REFORM

BYTE-SIZED BUDGETING

Funding digital services in government

Joe Hill   January 2025

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Reimagining Whitehall is one of the major work streams within this programme. This paper is part of our Reimagining Whitehall series.

ABOUT REIMAGINING WHITEHALL

This paper is part of the *Reimagining Whitehall* work stream. To effectively reimagine the State, major change must occur in the behaviours, processes, and structures of central government. This paper examines how the Government should fund the digital transformation of public services, to make them more effective and efficient. It sets out a model for HM Treasury to radically re-evaluate digital spending, focussing on an approach where approvals are proportionate to the size of the risk, and decision-making is far less bureaucratic.

Reimagining Whitehall Steering group
Reform is grateful to the expert members of the *Reimagining Whitehall Steering Group* who provide invaluable insight and advise on the programme. Their involvement does not equal endorsement of every argument or recommendation put forward.

Dr Henry Kippin, Chief Executive, North of Tyne Combined Authority

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Professor Jonathan Slater, Former Permanent Secretary, Department for Education

Rachel Wolf, Founding Partner, Public First; Co-Author, 2019 Conservative Manifesto

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Recommendations

Recommendation 1: Departments should re-baseline their budgets on a service-by-service basis, and establish parity of esteem between the ongoing run costs of digital products and other kinds of cost to deliver existing services, such as staff costs.

Recommendation 2: Transformation funding (both Resource DEL and Capital DEL) should also be re-baselined on a service-by-service basis, separately to the ongoing run cost of those services. Investment should be in proportion to how the performance of those services can improve or costs can reduce.

Recommendation 3: The new digital centre of government, in the Department for Science, Innovation and Technology, and HM Treasury should publish simple guidance on which elements of digital spending can be funded from Resource DEL and Capital DEL.

Recommendation 4: Digital, Data and Technology (DDaT) functions in central government departments should be funded centrally and sustainably.

Recommendation 5: HM Treasury should issue new guidance for managing portfolios of smaller transformation projects, as a separate category to Programme Business Cases. This portfolio approach should emphasise flexibility to reallocate funding internally throughout the financial year, based on a 'test and learn' approach.

Recommendation 6: Rather than assessing the value for money of the overall portfolio using a point-in-time business case appraisal, HMT, Cabinet Office and DSIT officials should be involved in the portfolio allocation process to give them insight into the value for money of specific investments. The portfolio board should also be supported by external expertise on technology and investment, e.g. via a departmental Non-Executive Director.

Recommendation 7: Assessment of the value for money of specific digital projects within a portfolio should be based on a light-touch business case, which emphasises the costs and benefits relevant to the baseline costs and performance of the service that project will transform.

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1. Introduction

The Government are betting that technology will save the State. As Secretary of State for Science, Innovation and Technology Peter Kyle said in a speech to the House of Commons, "technology is much more than just another sector to support…it is the foundation for every one of our national missions".[1] But they are not the first to pin their hopes on technological innovation. Ever since Harold Wilson spoke of how Britain would be "forged in the white heat of [the scientific] revolution" in his address to the Labour Party conference in 1963, successive governments have hoped that the forces of technological progress would improve the British economy and the operation of public services.

Digital technologies in particular hold huge promise, not just for a more productive economy but for a more efficient State. The National Audit Office's work has repeatedly concluded that "digital transformation and modernisation of [government] services and data are instrumental in achieving efficiencies, with huge gains to be achieved if all government services were modernised".[2]

However, the digital revolution requires re-examining approaches which the government has long used to administer the pre-digital State, and reforming them to make them fit for the modern world. After all, the explosion of the software industry, principally in Silicon Valley, has not been led by incumbent companies – it has birthed a whole set of new ones. James Plunkett describes the scale of the challenge:

> "Society didn't survive the Industrial Revolution by tweaking medieval policy instruments. We didn't expand the guilds, freeze the charges for turnpikes, and increase funding for the knights of the garter. We replaced the old system with a new one."[3]

There are many reasons why the digital revolution has not widely reformed the State – legacy technology, data sharing, risk aversion, workforce and skill shortages, and procurement approaches. These are extensively discussed elsewhere.[4] This paper focuses on the under-addressed challenge of how Government should fund the digital transformation it needs.

The Government still applies the same approaches to funding software as it does to any other kind of technology. Reform of this is overdue, as the NAO's 2023 report argued:

> "Digital change requires specific ways of investing, funding and procuring digital services...CDDO recognises that processes which work for other programmes are not always well-suited for digital programmes. The mission aims to ensure funding and governance models enable modern, efficient, and user-centric digital investments and services…it aims to address systemic barriers to digital transformation including financial processes and business cases".[5]

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[1] Peter Kyle, *Technology in Public Services*, vol. Volume 753 (House of Commons, 2024).
[2] National Audit Office, *Digital Transformation in Government: Addressing the Barriers to Efficiency*, 2023.
[3] James Plunkett, *End State: 9 Ways Society Is Broken - and How We Fix It*, 2021.
[4] Joe Hill and Sean Eke, *Getting the Machine Learning: Scaling AI in Public Services* (Reform, 2024).
[5] National Audit Office, *Digital Transformation in Government: Addressing the Barriers to Efficiency*.

