Doing more for less

How can the UK government transform its use of data?

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Foreword

"Productivity isn't everything, but in the long run, it's almost everything." - Paul Krugman

The central economic problem for the government in Britain is how to raise productivity across the economy from the pitiful levels of recent years. Raising productivity in the public sector is an important part of raising that of the whole economy, but it is also essential if we are to reconcile the UK's ambitions for the quality of public services with the constraints we face on tax and borrowing.

The development of digital technology offers a real prospect for the transformation of performance across the whole of government from the massive case working operations of HMRC and DWP to frontline health and education services.

In many ways the government is uniquely placed to benefit from these technologies, with the capacity they bring to connect and use the huge banks of data which departments collect and generate. In principle they should allow better forecasting, better targeting of social support to those most in need, and more accurate diagnosis and more effective treatment. To do this most effectively we need to join up different sources of data and work across traditional departmental boundaries.

This is not a new agenda and much has been achieved over recent years but it is clear that we have not invested sufficiently to take full advantage of the technological advances we have seen in the last two decades. This is now even more urgent with the development of Large Language Models and of Generative Artificial Intelligence.

The aim of this report is both to draw out some lessons of past attempts to accelerate digital transformation in government and to learn from the companies which are developing the technology how we could do it better in the next few years.

JOHN GIEVE

Former Permanent Secretary to the Home Office

Current Chair of the Homerton Healthcare NHS Foundation Trust

Summary of recommendations

Optimising cost management to provide value for money

1. Appoint a digital champion to lead reforms across Whitehall: The government could appoint a minister to lead a team across the Treasury and the Cabinet Office driving digital transformation across Whitehall.

2. Diversify data: To improve cost and spending predictions, the government should gather and integrate more diverse data categories in budget calculations.

Delivering tailored and proactive public services

3. Make a 'no-stop shop' the government's ambition: The government's attempt to create a 'one-stop shop' will dramatically reduce the amount of paperwork and repetitive data needed to access public services but would likely still miss individuals who have not directly requested the service. In the medium term, the government should prioritise developing proactive public services and a 'no-stop shop' approach, to ensure everyone eligible for public services is offered them.

Digital transformation through local government

4. Introduce common data standards for local government: For different entities, such as local and central government bodies and third-party organisations, to collaborate effectively, it is essential to establish data standards and clear operating practices. This will facilitate the efficient use and integration of data, as well as enable sharing of information between institutions.

5. Upgrade central capacity mapping: While issues such as housing and social care are frequently devolved to local authorities, common case working systems hold the benefit of creating visibility and better allocation of resources.

Addressing data deficiencies which underpin spending decisions

6. Utilise the potential of digital twins for managing government spending: The government should expand existing work on digital twins, utilising these to evaluate and monitor projects. It could do so on a departmental or project based level.

7. Introduce a framework for data sharing across government: The government should build a single data sharing framework across Whitehall, governing and enabling cross-departmental data sharing.

Removing the barriers created by legacy systems

8. Speed up legacy IT replacement: Removing all legacy systems simultaneously is neither feasible nor prudent but it ought to be done swiftly in order to introduce new technologies. The CDDO should publish an ambitious timeline for legacy system removal.

Reforming funding process and technology procurement

9. Complement the Green Book process with guidance on digital projects: The government should develop digital transformation guidance to be considered alongside the Green Book.

10. Hardwire digital and data-led processes into government procurement processes: Procurement processes should reflect the government's priorities on digitisation and incentivise small UK businesses involvement, such as through joint bids. This should be done through the government's statement of strategic priorities.

Approach

Global Counsel convened a working group of leading business associations and technology companies with significant experience of providing technology services to national, devolved, and local government whose observations were used to inform our report. The objective of the report is to provide comprehensive analysis and a series of recommendations which would inform digital transformation and data policies in the run-up to the next UK general election.

The report was drafted by the Global Counsel team with the input of John Gieve, as Chair of the working group, and input from the members of the working group. John was Permanent Secretary at the Home Office following a career within the Treasury. He went on to be Deputy Governor of the Bank of England and is currently Chair of the Homerton Healthcare NHS Foundation Trust. The research was informed by a series of interviews with leading public sector digitisation experts.

Our working group included:

The interviews included but were not limited to:

DOING MORE FOR LESS · HOW CAN THE UK GOVERNMENT TRANSFORM ITS USE OF DATA?

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Context

The covid-19 pandemic had a transformative effect on the UK public sector. It exacerbated existing inefficiencies which were strained by high levels of staff illness and by the restrictions placed on travel and "non-essential" work. It also unveiled a lack of digital and data-led systems across Whitehall. Conversely, the government's response to the pandemic demonstrated the potential of public sector digitisation and a data-led approach to policy delivery. Measures such as the central Cabinet Office data dashboard, the NHS Covid Pass and the digital systems underpinning the rollout of the vaccines programme are often pointed to as best practice, showing what is possible with sufficient political and policy drivers.

The UK government noted this potential when it set out its ambitions "to transform digital public services, deliver world-class digital technology and systems, and attract and retain the best in digital talent" [1] . By 2025, the government wants to "drive value for money to the taxpayer, by transforming our ways of working to enable the Civil Service to work smarter and faster and deliver on our ambitions for widespread digital transformation".

> "Digital is part of the glue between policy and delivery".
>
> **- Cathal Long,**
> *Research Fellow, The ODI*

A TRANSFORMED, MORE EFFICIENT AND DIGITAL GOVERNMENT

→ Exceed public expectations. The government will create user-centric policies and public services that are more efficient, fit for the digital age, centred on user needs and deliver the right outcomes.

→ Equip civil servants for a digital future. The government will upskill civil servants in digital capabilities and digital delivery, with access to the right data and tools to do their jobs effectively.

→ Enhance government efficiency and security. The government will create a joined-up and efficient administrative process, using common building blocks to deliver services quickly, cheaply and securely.

