's overall target of 2.4% of GDP, has been eliminated overnight. Though it does not explain why the Cambridge STEM "cluster", which is three times larger than 20 years ago, is only a third as successful at growing STEM based companies with 1000 or more employees.[5]

[2] Innovate UK's annual reporting is limited to two sides of brochure style content within UKRI's Annual Report. The amount it spends with businesses is unspecified and there is no detailed information on the distribution of grant sizes, and support levels. This is required to assess their potential to have a transformative effect on companies pursuing VC backed and self-funded strategies, whose ability to match fund differs. The number and value of SBRI contracts providing 100% funding for R&D from lead customers in the public sector is also not published, partly because spending departments are not required to provide this information to Innovate UK, which has responsibility for the programme. HMRC publishes very detailed aggregate statistics on R&D Tax Credits and the Patent Box, but has refused to identify the largest recipients to facilitate detailed case study analysis of outcomes, even though this data is publicly available in published accounts and previous governments published an annual "R&D Scoreboard" providing the key information.

[3] HM Revenue and Customs Annual Report and Accounts for 1 April 2021 to 31 March 2022

[4] Discussions with Treasury officials

[5] See Chapter 7 of "Is the UK's Flagship Industrial Policy a Costly Failure".

Detailed analysis of the latest R&D Tax Credit Statistics suggests there are significant flaws in the definition of R&D or compliance processes used by HMRC, and hence the revised ONS statistics that now appear to mirror them. [6]

The potential scale of the uncertainty underlines the need for a new approach to ensure that innovation policy spending is better directed, coordinated and managed across Whitehall and its various agencies as a whole.

Getting to the Roots of the Policy Problem

The purpose of this submission is to propose a mechanism which would bring better information and analysis to this organisational problem at minimal cost, and in a way which would be independent of both party political and departmental interests, and have the potential to be enduring and adaptable to new policy imperatives.

It is also essential that funding is better directed at the key policy challenge: growing and retaining significant UK based STEM based companies to replace industries in decline. The amount of R&D undertaken by businesses is merely an unreliable, intermediate stage proxy for this objective. Undertaking large amounts or world class R&D within businesses which are then sold for their strategic value to an acquirer that commercialises their innovations elsewhere does little or nothing to achieve this goal.

The processes through which innovative STEM based businesses are created and grown are complex, and often counterintuitive; and the economic impact of venture capital in the UK's small open economy is very different to that in the US. In particular the role of university research inventions and venture capital in creating the UK's **most successful** new STEM based companies is regularly overstated. The founders of many of our most successful new STEM based companies, like Dyson, Arm, Renishaw, Aveva and BET365 started with neither. In contrast, founding a business with venture capital backing tends to be a route to acquisition, often by a foreign corporation, with the subsequent truncation of UK growth. This particularly applies to academic research spin outs, which tend to be VC backed from the start.

UK innovation policies do not currently address this dilemma. Cross government policy planning must ensure they do.

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[6] In the five years to 2020/21 total R&D spending reported by SMEs (companies with less than 500 employees) for tax credit claims increased by over 90%. At least 80% of the increase is explained by an increase in the number of claims (i.e. companies claiming to do R&D) with at most 20% due to an increase in the average value per claim. Expenditure recorded by large companies for tax credit claims actually fell by 20% in 2020/21.

HMRC's Annual Reports have been qualified in each of the last three years on account of fraud and errors in R&D Tax Credits totalling an estimated 4.9% of the total cost of reliefs. Though it seems quite plausible that the growth in R&D Tax Credit consultants, some operating on a payment by results basis, has led to an even larger percentage of dubious claims through exaggerated costs claimed for legitimate R&D projects and the inclusion in claims for normal updating and improvement programmes that would not meet the standard international definition of R&D.

Where to Look for a Solution

Resolving the organisational and data problems raised in this paper will not win elections. But creating an enduring solution, acceptable to both the current and future administrations, would help ensure public funds are deployed more cost effectively and build a stronger British economy over the long term.

Though the problem is rarely debated, there have been some previous attempts to bring more coherence to cross government policies, notably the creation of the short lived Department of Economic Affairs in 1964 and the rather longer lived National Economic Development Office. The latter might be regarded as a partial success, even though the tri-partite committee structure it supported was flawed.

The effectiveness of suggested solutions involving the creation of a "super ministry" or ad hoc task force would be compromised by the reshuffles and frequent personality changes all governments engage in. And they would be unlikely to endure beyond the next change of administration.

The remits of existing bodies like Go-Science and the Prime Minister's Council for Science and Technology are overwhelmingly focused on "science" rather than the very different issues associated with the process of creating and growing significant, innovative, UK based companies.

Select Committees have neither the staffing or longevity in terms of membership to provide a solution on their own, though would greatly benefit from better data and analysis.

The most relevant existing role model that might point to a solution, though in a different policy sphere, appears to be the Office for Budget Responsibility.

Established in 2010 the OBR is best known for providing independent economic forecasts at the time of government budgets. But it also carries out independent analyses of the public finances and publishes occasional reports during the year. With just 30 permanent staff the OBR operates in a relatively low key manner during most of the year and is highly regarded. Though funded by the Treasury it is fiercely independent and has a strong governance structure to reinforce that independence.

Proposal

To address the problems outlined in this paper it is proposed that the Government establish an ***" Independent Office for Innovation and Industrial Policy".***

Its role should be:

- To define and evaluate the underlying problems affecting the growth of the UK's innovation economy, rather than just symptoms and simple aggregate metrics such as R&D spending

- To identify meaningful metrics against which the cost, progress and impact of policies designed to address these problems can be assessed, including relevant emerging national objectives, like UK self-reliance and levelling up/regional objectives, to which innovation and industrial policy can contribute

- To evaluate and assess policies and budgetary allocations against underlying policy challenges and related government objectives

- To specify the data and reporting process required from spending departments and agencies to enable individual policies to be monitored and evaluated

- To produce an independent annual report on Innovation and Industrial Policy objectives, policies, spending programmes, outputs and outcomes

- To publish independent reports on matters germane to its remit from time to time, including lessons from role model STEM successes and "missed opportunities'

The Office might be expected to have around 30 staff, roughly the same as the OBR, together with an appropriate governance structure to support its work and ensure independence.

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