Continuing the same approach to funding digital transformation will not yield transformative results. After all, a crucial part of the rapid growth of the software industry has been the development of innovative new financing models – principally the formation of venture capital funds to invest in startup companies, and the disruption of the tech industry (and others) by those companies. A different funding model will also be crucial to digital transformation in the State, because how public money is spent is as important as how much is spent. As the Chancellor of the Duchy of Lancaster, Pat McFadden, said last month:

> "The old debate was focussed almost entirely on the size of the budget. The only announcement that mattered was the spending attached to it… But the size of the budget is not the only question. It's what are you using it for, what will the outcome be, how will you organise people to make sure it happens."[6]

In particular, this paper discusses ways that digital funding is 'squeezed', constantly under pressure compared to other priorities for funding, and 'slow', bogged down by bureaucracy before it can be spent.

Both challenges can be summed up, as one interviewee described, as feeling like "digital transformation is second-class spending" – not invested in relative to how beneficial it is, and how low-risk it is to the public finances.

Many of the challenges of getting value for money from digital spending are also related to what the budgets are spent on, especially procurement. These issues are not in scope of this paper, though are discussed elsewhere.[7]

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[6] Pat McFadden, *Pat McFadden Vows to Make the State 'More like a Start up' as He Deploys Reform Teams across Country*, 2024.
[7] Hill and Eke, *Getting the Machine Learning: Scaling AI in Public Services*.

2. Squeezed

A common challenge for government digital programmes is under-investment. Despite considerable growth in overall day-to-day public spending, which reached £558.9 billion in 2023-24 (a 34 per cent real-terms increase on 2017-18 spending), digital spending on external providers has only grown by 7 per cent in real-terms between 2017 and 2023.[8] While external providers do not account for all spending, as departments have built significant in-house capabilities over time, this data is not published.

Figure 1: Public sector IT procurement spend by Central Government, Local Government and the NHS in England, 2017 to 2023
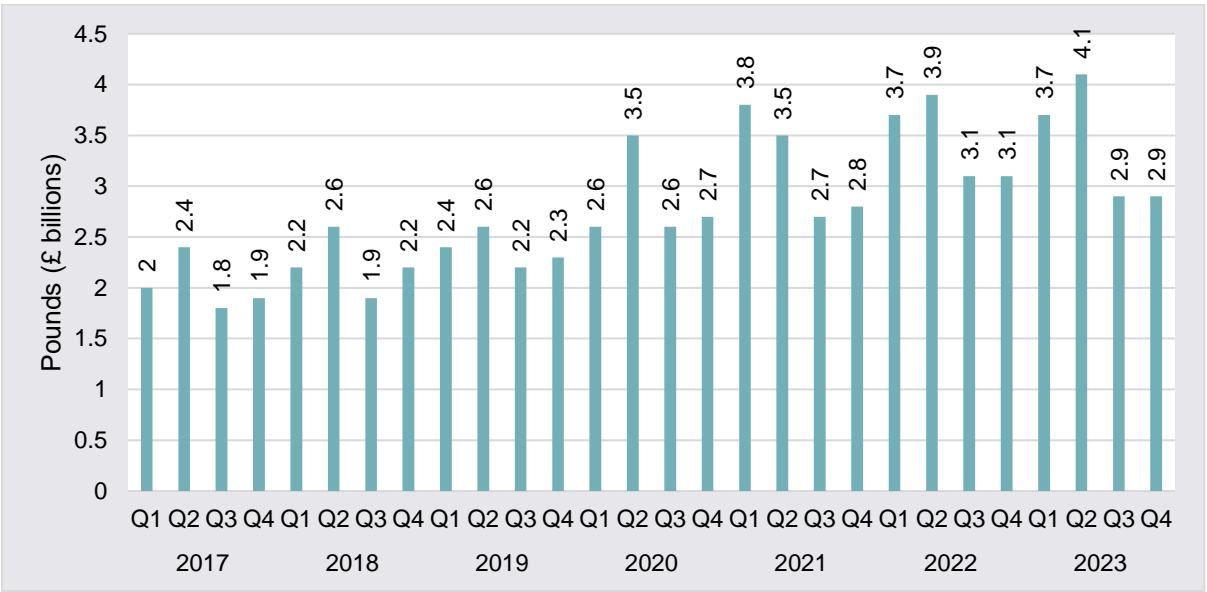
Source: Tussell data, cited in Hill and Eke, *'Getting the Machine Learning: Appendix 2'*, September 2024.

2.1 Prioritising digital spending

Interviewees reflected that digital spending was often a "poor cousin" of other priorities for government budgets. Although relatively smaller increases in investment are not inherently bad, they corroborate a narrative that government does not approach problems 'digital-first' – working out how to address them through transforming systems to be more efficient. Over time, this relative de-prioritisation of digital investment compounds, and the challenges it creates become harder to unravel. As one interviewee for *Getting the machine learning* said:

> "The government are obsessed with protecting frontline budgets, so [they] squeeze the small amount you have available for transformation every year. But in the private sector, they would do the opposite, because you can always control your change budget, but if you don't focus on getting your annual run costs down then they'll keep growing."[9]

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[8] GOV.UK, *Public Spending Statistics: July 2024*, 2024; HM Treasury, 'Public Spending Statistics Release: July 2018', 19 July 2018; Hill and Eke, *Getting the Machine Learning: Scaling AI in Public Services*.

[9] Hill and Eke, *Getting the Machine Learning: Scaling AI in Public Services*.