Transforming for a digital future: 2022 to 2025 roadmap for digital and data – GOV.UK

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1 Transforming for a digital future: 2022 to 2025 roadmap for digital and data - GOV.UK (www.gov.uk)

The 'Transforming for a digital future' strategy was designed to bring together silos of data and increase cross-government collaboration. This was necessary given that, after a promising start with the launch of GOV.UK in 2012, the UK had slipped behind international peers on the digitisation of public services. Indeed, in 2021, the UK was ranked only 19th for eGovernment maturity by the European Commission [2]. Compared to the other nations evaluated, the UK was ranked highly on the proportion of services accessible online but weaker than average on all other elements.

Given the UK ranks highly on other tech indicators, this is particularly stark. Dealroom for the government's Digital Economy Council found the UK's tech sector is number one in Europe and third in the world. In 2022, UK tech companies raised at "near-record levels" reaching £24 billion and are 144 unicorns, 237 futurecorns and over 85,000 startups [3]. The UK is, therefore, uniquely placed to lead the way in technology innovation and can seize the success of British innovation to benefit citizens through better public services.

Chancellor of the Exchequer Jeremy Hunt has launched a review into public sector productivity, noting public sector output accounts for 20% of the national output but is 5.7% lower than before the pandemic, compared to the private sector which is 1.3% [4]. Hunt cited productivity problems which could be solved through technology solutions, such as 443,000 police officer hours a year being spent on filing forms and unnecessary administrative tasks. These kind of productivity problems could be solved easily through the adoption of technology, especially artificial intelligence (AI), to increase public sector efficiency. The need to utilise better digital processes in government has been recognised across the political spectrum.

The Labour Party has committed to "build the capacity of the state to be a more active, capable and reliable partner" and "making it easier for public services to adopt innovative technologies by removing barriers to data sharing and smart procurement". Labour has rightly noted the ability of data analysis and AI to deliver better public services, building on frameworks to ensure public trust [5] .

Parts of local and regional government are also pioneering digital transformation schemes. The Greater Manchester Combined Authority has, for example, put an emphasis on "doing digital differently" and, in so doing, has digitised many of its services. For instance, its 'A Bed Every Night' scheme has developed a unified approach to data management across social service agencies, allowing vulnerable people greater control over their data and the support they receive . It also created a consistent data platform enhancing coordinated support at a local and regional level.

As the next general election approaches, there is an onus on both the government and the Labour Party to integrate measures into their manifestos on the digital transformation of Whitehall.

"Transformation is a slow and steady movement towards better".

Conrad Smewing,

Director General, Public Spending, HM Treasury

2. eGovernment benchmark 2021 | Shaping Europe's digital future (europa.eu)
3. UK tech sector retains #1 spot in Europe and #3 in world as sector resilience brings continued growth - GOV.UK (www.gov.uk)
4. Chancellor Jeremy Hunt's speech at the Centre for Policy Studies - GOV.UK (www.gov.uk)
5. Revealed: Full draft policy platform that could form 2024 Labour manifesto - LabourList
6. A Bed Every Night scheme | What we're doing to help homeless people | Manchester City Council

The benefits
of technology
transformation

Optimising cost management to provide value for money

EXISTING OBSTACLES

Increased public spending to address the pandemic, combined with inflation and the energy crisis, have added pressure on the government to manage costs and demonstrate value for money. In the financial year ending March 2023, the Office for National Statistics estimated total public sector spending at £1154.8 billion, an increase of £18.3 billion from March 2022 [7].

Both the current government and Labour have committed to controlling public spending and applying tighter fiscal discipline; lowering national debt was one of five key promises made by Prime Minister Rishi Sunak [8], while Labour's Shadow Chancellor, Rachel Reeves, has promised to bind a future Labour government to borrowing limits to reduce national debt [9]. It is against this background that the introduction of digital and data-led processes into government should be considered.

Frances Maude, former Minister for the Cabinet Office from 2010 to 2015, is often credited with driving the first wave of digital transformation in government. He oversaw the creation of the GDS and the GOV.UK website, combining over 1,700 individual websites and generating an estimated £1.8 billion in savings in public spending [10]. While the record of GDS under Maude is not unchallenged - the NAO and others have noted that the government's agenda at

the time was focused on improving the front end of services rather than fixing legacy technologies. The government's digital reform agenda waned following his departure with eleven ministerial successors in the eight years since. The government could set up a joint central team across the Treasury and the Cabinet Office with a ministerial lead to drive digital and data transformation across Whitehall. It would have the twin goals of ensuring the digital agenda is given priority across the board and as far as is possible it is done in a way which is easy and safe. This would ensure productivity and value for money are central to any government's success and the unique opportunity presented by digital technology is seized.

7 https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/bulletins/publicsectorfinances/march2023
8 Prime Minister outlines his five key priorities for 2023 - GOV.UK (www.gov.uk)
9 Rachel Reeves unveils Labour's Joe Biden-inspired economic strategy - BBC News
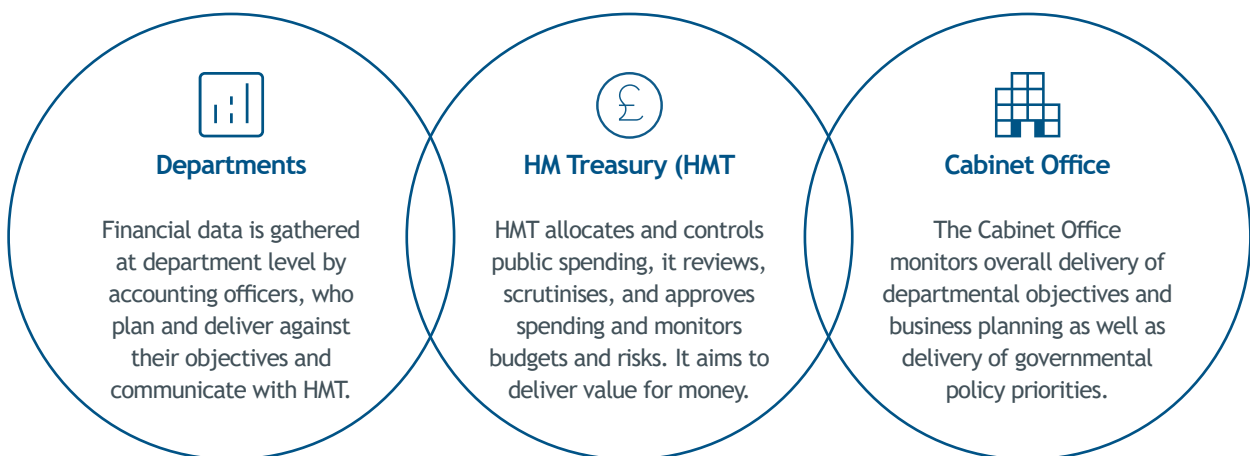10 government Digital Strategy: December 2013 - GOV.UK (www.gov.uk)

