

Rt Hon. Norman Lamb MP  
Chair, Science and Technology Committee  
House of Commons  
London  
SW1A 0AA

28 September 2018

Dear Mr Lamb,

I write in response to the Science and Technology Committee's call for evidence for its inquiry into Digital Government.

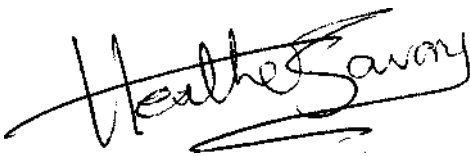
As the Committee may be aware, The Office for National Statistics (ONS) is the UK's National Statistical Institute, and largest producer of official statistics. We aim to provide a firm evidence base for sound decisions, and develop the role of official statistics in democratic debate.

ONS has a strong interest in digital government because data, and the digital technologies and capability to mobilise it, are key to delivering statistics that will help Britain make better decisions. Under the Digital Economy Act, we seek to unlock Government administrative data to provide higher quality, more timely statistics.

We work closely with GDS in several areas. The attached note explains how ONS' digital transformation is underpinned by many of the technology and associated services GDS provides. These support ONS in building the modern systems we need for data processing, improved analysis and Data Science.

In addition, we have offered evidence on those issues we understand the Committee to be particularly interested in, we would of course be happy to provide additional information as required.

Yours sincerely,



**Heather Savory**

Deputy National Statistician and Director General for Data Capability  
Office for National Statistics

## **OFFICE FOR NATIONAL STATISTICS – WRITTEN EVIDENCE TO THE SCIENCE AND TECHNOLOGY COMMITTEE: DIGITAL GOVERNMENT INQUIRY**

### **The progress of Government digital services, the areas where further development is particularly needed, and how well the UK compares with other countries.**

- Many UK Government services are now digital by default although often this is a modern user front-end across legacy technologies.
- GDS has made a significant contribution to the adoption of digital processes and services across government - changing how organisations think about delivery and digital in general and leading with a user centred approach. The next step is to fully modernist UK public service delivery and to support the ongoing delivery of digital public services
- Much of GDS' work over the last few years has informed the development of ONS' own digital services. In particular, the service standard, Digital, Data and Technology (DDaT) Capability Framework, spend controls and Agile ways of working.
- It should now be possible to think more widely about full systems transformation across government and encompass deep systems and data transformation to underpin service delivery. By designing systems in the context of a wider business process and systems transformation agenda, the need for significant re-engineering further down the line can be avoided.
- It is important that the UK keeps up with emerging international technology standards given the value we get from interoperability and transparency. At ONS, we are increasingly looking to collaborate internationally with statistical agencies, analytical and data/technology providers.
- International statistical standards are also essential to ONS to ensure that the public service provided by statistics and analysis is seen as authoritative both in the UK and internationally in areas like the measurement of public finance, trade, migration and a broad range of economic and social issues. This is an area where the UK has not been as well placed as we would like<sup>1</sup> but where good progress is now being made.
- In addition, standards are becoming more important within the UK to ensure effective working between the Devolved Administrations in Scotland, Wales and Northern Ireland, as well as cities and local authorities.

### **How well Government digital services are protected from cyber attacks.**

- Changes to the security assessment approach across government, driven by GDS and partners such as National Cyber Security Centre (NCSC), are ensuring that significant digital services undergo the appropriate security assessment, including the protection of citizen and business data.
- GDS and NCSC have espoused commodity services, such as Web Check, that support Departments to assess and secure internet-facing service portals or Notify for emergency

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<sup>1</sup> Independent Review of Economic Statistics, 2016,  
<https://www.gov.uk/government/publications/independent-review-of-uk-economic-statistics-final-report>

contacts. ONS uses these services and benefits from the outcome achieved in both design terms and security operations.