So the squeeze on digital spending is partially a function of a wider preference for spending on existing services over investment to transform them. Whether or not the Government of the day wants to prioritise 'cashing out' direct financial savings from digitisation, or focus on "sharing the benefits of automation with the public" through improved services, both are legitimate reasons for transforming services.[10] But the preference for ducking transformation, and eschewing both goals to 'save now to spend later' is a false economy, and results in services which are hopelessly outdated and prone to being overwhelmed by unmanageable demands.

The pressure on digital funding is also partially a reflection of government accounting practices. Historically digital spending has been a balance of resource spending (RDEL) and capital spending (CDEL). Interviewees confirmed that the majority of new software development is still funded from CDEL, while the ongoing run costs are largely funded from RDEL. However there are ambiguities and inconsistencies, such as whether contracts for 'discovery work' (early stage assessment of the potential for a new transformation project) could be funded from CDEL.[11] This ambiguity is avoidable, for example the province of British Colombia's government publishes a simple checklist on their website of the categories of spending which count as operational (equivalent to RDEL) or capital expenditure.[12]

Interviewees felt both classifications presented different risks of digital spending being crowded out. For example, many felt that there was more flexibility in CDEL for new projects. Departments told the NAO that "it is easier to bid for capital funding for new developments than resource funding to maintain existing services and keep them up to date".[13] And funding digital projects from RDEL forces direct trade-offs with core frontline headcount, which is also funded from RDEL.

Equally, former officials interviewed for this paper said that CDEL funding encouraged "boom and bust" and "time-boxed" projects without the sustainability of an ongoing budget, and that RDEL was more suitable to funding the development and ongoing running of digital services. This is particularly the case for the kind of digital services we want government to be building in the future: built more in-house, and using more open-source and Software-as-a-Service (SaaS) products, both of which have lower up-front cost to integrate than bespoke software built entirely by third parties.

Participants in one *Reform* roundtable discussed whether ringfencing a kind of "transformation RDEL" budget for each department, to protect digital funding against both the time-limited nature of CDEL, and the competing pressures on RDEL to fund staff headcount. There is some international precedent for this – in the United States, the Pentagon is piloting having one "colour of money" for software, rather than separate accounts (the distinction in Congressional appropriations is between R&D, operations, maintenance and procurement rather than between capital and resource budgets).[14] But it is unclear whether this has been a success, or would translate well to a more financially constrained context, where it is likely the ringfence would need to be carved out of existing budgets rather than being entirely funded through additional investment.

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[10] Richard Pope, *Platformland*, 2024.

[11] Paradigm Junction PUBLIC, *Buying Generative AI in Government*, 2024.

[12] Government of British Colombia, *Digital Investment 101*, 2024.

[13] National Audit Office, *Digital Transformation in Government: Addressing the Barriers to Efficiency*.

[14] Jared Serbu, 'Pentagon Wants to Use Its Biggest IT Program to Test "Colorless" Software Appropriation', *Federal News Network*, 31 May 2021.

Traditionally ringfencing has failed to deliver its stated aims. Despite the move to separate RDEL from CDEL in budgets in the 1990s, capital budgets are still routinely used to plug holes in day-to-day resource spending.[15] It is not clear that another ringfence would prevent similar practices from continuing, or that it would not just formalise the existing biases against transformation funding.

Instead of aiming to protect digital spending by funding it from a separate category of spending, the Treasury should look to incentivise investment in digital through applying much more scrutiny to how other kinds of spending are allocated. Previous *Reform* research has recommended putting much more scrutiny on the value for money of ongoing workforce costs, including by making it an explicit responsibility of Accounting Officers.[16] And when assessing the value for money of automating a process, including the performance, cost and risks of digital transformation, this should be benchmarked against the current level of performance of existing, non-automated public services.[17]

2.2 Fund services, not projects

It is clear that digital spending is often squeezed out because of false economies. It is either seen as optional, 'nice to have' after core budgets like departmental workforces are funded, or as a time-limited project to build what one interviewee called "shiny new technology which will be put on a shelf when nobody maintains it". Neither of these approaches is realistic about how a digitally-enabled organisation actually runs in practice.

Products not projects

Almost all digital spending is governed through projects and programmes which are designed for time-limited spending on 'change' or 'transformation', even when that spending is the ongoing maintenance and run-cost of previous successful change programmes which are now embedded – spending which teams then have to regularly re-justify in annual allocations processes with the same level of scrutiny as a new project. For example, the ongoing run costs of the Police National Computer (PNC) and the Police National Database (PND) are funded as part of the National Law Enforcement Data Programme (NLEDP), which is also building their replacement. As part of the Government Major Projects Portfolio, NLEDP has to be re-approved annually by the Treasury and Cabinet Office, including the ongoing spend on the PNC and PND.[18]

Individual parts of software spending will always be time-limited: no budget item should be assumed to last forever. But assuming whole digital products and services which are already operating should continually be re-approved sets the wrong incentives – making budgeting too short-term and inefficient. Jennifer Pahlka, former Deputy Chief Technology Officer in the US Government, wrote that "we procure and fund software as if it were static, and thus make it both worse and more expensive".[19] She draws a distinction between a "project" model (the

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[15] National Audit Office, *Review of Capital Expenditure in the NHS*, 2020.
[16] Joe Hill and Sean Eke, *Making the Grade: Prioritising Performance in Whitehall*, 2024; Joe Hill, *The Price of Everything: A Plan for the Office for Value for Money*, 2024.
[17] Hill and Eke, *Getting the Machine Learning: Scaling AI in Public Services*.
[18] National Audit Office, *The National Law Enforcement Data Programme - Report - Value for Money*, 2021.
[19] Jennifer Pahlka, *Project vs Product Funding: Modernisation Shouldn't Even Really Be a Thing at All* (Eating Policy, 2024).

one described here) for funding software, and a "product" model which would be comparable to funding in most technology companies.