PUBLIC SECTOR DEBT, MONTHLY % OF GDP
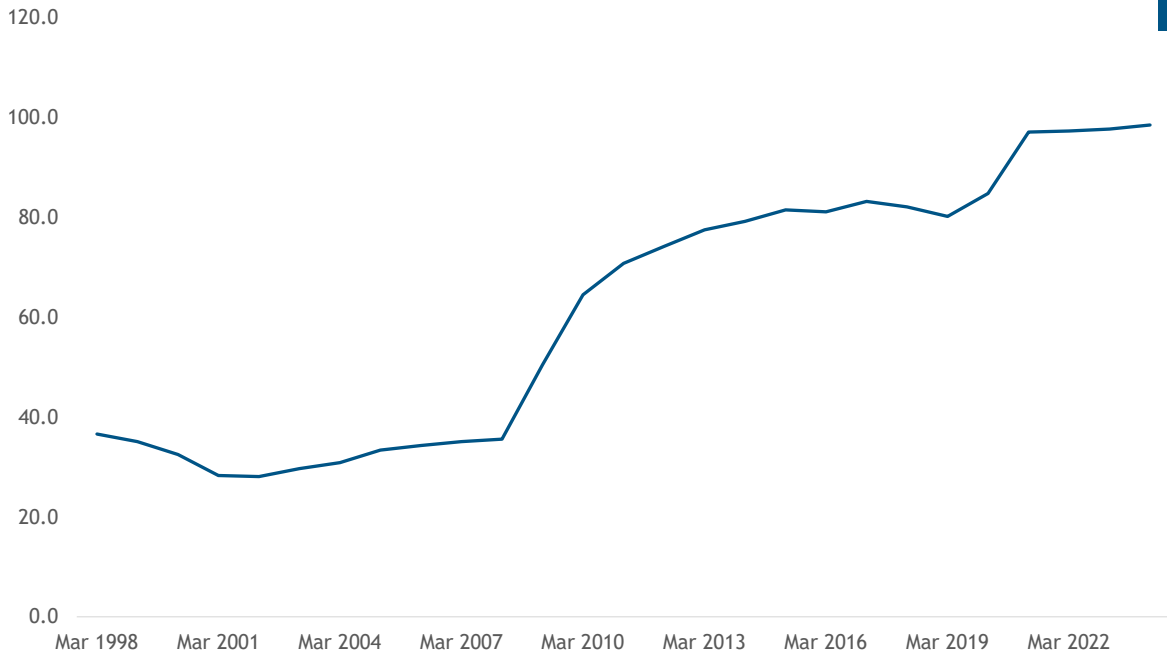
Looking beyond ministerial leadership, the NAO has argued that reforms must also be driven by senior civil servants. The NAO has made the case that senior civil servants need a better understanding of digitisation as do the officials reporting to them.

The government has acknowledged the existing gaps in digital skills across all levels of government, with Cabinet Secretary Simon Case committing [12] to a day per year of digital training for every civil servant. There are a vast number of digital, data and technology vacancies across the government, showing its struggle to attract appropriate talent.

A further tension for digital transformation is between central functions and individual departments. There is often a resistance to centrally imposed agendas and technical solutions, reflecting the fact that Whitehall departments must contend with a number of often competing priorities, meaning that there are disparities in their motivation to digitise. The CDDO is driving the digitisation agenda forward across government and has been designed to work closely with each department's digital teams. This is welcome but CDDO must be given sufficient weight from a relevant Minister to push the agenda forward, bringing departments on the journey with them.

Departments

Financial data is gathered at department level by accounting officers, who plan and deliver against their objectives and communicate with HMT.

HM Treasury (HMT

HMT allocates and controls public spending, it reviews, scrutinises, and approves spending and monitors budgets and risks. It aims to deliver value for money.

Cabinet Office

The Cabinet Office monitors overall delivery of departmental objectives and business planning as well as delivery of governmental policy priorities.

11 Public Finances: Key Economic Indicators - House of Commons Library (parliament.uk)
12 Cabinet Secretary Annual Lecture - The Strand Group (kcl.ac.uk)

> "A new type of accounting is needed whereby you're addressing the cost of inefficiencies in legacy technology and reinvesting your savings made of efficiency gains."

Mark Boyd,

Director, Platformable

THE OPPORTUNITIES THAT DIGITISATION AND DATA CAN PROVIDE

Digitisation can transform the way the public sector manages budgets and assets and reduces fraud. A recent report by UK fraud costs measurement committee found the government is losing £219 billion a year to fraud [13]. A 2021 Public Accounts Committee report found "government efficiency drives tend to be one-off events rather than being embedded as a continuous priority", adding that "the Treasury believes that well-defined, tight budgets provide departments with enough of a financial incentive to strive for efficiency continuously" [14]. The Committee's findings signal scope for increased efficiency in departmental funding allocations.