- Government Security Secretariat (now Government Security Group) security approaches, derived from GDS design principles, encourage secure digital by default services within agile development approaches for internet facing services and are utilised by ONS, including survey data collection services redesigned for online use.
- Recent changes to the organisation of security within Government through the Cabinet Office security hubs have supported the development and issue of more consistent and timely security advice for digital services that reflect the GDS design ethos which ONS has utilised.
- ONS security teams utilise Government guidance and best practice issued through GDS and NCSC, for example to secure cloud infrastructure, deploy protective monitoring services and develop services using common design patterns. This provides ONS with standardised, repeatable and consistent security configurations and services aligned to Government models. Additional benefits are realised through reduced security assurance overheads when discussing data sharing with Government partners.
- ONS has redeveloped its security design model integrated into its Agile digital service development. This has led to a cultural shift that has moved security away from a retrospective, reactive and compliance-driven approach to a business-led, collaborative approach. This significantly improves the security being designed into services, reduces rework, and offers business teams options to secure and support business innovation without compromising security.

### **How well the Government Digital Service (GDS) has helped spread the use of digital services across Government, including promoting the use of new technologies and uses of data.**

#### **Embedding open source technologies across government**

- GDS introduced and championed the use of re-usable open source technologies, including the exemplar 'how to' programme that created re-usable patterns, components and code and guidance on how to create re-usable assets and patterns.
- This philosophy has been embedded within ONS with the creation of an ONS pattern library used by multiple areas, including large scale development projects such as the online survey collection platform. ONS has both re-used code from GDS and created code that has been made available for use by other government departments.

#### **GDS built and maintained products and platforms**

- Government as a Platform in GDS has built and operates a number of easy to re-use products, platforms and services that accelerate building, increase quality, reduce cost and remove the need for local maintenance. ONS is using one of these: GOV.UK Notify.

#### **Setting the Digital Service Standard**

- The GDS Digital Service Standard, service manual and service assessment process have underpinned a cross-government approach to building digital services to meet the needs of citizens.
- This delivers a single point of access for most government services and a consistent user experience that engenders trust. These standards have been used across ONS in the development of our own digital services, most notably in our online survey development.

## **An improved procurement framework**

- Work by GDS on a new procurement framework has:
  - enabled accelerated procurement
  - broadened the number and type of suppliers available
  - helped reduce the cost of products and services as well as the cost of running procurement services
  - provided a quality benchmark for suppliers
- This has assisted ONS in moving to a more cost effective and efficient blend of multiple suppliers and internal delivery on large implementation projects.

## **Innovative Data Science Partnerships**

- GDS has partnered with ONS and the Government Office for Science (GO-Science) to form the Government Data Science Partnership (GDSP), to support and scale the growth of data science across government. The GDSP has:
  - developed a community of data scientists across government, breaking down silos through collaboration tools (Slack: c1,600 users), conferences and meetups
  - used this practitioner-led community to crowdsource the framework for the DDaT Data Scientist job model, the Cabinet Office Data Ethics framework and develop best practices around the use and application of data science techniques and technologies to support transformation programmes.
  - run the Data Science Accelerator programme, a 12-week mentoring programme matching analysts from across government with senior data scientists in GDS, ONS, DWP, HMRC and UK Hydrographic Office to work on data science projects of benefit to their department which upskills participants in core AI and data science techniques. Ownership for the accelerator has recently passed to GDS Academy.

## **Identifying and sharing new technologies**

- The digital agenda is inextricably linked with new technologies and uses of data. We would welcome cross-government advice about the emerging technology landscape including the application space or emerging solutions for data handling/analytics.
- To fully realise the potential of new technologies across the public service it would be helpful if there were stronger incentives for joint working across departmental boundaries.

## **The digital skills capacity in Government departments and agencies, to be able to deliver effective digital services to the public and businesses.**

Efforts to build skills are essential. We are highly conscious that the skills of technical staff are in great demand externally leading to significant recruitment and retention challenges.