The appeal behind a project model is the idea of a short, time-limited project followed by "minimal ongoing expense".[20] But that is rarely the actual experience of digital projects, because it is rare that a product is perfect and completely future-proof once built, and usually it needs to be adjusted and improved over time. James Plunkett characterises it as "you simply cannot do software development in a relay/waterfall way",[21] and Agile development processes are more effective.[22]

To save money and improve performance, it is better to invest in ongoing digital software capability, treating software as a 'run' cost rather than a boom-and-bust 'change' cost, and building government capacity to constantly update and iterate software over time.

Starting from services

A project or programme-based model also sets the wrong incentives for budget holders in government. Forcing the ongoing run costs of digital software into budgets which are supposed to be time-limited creates undue uncertainty about their future affordability. This is counter to the objective of successive government's which have wanted to use software to automate work and reduce staff costs, but instead of having a bias in favour of digitisation, time-limited budgets for software create a disincentive to automate.

The 'run cost' of maintaining a large team of caseworkers should not be preferable to government than the equivalent cost of an automated system and a much smaller number of caseworkers delivering the same 'service'.

> "Services are the things that the public interact with to get an outcome, such as becoming a foster carer or getting a vaccination. They are often a mix of digital and real-world interactions".[23]

But this service-based approach is antithetical to government budgeting, which tends to budget for workforces and technology separately. And as the NAO highlighted in its 2021 report, "Government lacks data on the hidden costs in its existing services. Many of these costs arise from the unknown numbers of people and processes needed to support older services and make them work in the way government wants them to".[24]

Whether a public service is being delivered by public servants, by software, or (usually) a mixture of the two, the business-as-usual costs of delivering the service should be treated the same. Government should conduct an exercise of re-baselining the cost of all the services it delivers, including frontline operational budgets, so that digital funding to support them can be put on the same footing as the staff cost to deliver them in annual budgeting processes.

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[20] Pahlka.
[21] James Plunkett, *How to Solve Wicked Problems* (EndState, 2024).
[22] Agile software development is an iterative and flexible approach that emphasises collaboration, customer feedback, and delivering working software in small, incremental cycles. It prioritises adaptability to changing requirements, continuous improvement, and maintaining a sustainable development pace.
[23] Pope, *Platformland*.
[24] National Audit Office, *Digital Transformation in Government: Addressing the Barriers to Efficiency*.

This approach should be applied across both user-facing services (e.g. renewing a passport, claiming Universal Credit) and 'horizontal' services which either serve multiple different frontline services (such as Tell Us Once) or support several different services with component parts (GOV.UK Notify, the NHS App).

Reorienting budgets around services, rather than artificial distinctions between different kinds of budget (workforce, transformation, legacy IT) would shift the balance in favour of transformation, by making the true 'run' cost of existing services evident to budget holders when deciding where to allocate transformation funding. This would significantly improve incentives, making it much less acceptable for government departments to face less scrutiny for the ongoing costs of a workforce than they do for the ongoing costs of maintaining software.

Figure 2: Tell Us Once

Tell Us Once is a cross-cutting digital service, used in the UK, to register a death. When users visit a registry office to register a death, they are given a unique code, which can be put into a GOV.UK page.

The service automatically stops local councils charging council tax, the DVLA cancels the driving license, the Passport Office cancels the passport, and the Department of Work and Pensions (DWP) stops paying the pension, all automatically. This stops users, and public services, from having to duplicate lots of work.

Tell us Once was originally conceived in 2005 by the then Pensions Service, and piloted in 2008, but the last British council did not onboard onto the service until March 2020 (it is not available in Northern Ireland).

The core systems are run by a team in DWP, but it serves multiple different public services and agencies. It is funded within DWP, despite fulfilling a cross-government role.