As can be seen from Oscar II in Figure 4, the Treasury does not currently have an efficient full reporting mechanism. This leads to decisions being made on the basis of outdated data and has caused delays in providing required information to the Public Accounts Committee

FIGURE 1: OSCAR II

The Online System for Central Accounting and Reporting (OSCAR) was introduced in 2012 by the Treasury to replace previous legacy systems with a more user-friendly system. It is used to transmit spending data, forecasts, project business cases and performance data to Treasury teams on a monthly basis. This enables a common understanding of progress against budgets. Compared to previous systems, OSCAR has successfully improved the quality of data by simplifying data structures, and adding validation, accountability and control processes. In July 2020, the Treasury announced it would replace OSCAR with OSCAR II to address the outdated software and to facilitate interoperability with other government systems.

However, during transition, OSCAR II encountered capacity issues, causing over two thirds of public sector organisations to submit their records late. Consequently, the Treasury was unable to publish the Whole of government Accounts (WGA) on time in March 2023. Previous WGAs were found to have contained unaudited, and therefore unreliable, data from local authorities and excluded several councils. The Public Accounts Committee concluded that the Treasury had been unrealistic on its delivery timetable, had not developed a detailed delivery plan and had failed to anticipate problems during the testing phase of OSCAR II, as it had not integrated appropriate data sources in the simulation.

13 Public Spending: Value for Money: 22 Jun 2023: House of Commons debates - TheyWorkForYou
14 Efficiency in Government (parliament.uk)
15 Whole of Government Accounts 2019-20 - Committee of Public Accounts (parliament.uk)

> "Government has poor data on the full costs of its existing services, and specifically, a lack of visibility into additional business and people costs of the continued use of unmodernised digital services."

National Audit Office

Mark Boyd, Director of Platformable and Principal Policy Associate to the Open Data Institute, argued a reformed accounting system was needed to create efficiency gains and reduce costs. For example, algorithmic forecasting has the potential to track future demand more accurately and provide more reliable predictions than current systems. Unspent funds could then be invested more efficiently. By analysing up-to-date data on spending patterns, resource utilisation and project performance, decision makers could identify projects with potential for further investment. This could, in turn, empower departments to strategically allocate unspent funds, ensuring resources are utilised effectively to drive meaningful outcomes. Previous research comparing AI-aided government spending decisions and traditional budgeting processes, furthermore, hinted at the prospect that efficiency gains could lead to GDP growth, decreased inflation and reduced inequality [16].

As artificial intelligence develops, a government or local authority ought to embrace its benefits to create efficiencies in day-to-day tasks such as letter writing, or to identify patterns or citizens who need the most support. Chief Data Officer at the Treasury, John Kelly, has outlined how artificial intelligence is being used within the department including a short-term, long-term model for forecasting cash flows. Looking to the medium term, consideration should be given to the role that large language models (LLMs) could play.

Although the technology is still nascent, it is worth considering how it could be utilised to improve government spending. LLMs have the potential to move the government from generating insights through AI to creating recommendations or even automating decisions, ultimately scrutinising spending decisions and giving recommendations for investments. Recent research suggests that AI integration into government spending decision-making processes could "have a meaningful, direct impact on government cash flows" [17], citing potential use cases in fraud detection, grant and transfer systems or tax evasion, as well as "improving the quality and outcomes of public services". The CDDO, as the central digital body, could play a role in supervising and evaluating new uses of artificial intelligence in order to ensure it complies with government governance structures.

RECOMMENDATIONS

→ Appoint a digital champion to lead reforms across Whitehall: The government could appoint a minister to lead a team across the Treasury and the Cabinet Office driving digital transformation across Whitehall.

→ Diversify data: To improve cost and spending predictions, the government should gather and integrate more diverse data categories in budget calculations.

[18]

FIGURE 2: GOVERNMENT'S FRAUD STRATEGY

Data matching and sharing, and greater coordination between key government stakeholders to tackle fraud holds the potential to save taxpayers billions each year. According to figures from the National Audit Office (NAO), an estimated £10 billion of tax revenue is lost to evasion and crime annually. When the Public Sector Fraud Authority (PSFA) was launched in August 2022, one of its key functions was to provide data and analytics, as well as disseminating intelligence across government.

However, the NAO has noted that this work is hindered by slow processes for data sharing between and within departments. Swift access to data for multiple interdisciplinary teams from different departments would allow counter fraud systems to quickly identify new patterns and take mitigating actions at speed. This would not only mean the reduction of fraud in nominal terms but also allow the government to act more swiftly knowing that appropriate safeguards are in place.

16 Cabinet Secretary Annual Lecture - The Strand Group (kcl.ac.uk)
17 Public Finances: Key Economic Indicators - House of Commons Library (parliament.uk)
18 Tackling fraud and corruption against government - National Audit Office (NAO) report

Delivering tailored and proactive public services

"Consumers have become used to interacting with private companies seamlessly, with digital platforms focused on convenience, speed and proactive recommendations […] why should the public not expect that of the public sector?"

Tony Blair Institute

Public services are typically designed with an onus on citizens to investigate what they might be eligible for and how to apply for it. Lengthy paperwork, repetitive forms and routine renewals have become hallmarks of accessing the public sector, with a recent survey finding 53% of respondents find accessing public services frustrating [19]. This can lead to citizens, often those who need them most, slipping through the cracks, not realising the services and support available to them.

An initial step towards improving access to online public services is through a one-stop shop approach. According to the Government Digital Service (GDS), there remain more than 100 different places where citizens have to log in to government services. GDS has therefore been developing the "One Login for government", a single sign-in for digitally enabled services.

A more ambitious step in public service delivery is proactive public services (PPS), which actively identify people who qualify for government support. PPS utilise existing data to determine who is eligible to benefit from public services and proactively offer support. Departments could utilise pooled and shared data to identify these people, removing the need for action from citizens or civil servants and enhancing digital resilience.

Such an approach can be characterised as a "no-stop-shop", whereby provision of services would draw on data already submitted by citizens during past interactions with government, automatically provided by people's devices, should they agree to it, or provided by third parties, such as people's employers, universities or banks. There needs to be a major effort to standardize where possible across government in order for the UK government to achieve a "no-stop-shop", including, for example, streamlining the current multiple different definitions of household. These definitions, and other data classifications need to be harmonised to realise the data sharing and analytic advantages, including large language models.

Proactive measures are often less expensive than reactive approaches. For example, deploying preventative health tools can target support where it is most needed before more serious (and costly) health issues emerge. A recent report on the preventative state argued the case for a rethink on public services, highlighting

19 https://newsroom.accenture.com/news/accenture-report-finds-people-want-easy-to-use-government-customer-services.html

> "Data quality is inconsistent and frequently poor, and effective data sharing between departments is limited".

> *Transforming for a digital future: 2022 to 2025 roadmap for digital and data – Central Digital and Data Office*

how currently the UK is in "firefighting mode" and ignoring the need for a structural reconsideration of how services are delivered [20].

AI and LLMs add a further tool by which public services can be provided more proactively and according to need. By combining multiple data sets, AI can more accurately determine who is entitled to services, ensuring citizens do not lose out on potential support or are contacted too late for the service to be of use.

Laura Gilbert, Director of Data Science at No.10, has outlined how her team are already using LLMs internally for specific use cases, such as identifying trends in healthcare reports, but suggested that it is already considering how to increase that usage, including for public services. [21] Further AI can be used to improve communication with citizens utilising public services. HMT CDO John Kelly argued generative AI could have a transformative effect on correspondence, using a transformer model to assess incoming letters, assign responses to the right teams within the Department and recommend standard lines. In recent guidance the Cabinet Office gave examples of where generative AI could be used by officials, recommending it for summarising publicly available information or for textual data analysis [22].

RECOMMENDATIONS:

→   Make a 'no-stop shop' the government's ambition: the government's attempt to create a 'one-stop shop' will significantly reduce the amount of 'paperwork' and repetitive data needed to access public services but would likely still miss individuals who have not directly requested the service. In the medium-term, the government should prioritise developing proactive public services and a 'no-stop shop' approach to ensure everyone eligible for public services is offered them.

FIGURE 3: INTERNATIONAL EXAMPLES OF PROACTIVE PUBLIC SERVICES

In Austria, the government introduced Automatic Family Allowances without application for new-born children. The data of citizens is stored in several interacting registers and these agencies deliver their respective services to parents automatically. [23]

In Portugal, a Social Energy Tariff saw only 154,000 households apply. When researching why, it was found that citizens did not understand they had to request the special tariff. Using Portugal's Interoperability Platform for the Public Administration, data was shared and accessed across the Directorate General for Energy and Geology, and with energy companies, the tax system and the social security system, resulting in over 720,000 households eventually being reached by the government support measure. [24]

Estonia's X-Road platform facilitates interoperability between government agencies, eliminating the need for redundant legacy systems and saving Estonians an estimated 1,345 years of working time every year. Citizens can digitally prove their identity, with data shared across government departments. The vast majority of public services are available digitally, with tax forms even pre-filled with data the government already holds. [25]

20 https://demos.co.uk/wp-content/uploads/2023/04/the-preventative-state.pdf
21 https://www.youtube.com/watch?v=I_KAiWxpq_M
22 Guidance to civil servants on use of generative AI - GOV.UK (www.gov.uk)
23 https://www.bmf.gv.at/en/topics/taxation/family-and-children/Alt/family-allowance.html
24 https://www.eipa.eu/epsa/aset-automatic-social-energy-tariff/
25 https://e-estonia.com/solutions/interoperability-services/x-road/

Local government's role in transformation

"Technology adoption is a mixed bag across local authorities with some starting from the basics."

Dr Mike Bennett,

Public Intelligence Ltd

Local government digitisation is essential to drive central government efforts and vice versa. A smooth working relationship between departments and local authorities relies on steady flows of real-time data, informing policy evaluation and formulation. Greater use of digital and technology by local authorities enables stronger decision-making, supporting decentralisation of government.

Local government is currently more used to sharing data between teams than the central government, for example social services, health and police teams were often brought together when delivering household support funds during the pandemic. However, local governments have faced declining budgets, with "a funding gap of £3.4 billion in 2023/24 and £4.5 billion in 2024/25" [26]. Digital tools used in one council are also often not distributed across others, meaning higher costs for individual authorities and a failure to capitalise on potential economies of scale in IT deployment.

Greater digitisation of local government would provide central government with more reliable dataflows and analytics. A fully digitised local government would provide a crucial data source on how policies impact citizens on the local level and inform central government decisions.

Central government could, furthermore, use its central oversight of local capacities to help local government to collaborate across local borders. For example, by sharing information on the availability of social care spaces and creating common case working systems. This way, people in need of care may be able to access services closer to their homes or receive more specialist treatment, albeit in a different council.

"Figuring out the data available, and transforming it into a usable format, is a significant challenge for a council."

The Local government Digitalisation Almanac, LGA, March 2023

> "You cannot address digitisation of government in standalone projects. Central government must set standards and hold organisations to account for delivery."

Roger Taylor,

Former Chair of the CDEI

Likewise, central government should communicate back to local government where demand for local government data exists and give guidance to councils collecting them on how to use and share them.

Roger Taylor, former Chair of the Centre for Data, Ethics and Innovation (CDEI), pointed to the importance of central government coordinating digitisation across councils, departments and agencies through, for example, establishing central data standards, making it easier to share digital tools, and avoiding duplication of work and costs. At present, the potential of sharing between local authorities is underdeveloped.