Source: Tom Loosemore, 'The value of horizontal services: Tell Us Once', 5 December 2022
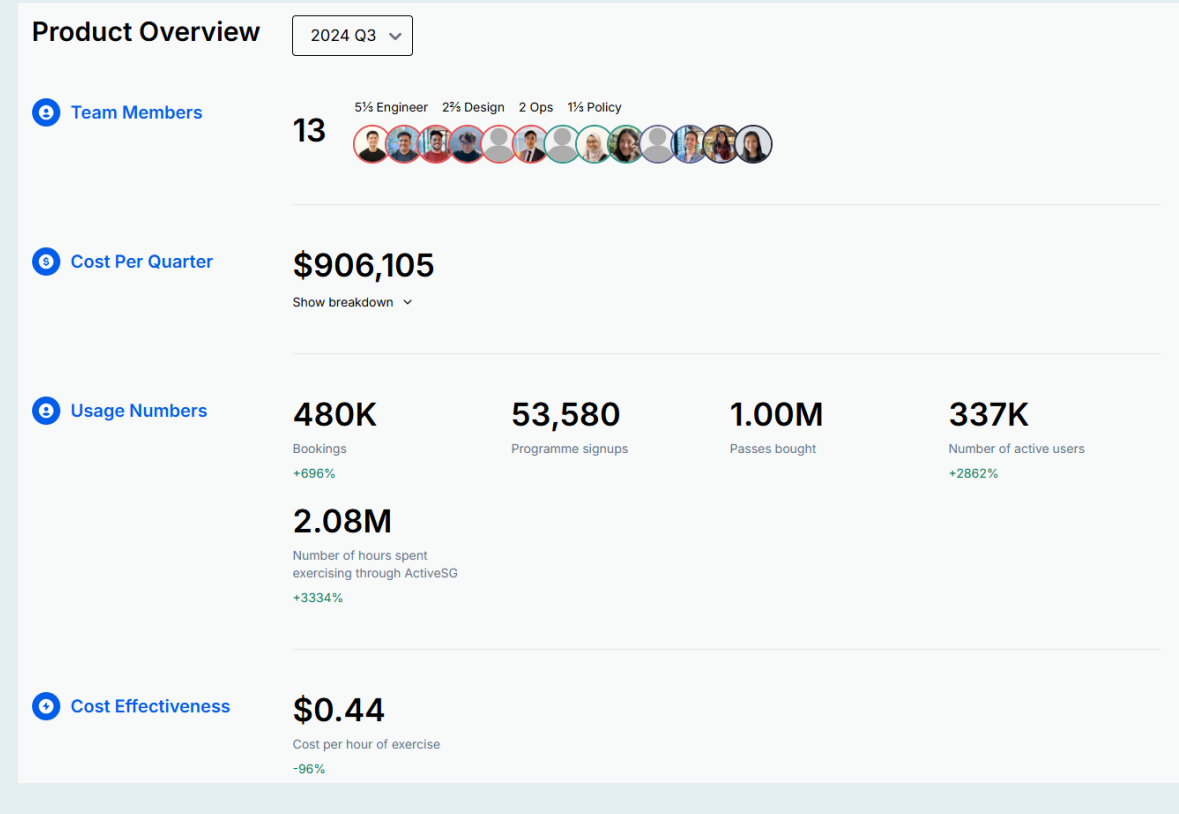
Figure 3: Open Government Products, Singapore

Open Government Products (OGP) sits under the Singaporean Ministry of Digital Development and Innovation. It was founded in 2019 with a specific mission to improve services, and to bring best practices into the public sector from the private sector. It has almost 200 staff, and built the country's vaccination scheduling system during the COVID-19 pandemic.

OGP is funded annually through a block grant based on a single business case, and develops products internally on behalf of other parts of the Government. At the end of the year, they show the overall value produced from the block grant, to justify future spending.

All products built and run by OGP are viewable via a dashboard and report card on their website, which shows usage, the cost of building and running them, and performance metrics like completion rates or user satisfaction. The public metrics also show the cost-effectiveness of the product, which is used as evidence when justifying future spend.

Below is the dashboard for ActiveSG, the product used to book sports facilities, join fitness programmes, and access public gym and swimming facilities.

Product Overview   2024 Q3 ⌄

Team Members

13   5⅓ Engineer   2⅔ Design   2 Ops   1⅓ Policy

Cost Per Quarter

$906,105
Show breakdown ⌄

Usage Numbers

480K	**53,580**	**1.00M**	**337K**
Bookings	Programme signups	Passes bought	Number of active users
+696%			+2862%

2.08M
Number of hours spent exercising through ActiveSG
+3334%

Cost Effectiveness

$0.44
Cost per hour of exercise
-96%

Source: Research interviews, Open Government Products Singapore website.

Funding teams, not projects

If government shifts to funding products on an ongoing basis, and putting this funding on a sustainable footing by benchmarking it against the services it needs to deliver (rather than disconnected and time-limited projects), it needs a model for resourcing that. Multiple disconnected digital and technology teams, trying to support the demands of different services in isolation, would be just as inefficient as the status quo.

The founders of the Government Digital Service (GDS) have argued that a similar model to GDS should be adopted by wider government – "fund teams, not programmes. Invest public money incrementally, with oversight proportionate to financial risk".[25] GDS had a core funded budget to provide cross-cutting services like GOV.UK. Like the Open Government Products team in Singapore (Figure 3), GDS funded projects from within this block grant, rather than bidding for resources on a project-by-project basis. This approach should be spread more widely.

> **Recommendation 1:** Departments should re-baseline their budgets on a service-by-service basis, and establish parity of esteem between the ongoing run costs of digital products and other kinds of cost to deliver existing services, such as staff costs.
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> **Recommendation 4:** Digital, Data and Technology (DDaT) functions in central government departments should be funded centrally and sustainably.

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[25] Andrew Greenway and Tom Loosemore, *The Radical How* (Public Digital, Nesta, 2024).

3. Slow

Digitisation of public services can be a high-risk activity, and Whitehall is littered with failures of digital projects which didn't deliver, or which failed the public when they were delivered. But the risks involved are technical and operational, and if best-practice approaches to digital project delivery are adopted, the financial risks to Government are minimal. In isolation, digital spending is relatively inexpensive, and low-risk compared to other areas of public spending.

However the complexity of the approval processes needed to spend money on software is asymmetric to this low level of risk. Initial approval for spending on software is similar to approval used for activities with a much higher financial risk, like infrastructure programmes or procuring medical devices and military hardware.

In practice this means that spending on digital transformation is slow. Too slow to scope, too slow to agree, and too slow to actually deploy on the things it needs to be spent on. That often means digital spending is wasted, because the processes are too slow to keep up with business needs, and incentivise larger and more complex projects which are more expensive than they need to be. And even for cases where funding cannot be allocated to digital projects, or existing projects need to be cancelled, the slowness of the decision-making process takes up so much time that often teams are waiting for a decision for weeks or months, creating uncertainty and preventing good planning.

To make spending on digital transformation more effective and efficient, decision-making needs to be much faster. A small pilot or 'discovery' project should have to meet a minimum standard to be approved, it should be simple to scale it into a more mature service if it performs well, and simple to stop the pilot if it doesn't.

3.1 Low cost and low risk

Software is cheap and getting cheaper

Cloud computing costs continue to fall, as part of ongoing competition between the three main competitors: Google, Microsoft and Amazon Web Services.[26] OpenAI's most advanced model in full deployment, gpt-4o, costs about $200 (about £156) per month for an unlimited personal license accessed by a user through their browser.[27] Programmatic access (e.g. to use gpt-4o as part of an automated software process) costs $2.50 (about £1.96) for one million input tokens – roughly 750,000 words of prompts.[28]

Digitally delivered services tend to be cheaper than analogue services, and as more government processes are digitised the economies of scale make it even more efficient. This pattern is well-established – GDS already showed the costs of digital services falling by 10 per cent per user transaction between 2012 and 2014.[29]

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[26] Brandon Butler, *Google: The Cost of Hardware Is Falling at a Faster Rate than the Price of Cloud* (NetworkWorld, 2024).
[27] OpenAI, *ChatGPT Pricing*.
[28] OpenAI, *API Pricing*.
[29] Richard Sargeant, *Digital Marches on: Rising Take-up, Falling Costs* (GOV.UK, 2014).

Many believe digital could be even cheaper. Jennifer Pahlka describes Byrne's Law, that "most government technology projects could cost 10 per cent of what they do, and still provide 85 per cent of the functionality",[30] based on governments often gold-plating their software requirements and pricing themselves out of cheaper options. Government is often uncomfortable with this approach:

> "Starting small can be hard for government tech programs. It's uncomfortable internally because it feels counter to the principle that government serves everyone equally; external stakeholders can complain if a competitor or partner is in the program and they're not…But too often, technology projects are built with the intent of serving everyone from day one, only to find that they meet a large, pre-defined set of requirements but don't actually serve the needs of real users, and adoption is weak."[31]

'Letting perfect be the enemy of the good' in this way is a false economy, especially when public service productivity is still lower than it was before the COVID-19 pandemic,[32] and the public finances are under significant pressure.

Funding good software is low risk

And unlike major physical infrastructure, which often only gets to realise the value once the whole thing (or major sections) are delivered, it is possible to gradually expand the scope and scale of digital tools in government. As one interviewee told us, "half a motorway between two cities isn't half as good as a motorway which reaches the full distance", but a digital tool can be scaled up user-by-user, features added one at a time, and gradual improvements to the performance made as it moves through Technology Readiness Levels to a fully-fledged product utilised across an organisation day-to-day.[33]

This is particularly true in the best-practice ways software is built today. Previous generations of technology programmes were very financially risky, and indeed they operated much like a big infrastructure project (and often involved large amounts of physical database infrastructure before cloud adoption was widespread).

But this approach of outsourcing digital development to big system-integrators to build a large bespoke system is less common, in favour of much more 'agile' methods. Of the twelve principles set out in the Manifesto for Agile Software Development (widely regarded as the best in-class approach), "deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale" is a key one.[34] This approach disincentivises the kind of large, expensive and end-to-end technology procurements which were more common before the Government Digital Service stipulated that the Government would not let any "IT contract over £100 million in value – unless there is an exceptional reason to do so",[35] as one of their 'Red lines for IT procurement'. When software development in

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[30] Jennifer Pahlka, *Recoding America: Why Government Is Failing in the Digital Age and How We Can Do Better*, 2023.

[31] Allie Harris and Jennifer Pahlka, *Don't Fight Paper With Paper: How to Build a Great Digital Product with the Change in the Couch Cushions*, 2024.

[32] Office for National Statistics, 'Public Service Productivity, Quarterly, UK: January to March 2024', Web Page, 15 July 2024.

[33] Catherine G. Manning, *Technology Readiness Levels* (NASA, 2023).

[34] Kent Beck and et al., *Manifesto for Agile Software Development*, 2001.

[35] Alex Holmes, 'Red Lines for IT Procurement', *Government Digital Service* (blog), 26 February 2014.

government is externally procured now, it is often through consultancy support on a 'time and materials' basis – billing consultants based on a day rate, for actual time worked on a project. So if projects are not yielding results, they are easier to discontinue.