RECOMMENDATIONS

→ Introduce common data standards for local government: For different entities, such as local and central government bodies and third-party organisations, to collaborate effectively, it is essential to establish data standards and clear operating practices. This will facilitate the efficient use and integration of data, as well as enable sharing of information between institutions.

→ Upgrade central capacity mapping: While issues such as housing and social care are frequently devolved to local authorities, common case working systems hold the benefit of creating visibility and better allocation of resources.

FIGURE 4: TRANSPORT DATA

London councils, together with Transport for London, have worked on digitising services to gather data, such as real-time bus locations, and making it accessible for developers. London transport has since benefited from new services and apps that help users navigate the system.

The Department for Transport aims to share tools, like London's open transport data project, among councils through the transport data strategy. However, councils often operate using different systems and use different data standards, for example, on reporting real-time road closures or bus stop locations. Without a common set of standards in place, it can prove difficult for organisations to collaborate effectively, as they may have incompatible formats for collecting, analysing and sharing data.

It also creates a challenge for central government to assess, for instance, traffic flows across the UK, as different councils may collect different data points, leading to lower data quality. Predicting demand for further traffic infrastructure, such as new train tracks, is therefore more difficult.

REAL TIME ROAD CLOSURES

CAR PARKING OCCUPANCY

ROAD SAFETY DATA

ULTRA LOW EMISSION ZONE AREAS

EV PUBLIC CHARGING DEVICE LOCATION

DRIVING TEST STATISTICS

Using data to underpin spending decisions

> "Success would be if the government could do a Prime Ministerial stocktake easily with a trusted single source of truth across any part of government in a timely manner."

Matthew Swindells,

MJS Healthcare

Cabinet Secretary Simon Case has called for "rocket-boosters" [27] under existing government initiatives being explored by 10DS, a data science unit within No10 Downing Street, to provide "better evidence" to inform policy decision making. Such an approach would mark a departure from the current thrust of the government's approach, which largely focuses on digital, rather than data-led, projects which bring existing government systems online.

Such data-led reforms are more complex to implement, requiring capital and expertise, but will have a greater and swifter potential impact than more gradual measures.

MODELLING SPENDING DECISIONS

The first example is expanding the government's existing work on the National Digital Twin programme to explore benefits for spending decisions. A digital twin is a virtual representation of a system which spans a project's life cycle, is regularly updated with real-time data and can use simulation or machine learning to model the outcomes of decision-making options.

Unlike existing systems for accounting across government, it could in principle ensure accurate and up-to-date data is used in decision making. While a full government digital twin could be an end goal, the government should look first at deploying them on a departmental or project basis. The Treasury could fund each departmental twin to ensure it is done to a sufficient standard, gaining the ability to use the data in return. While the National Digital Twin programme has made progress in creating a national ecosystem of connected digital twins, including a central government system modelling the impact of flooding, it ended in 2022. Procurement for Oscar III presents an opportunity to introduce digital twin technologies into spending processes. This was suggested in the plan for Oscar II before being toned down, but the government should aim to avoid this happening again, particularly as the technology is far more accessible than in 2012.

ESTABLISHING A SINGLE GOVERNMENT SOURCE OF TRUTH

An overhaul to the government's data sharing could be achieved through a single digital platform, breaking down existing siloes between departments. Data exchange within the government is currently extremely difficult, due to both legacy technology problems and a culture of siloed working between departments.

27 Cabinet Secretary Lecture: Wednesday 13 October 2021 - GOV.UK (www.gov.uk)

The pandemic necessitated the move from older technology to automated feeds and digital dashboards to allow important decisions to be based on accurate up-to-date data. Kirsty Innes, Director at the Tony Blair Institute, questioned why the government had not expanded it further post-pandemic.

Consultant Matthew Swindells argued a dashboard collating cross-Whitehall data would bring the following benefits:

→ Decision makers would have a full range of evidenced options to form policy work, informed by evolving, real-time data. Currently, data presented to ministers or senior civil servants will only be accurate to the date it is collated and is therefore quickly out of date.

→ The government would be able to evaluate policy programmes as they progress, allowing performance indicators to be tracked in real time. This is rarely done currently due to departments not sharing data with other departments.

→ Data-driven decision making would become more transparent. The government would be able to show why decisions were made, avoiding the current lack of transparency.

The government could more achievably realise these benefits by establishing one facility to bring together data across departments to solve issues. This would not wipe away existing systems, rather it would implement one framework for data sharing to be used to overcome

specific public challenges. The framework would focus on governance, alleviating any fears of data sharing between departments or local authorities. Integrated care systems could be a useful place to pilot this framework as they span several previously siloed organisations with an ultimate aim of integrated care system level waiting lists and mutual aid between trusts.

At a national level, Mark Boyd, founder of Platformable and Principal Policy Associate to the Open Data Institute, said that the government ought to pick three priority IT projects and develop a whole-of-government approach, funded by the Treasury, rather than relying on individual department budgets. This could mean the Treasury and CDDO consider cross-government projects which will have significant transformation impacts such as the single data platform.

RECOMMENDATIONS:

→ Utilise the potential of digital twins for managing government spending: The government should expand existing work on digital twins, utilising these to evaluate and monitor projects. It could do so on a departmental or project based level.

→ Introduce a framework for data sharing across government: The government should build a single data sharing framework across Whitehall, governing and enabling cross-departmental data sharing.

The barriers
to digital
transformation

Removing the obstruction created by legacy systems

"There are many legacy systems from the 1970s … it is a huge task across government, let alone in areas like the Home Office and the Ministry of Defence, where there are additional challenges that we have looked at separately."