Conversely, sometimes digital investment can be so low risk that the wrong kind of behaviours emerge. Previous research highlighted the risks where, particularly with emerging technologies like AI, the majority of investment was focused on early-stage pilots, often duplicative of each other, and with no plan to scale successful pilots up.[36] This 'pilotitus' can create lots of waste from projects which on an individual basis are cheap, but collectively are very expensive because of the number which are unsuccessful. A balanced approach is needed so that pilots aren't commissioned for entirely cultural reasons, such as "wanting to pilot AI in your team because it makes you look cool, not because it'll do anything".[37] And sometimes, a consultancy-based model using 'time and materials' contracts can facilitate this, along with other negative behaviours. One interviewee discussed how much of government's internal functions were staffed by external contractors doing "bodyshop" roles – essentially working as a full-time member of staff, using a consultancy contract to charge far more than Government would need to pay for a civil servant to do the same role. This can contribute to diminished internal government capacity to adapt and change more quickly than contractual timescales allow.

3.2 A proportionate approach

Too many approval points

Overall, digital spending is relatively low cost and low risk. However, the same business case processes are used for internal departmental approvals, and approval by HM Treasury and Cabinet Office, as are used for other higher-cost and higher-risk programmes. Interviewees for *Getting the machine learning* reflected that business cases for software projects often ran to many hundreds of pages,[38] and so did not reflect the principles that the business case process should be "flexible and scalable" in the Treasury's business case guidance.[39]

HM Treasury has issued additional guidance clarifying how to apply the business case process in a more light-touch manner to digital projects, giving departments more freedom to justify spend to varying levels:

1. Initial research and scoping stages of all Agile projects, up to a limit of £750,000;
2. Small projects costing below £10 million;
3. Larger projects costing above £10 million.[40]

Although the Treasury has made the requirement for individual projects scalable, they still rely on the project being justified as part of an overall Programme Business Case, which needs to exist before the specific project can be approved to establish overall value for money. In practice, this continues the assumption that all technology should be funded within large, time-limited programmes, approved by HM Treasury and Cabinet Office. This limits the impact that

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[36] Hill and Eke, *Getting the Machine Learning: Scaling AI in Public Services*.

[37] Ibid.

[38] Ibid.

[39] HM Treasury, 'Guide to Developing the Project Business Case', 2018.

[40] HM Treasury, *Agile Digital and IT Projects: Clarification of Business Case Guidance* (GOV.UK, 2024).

a much more light-touch approval for Agile projects can have, and often means it isn't applied at all.

In many instances, these programme-level business cases will actually cover a 'transformation portfolio', rather than a specific programme, in recognition that they contain many different smaller change projects rather than one overarching large project. But these Portfolio Business Cases are assessed with the same rules and processes as a Programme Business Case for a specific large programme, a process which is clearly inadequate for assessing and reporting on a diverse range of small projects.

Portfolios of investment in smaller projects work in very different ways to major programmes, and so the evaluation of value for money should be different as well. In the technology sector, companies are often financed to grow by venture capital funds: investors who specialise in high-growth and high-risk technology projects, who use a very different model to traditional debt-backed finance for businesses. While such a model cannot be copied directly in government technology budgets, portfolio investments could learn a lot from the iterative funding model applied in venture capital, and the different approach to evaluating value for money.

Figure 4: Venture capital

Venture capital (VC) funds invest in technology startups with high growth potential at early stages, including before they have any revenue or are incorporated. They raise money from investors (called limited partners or LPs), pool it into a fund, and then use that capital to fund promising startups, usually in exchange for equity stakes. Key elements of the model are:

1. **Sourcing and Selecting Startups:** VC firms look for startups that align with their investment focus, such as particular industries or stages. They assess the company's potential by looking at its team, product, market, and potential to scale.

2. **Funding Rounds:** Startups usually raise funds in stages (pre-seed, seed, Series A, Series B, etc.). VCs typically join at the seed or Series A stage. Each round provides the startup with a capital infusion in exchange for more equity, and as the startup grows, the company's overall valuation ideally increases.

3. **Exit Strategy:** The goal for VCs is to eventually 'exit' by selling their shares, usually when the company becomes publicly traded or is acquired, aiming to return profits to the fund's investors.

4. **Pooled risk**: A successful exit provides substantial returns, compensating for the high risks associated with startups. The majority of startups which are funded by venture capitalists do not succeed, but the returns from the most successful ones are large enough to make the overall investment portfolio profitable.

The most successful and fastest-growing companies in the world were initially financed by VCs, including Amazon, Apple, Google, PayPal, Nvidia, Stripe, Uber and Meta (Facebook).

Source: Sebastian Mallaby, "The Power Law: Venture Capital and the Art of Disruption", 2022.

Instead of operating a portfolio of many small transformation projects like a single large, time-limited programme, the Treasury should amend guidance to create a separate category for portfolio evaluation and governance. Transformation portfolios should not rely on a single large business case, approved on an annual basis to allocate funds for that year across different projects, but instead apply a more responsive mechanism more akin to venture capital funding in the private sector (Figure 4).

Budgets should not be entirely allocated up-front, but investment should be kept in reserve throughout the year to respond to changing circumstances and priorities. There is precedent for applying this within companies' internal budgeting, such as Sword Health (Figure 5).

Figure 5: Sword Health

Sword Health is a US-based digital healthcare company, which combines AI and human clinical insight to improve access to care for physical therapy, pelvic health and mobility.

When expanding into new business areas, Sword Health has hired a new General Manager to lead it, and provided them with a budget of $1 million to hire a team and identify the right approach to identify "product market fit" – to test and refine the right way for the company to operate in that market.

That budget is equivalent to an internal "seed round" in venture capital. It is used on new team members, and also to 'buy' time from current parts of the business to work on the proposal, e.g. the engineering team.

Depending on performance with that initial investment, Sword Health either moves to expand investment, or ends the project.

Source: Jacob Efforn, Nikhil Kirshnan and Eric Shan, 'Sword Health CEO Virgilio ("V") Benton on *Vital Signs*", 1 July 2024.

Rather than relying on a point-in-time assessment of all of the potential costs and benefits of a portfolio on this scale, HM Treasury, Cabinet Office and DSIT officials should play an active role in departmental allocation decisions by sitting on the portfolio's board. To complement them with specialist advice in technology and investment, the portfolio board could also hire external members from outside the civil service, or incorporate departmental Non-Executive Directors into the decision-making process.

Evidence and assessment

The failures of the business case process also impact the quality of evidence for spending, and the way it is assessed. "Programme funding rules, as set out in HM Treasury's Green Book, encourage front-loaded cost-benefit analysis and discourage incremental funding proportionate to risk."[41] And they are infrequent, usually only examined on a yearly basis, offering 'point in time' assessments when deciding where to make investments. They take months to write, and rarely get revisited once they're "done".[42]

This contributes to a high-stakes culture, meaning decisions about business cases take a long time to complete. The perverse incentive that sets is to expand them as much as possible, as

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[41] Greenway and Loosemore, *The Radical How*.
[42] Pope, *Platformland*.

Richard Pope, former GDS official, describes "why ask for £1 million over a few months, when asking for £100 million over a few years would take little additional effort, and get just as much scrutiny".[43]

An interviewee for *Getting the machine learning* described a bid for hundreds of millions of funding from HM Treasury for a digital transformation programme, after which the Treasury told them "you should have added another zero, then we would have taken it seriously. That's just too small for us to fund".[44]

The business cases used to justify spending within a transformation portfolio should be significantly shorter and lighter-touch than they currently are, particularly for early-stage projects. They should follow the recommendations made by Lord Willetts in his review of the DSIT Business Case process, as similar lessons for funding science and innovation projects also apply to digital innovation within government.[45]

By re-baselining spending at a service level, rather than on a project-by-project basis (as set out in Section 2.2), the evidence for an individual project should be based on the impact it could have in transforming the cost or the performance of the service it would transform, rather than benefits assessed as part of a larger programme in isolation from a good understanding of service performance.

Recommendation 5: HM Treasury should issue new guidance for managing portfolios of smaller transformation projects, as a separate category to Programme Business Cases. This portfolio approach should emphasise flexibility to reallocate funding internally throughout the financial year, based on a 'test and learn' approach.

Recommendation 6: Rather than assessing the value for money of the overall portfolio using a point-in-time business case appraisal, HMT, Cabinet Office and DSIT officials should be involved in the portfolio allocation process to give them insight into the value for money of specific investments. The portfolio board should also be supported by external expertise on technology and investment, e.g. via a departmental Non-Executive Director.

Recommendation 7: Assessment of the value for money of specific digital projects within a portfolio should be based on a light-touch business case, which emphasises the costs and benefits relevant to the baseline costs and performance of the service that project will transform.

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[43] Pope.
[44] Hill and Eke, *Getting the Machine Learning: Scaling AI in Public Services*.
[45] David Willetts, *Independent Review of the DSIT Business Case and Approvals Process* (Department for Science, Innovation and Technology, 2024).

4. Conclusion

Despite Harold Wilson's grand ambitions in 1963, the British public has not felt the "white heat" of technology within public services. But that has not been for lack of fuel. Rather, it is the cultures, systems and incentives of Whitehall's budgeting processes which hold back much of the potential for a transformed State.

In a tight fiscal envelope, it will be challenging to prioritise every demand for more digital investment, and the Treasury faces many competing calls for more public spending. Getting the most from every pound of transformation spending will be crucial to addressing the chronic underproductivity of British public services.

To get better value for money from digital spending across Whitehall, the Treasury should prevent digital spending being squeezed by competing pressures. The flexibility of digital spending should be its strength, not its weakness, and it cannot be sidelined to make room for more of the same investment in maintaining the status quo of inefficient, people-delivered and (sometimes) still paper-based public services. Parity of esteem for the run costs of digital services, and the ongoing costs of public servants, is crucial – incentives in Whitehall should not prioritise people over software when the former is so much more expensive.

And counter-intuitively, Whitehall should prioritise speed of digital allocations. As businesses know, 'time is money', and too often the time and money run out for digital projects because they are trapped in complex approval processes which aren't fit for a technology which is as cheap and low-risk an investment as digital projects should be.

The Chancellor of the Duchy of Lancaster, Pat McFadden, outlined the Government's ambition to make the state "more like a start up", emphasising the importance of "test and learn" approaches to transforming public services.[46] In copying the language of Silicon Valley, he might hope to capture some of the magic that has made it the most innovative economy in the world. But what makes the technology sector so powerful is its willingness to revolutionise, again and again. Funding frameworks need to be responsive enough to do that, even in the State. The Government should put its money where its mouth is on digital spending, and embrace a way of budgeting which allows for much faster innovation.

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[46] McFadden, *Pat McFadden Vows to Make the State 'More like a Start up' as He Deploys Reform Teams across Country*.

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