Dame Meg Hillier MP,

Chair, Public Accounts Committee

Legacy IT systems remain a major challenge for government, with substantial costs and risks associated with replacement of these technologies. At the same time, the continued existence of legacy technology remains a significant drain on taxpayer money, with the Cabinet Office [28] finding in 2019 that the UK spent £2.3 billion a year on running and maintaining legacy IT systems, out of a £4.7 billion total annual IT budget. Many legacy platforms support mission-critical processes, making it very difficult for downtime to be approved for improvements.

The CDDO has a programme identifying all 'red-rated' legacy systems across government, ensuring these have a transformation programme in place. This is a positive step, but it needs to be done at pace to fully realise the benefits of newer technology adoptions.

When doing so, the government will need to be careful not to replace existing systems with legacy systems of the future, ensuring interoperability and agility are built into new systems.

The barrier presented to modernisation by legacy technologies is well recognised within government, informed in large part by the National Audit Office (NAO). The government watchdog has raised concerns about an over-prioritisation on developing citizen-facing elements of a service over tackling the more intricate underlying issues posed by legacy systems, often because of their complexity. This focus on citizen-facing systems leads to a risk services like the National Police System, often cited by industry as the most outdated legacy system, are neglected.

The CDDO is currently deploying pilots to demonstrate how existing systems can be improved and replaced. This has the dual benefits of gradually upgrading technology to reduce the risk of service interruption and winning the trust of civil servant stakeholders, who can assess the benefits of a programme before full adoption. As can be seen in the case of Oscar II (Figure 6 above) and raised by the Treasury, projects which are rolled out too quickly risk failure due to being overly ambitious.

RECOMMENDATIONS:

→ Speed up legacy IT replacement: Removing all legacy systems simultaneously is neither feasible nor prudent but it ought to be done swiftly in order to introduce new technologies. The CDDO should publish an ambitious timeline for legacy system removal.
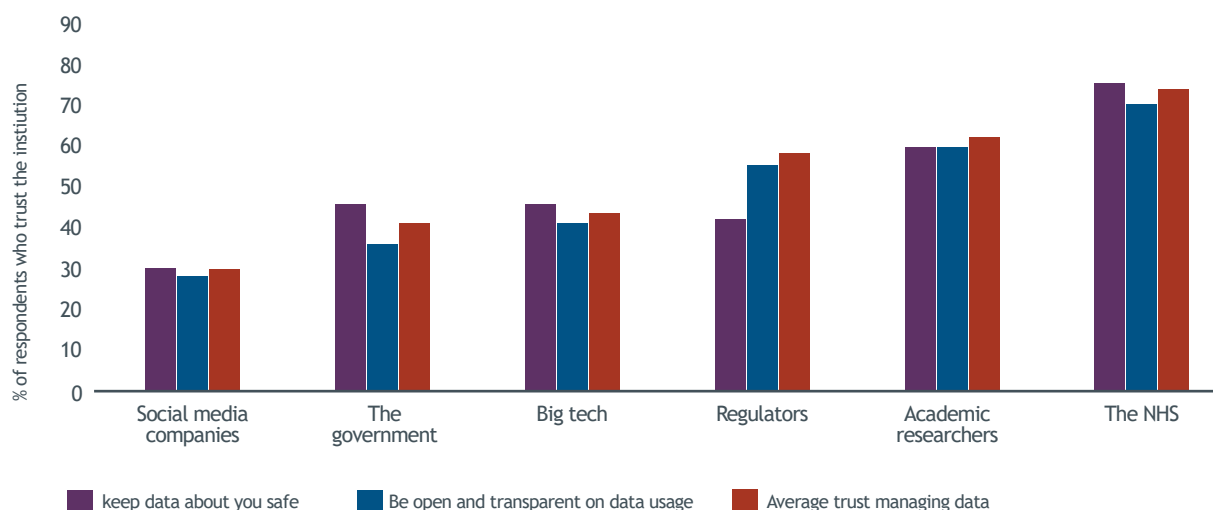
28 https://www.gov.uk/government/publications/organising-for-digital-delivery/organising-for-digital-delivery

Building public trust in digital and data use

"There must be consistency and a genuine degree of public trust in any digitisation."

Roger Taylor,

former Chair of the CDEI

FIGURE 5: CDEI - PUBLIC ATTITUDES TO DATA AND AI: TRACKER SURVEY 2022

Building support for greater digitisation requires a high level of public trust in digital processes and data analytics. Research from the CDEI found that only 40% of respondents trusted the government to manage their data, lower even than the 43% of respondents who trusted big technology companies. The government scored particularly badly (only 35% trusting it) on being open and transparent with what it does with data [29]. The level of trust in the government's management of data also fell between 2021 and 2022.

The public perception of data usage in services has been shaped by controversies over data sharing with the private sector, including that set out in Figure 6, and building trust will be crucial for navigating such issues in the future.

Building this trust will require setting out clearly what data the government gathers, how it is used and how that data is then shared with other parts of the public sector.

29 Public attitudes to data and AI: Tracker survey (Wave 2) - GOV.UK (www.gov.uk)

DOING MORE FOR LESS - HOW CAN THE UK GOVERNMENT TRANSFORM ITS USE OF DATA?

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"The government must be open with how programmes utilising data will benefit citizens in order to build their trust."

Roger Taylor,

former Chair of the CDEI

FIGURE 6: ALGORITHM A-LEVEL GRADING

During the pandemic, the government instructed Ofqual to award A-level grades to students using an algorithm. The end results were hugely controversial, with almost 40% of teacher-assessed grades lowered by at least one grade and higher-performing schools receiving lower grades, since grades were based on national averages. Roger Taylor, Chair of Ofqual until December 2020, explained that Ofqual had recommended to the government not to proceed with the approach of algorithm-based grading. He argued that the decision to go ahead with this approach demonstrated a lack of political awareness as to what these technologies can and cannot achieve, and the fundamental challenge was that they failed a basic fairness test with students and parents. He added, however, that there remains huge scope for algorithms and AI to be deployed in other areas of the public sector, such as identifying where people might be overpaying tax or matching people up to specific training courses that could help them develop their career.

Reforming funding process and technology procurement

HM TREASURY

The Green Book is Treasury guidance which governs spending decisions and the monitoring and evaluating of a project. It was reviewed by the Treasury in 2020, which concluded it did not go far enough to support the government's objectives of "levelling up" and reaching net zero, with too much emphasis on the Benefit to Cost Ratio (BCR). Similarly, in November 2022 the Treasury and the CDDO released revised guidance for digital programmes which relaced some rules around business case requirements.[30] The Treasury should review the first year of operation for the guidance, establishing where it has succeeded and where it could go further. It could then look to relax some Green Book rules further, particularly as the existing BCR formula does not fully reflect the cost savings from greater efficiency through digital processes or from no longer paying for maintaining legacy technologies. Further, Chief Data Officer at the Treasury John Kelly noted the Green Book process does not lend itself to future latent opportunities such as artificial intelligence.

The CDDO is looking closely at the Green Book guidance and how it can best reflect funding for digital projects, including how to release funding in a way that is value driven and accurately reflects the deployment and human resource spend. The CDDO was brought into the spending review process in 2021 to advise the Treasury, a welcome but modest step move towards ensuring a digital view in spending decisions.

Kirsty Innes, Director at the Tony Blair Institute argued there was more the Treasury could do in order to incentivise data sharing through business cases. She gave the example of the Shared Outcomes Fund in 2020 which awarded funding to departments which collaborate on joint bids as a best practice for encouraging data sharing.

FIGURE 7: HMT'S GREEN BOOK PROCESS

The Green Book is guidance issued by the Treasury on appraising policies, programmes and projects. It covers:

→ *Policy and programme development*

→ *All proposals concerning public spending*

→ *Legislative or regulatory proposals*

→ *Sale or use of existing government assets – including financial assets*

→ *Appraisal of a portfolio of programmes and projects*

→ *Structural changes in government organisations*

→ *Taxation and benefit proposals*

→ *Significant public procurement proposals*

→ *Major projects*

→ *Changes to the use of existing public assets and resources*

"Changing the culture of compliance around procurement so it is more agile is the first step towards government becoming more digital."

Cathal Long,

the ODI

PROCUREMENT

A major tool for driving technology innovation is through procurement processes. The NAO stressed the importance of having a discovery phase upfront as part of the procurement process. For example, the NAO would like all projects to begin by scoping out the existing data the owner has but the CCS's process does not consider existing data sets.

At present, procurement processes are better geared towards infrastructure projects, which have different risks and do not need to address legacy technology challenges. They also operate on a longer timeframe which is ill-suited to digital procurement, where innovation can surpass lengthy processes. The Technology Procurement Association has accurately argued that many of the best potential suppliers are launching new solutions more quickly than they can be sold to public bodies, so they do not want to be slowed down by the procurement process [31].

The Procurement Bill currently before Parliament will empower ministers to publish a statement setting out the government's strategic priorities for procurement, which must be considered by those administering contracts. This tool could be leveraged by the next government to ensure digital transformation is prioritised across Whitehall procurement processes.

An underlying policy concern within digital procurement is how to support British small businesses. Both major political parties are giving this issue attention ahead of the next election, with the Labour Party committed to using government procurement to support small British businesses and the government arguing in favour of the competition benefits of small businesses bidding for contracts. However, there is tension between promoting smaller providers and ensuring contract winners are capable of delivering a full service. The NAO noted that this is exacerbated by the government's inability to disaggregate contracts in-house, disadvantaging small businesses. Procurement processes instead could be designed to incentivise multiple technology companies to bid together on tenders, bringing in small and local businesses who might not be otherwise be able to participate.

RECOMMENDATIONS:

→ Complement the Green Book process with guidance on digital projects: The government should develop digital transformation guidance to be considered alongside the Green Book.

→ Hardwire digital and data-led processes into government procurement processes: Procurement processes should reflect the government's priorities on digitisation and incentivise small UK businesses involvement, such as through joint bids. This should be done through the government's statement of strategic priorities.

"Even a small local government procurement exercise typically costs over £40k and takes over 6 months. And afterwards, the lack of ongoing support for cost monitoring can lead to significant budget creep."

The Technology Procurement Association

|31 TPA The Technology Procurement Association – The place for all public sector bodies to find, understand, and procure transformative solutions (thetpa.uk)

Conclusion

As described by the ODI, "digital and data is the glue between policy and delivery", allowing the government to respond to new (or accentuated) public sector challenges and, as per the name of this report, 'do more for less'. At a time where public sector productivity is being closely examined, this report looks to provide a series of tangible recommendations to achieve greater efficiency through technology adoption.

The UK government is rightly ambitious – both in terms of improving productivity and in its aspiration to be a technology leader. However, without seizing the opportunities presented by developing technology and sufficient prioritisation, the UK risks falling further behind its international counterparts. These two separate ambitions can be achieved together, through greater digitisation and use of data. This is particularly pressing as artificial intelligence use cases continue to develop, many of which could bring numerous benefits across Whitehall, from reducing administrative burdens on civil servants to reducing the risk of citizens slipping through the cracks of public service.

The technology to achieve these ambitions is already readily available, raising the question of what is holding the government back. As outlined throughout the report, tackling the current Whitehall culture, existing spending processes and removing legacy technologies, should allow and incentivise progress.

The government will require a clear strategy fusing realistic short-, medium- and long-term goals to achieve full digital transformation. This will be an ongoing project and it is crucial all efforts are futureproofed, such as through ensuring interoperability, to avoid creating the same obstacles in another ten yeas time. It will be for the government to lead in this work, but support will be required from experts as they identify emerging technology trends globally and citizens who rightly have certain expectations from the government around data use. This report looks to be a part of this process and foster the type of collaboration and dialogue that will be required for true technology integration and digitisation in government ways of working.

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