## **Digital Data And Technology Capability Framework**

- The creation of the new profession for Digital & Technology has allowed a new culture and skill-set to be brought in and retained in government through:
  - defining the skills/responsibilities for roles, which ONS has adopted
  - promoting collaboration/supporting the definition of learning pathways
  - supporting recruitment by attracting talent from outside government
- The role context GDS provided around Civil Service competencies has led to greater staff engagement, with focussed development opportunities and greater consistency of role

descriptions across government. GDS career pathways have opened up wider development opportunities that reflect industry. Fast Track Apprenticeship and Fast Stream Graduate Schemes are allowing more targeted recruitment and development pathways, resulting in a quicker “route to being useful and effective”.

- The collaboration between departments on DDaT GDS has facilitated, especially in South Wales and Bristol, has led to closer working relationships between departments and more consistency in how we view and communicate individual roles.
  - ONS digital and technology has adopted the communities of practice approach established by GDS.
  - GDS product and service communities are well used. The Design/UX community has been integral to ONS developing its digital profile, sharing best practice and aiding cross-department communication.
  - The promotion of digital roles within government has raised the market value of these public-sector roles across the country. This results in a challenging recruitment/retention situation. ONS uses external resourcing solutions to satisfy urgent demand, with a reliance on high-end contractor services, at significant cost.
- Whilst we welcome the priority given to date to the development of DDaT skills, it is important now to build capability in allied analytical professions to ensure the balance and utilisation of skill is right to meet the future needs of the civil service. This is particularly important for the operational research, statistics and economics professions which currently employ most of the data scientists in government.

### **Raising the bar for digital skills**

- Staff across disciplines now have improved digital skills and can employ them to use new tools and applications. There is less of a ‘fear factor’ about change and many once resistant to ‘digital by default’ are embracing new possibilities.
- Agile (with a small ‘a’) approaches are bedding in. Once a purely software development domain we are now seeing agile as a standard delivery toolset for ONS business activities.
- Long term legacy replacements and systems integration requires specialist technical skill. Generating a workforce of technologists requires focussed recruitment, full consideration of market competition as well as significant investment in training and development.

### **GDS guidance and governance - written and verbal**

- GDS guidance and governance, such as the GDS Service Design Manual, Government Technology Codes of Practice, and Service Assessments have been used throughout ONS projects, such as Survey Data Collection, the ONS website development, Registers and Data Access Platform.
- Adopting the Digital Service Standard has helped ONS attract talent, demonstrating our commitment to working in an agile, innovative way.
- The Service Assessment Standard and guidance has allowed ONS to create an internal review process increasing the quality of work produced.
- GDS staff have also provided free, trusted technical expertise to support ONS teams, which has been especially useful when neutrality is needed for a balanced outcome.
- GOV.UK blogs share the expertise of GDS and other government departments.

- The domain approval system GDS champions means ONS has an external pair of eyes on every web domain registered and used. This has been helpful in enabling us to consolidate our web estate.
- The networking opportunities offered by the sprint events have also led to greater knowledge sharing.

### **GDS training**

- GDS Academy offers high quality, low cost training and provides consistency across government. It is partnered with ONS (Data Science Campus and Learning Academy) to develop a single data science curriculum that will be delivered across both DDaT and the Government Statistical Service.
- The GDS training courses for Delivery Managers, Product Owners and Service Managers have been particularly useful to ONS, and facilitate networking and knowledge sharing through membership of the communities following the training.

### **How well the Government and its agencies deploy their datasets to maximise their value for money, effectiveness and delivery of digital services.**

- Data is at the heart of full digital transformation and driving efficiencies in public service delivery. Now is the time to seize this opportunity for data transformation across the public sector. This will require significant and sustained senior commitment across government.
- Data engineering is difficult, hampered by data residing in operational legacy systems, with often little/no understanding of how these were designed or are meant to work. Years of outsourcing has led to a surfeit of black box systems which staff need to figure out before being able to attempt to change them - assuming they have the requisite skills to do so.
- A specific opportunity is to put registers at the core of data standardisation and interoperability, making them usable as a centralised service providing users with access to authoritative, quality checked lists. There is good work being done in GDS, ONS and elsewhere that can be taken further to realise the potential here.
- We hope that the recently formed Geospatial Commission will build on GDS work on geographic reference data and registers and actively promote common standards across the public sector. ONS is engaging directly with the Commission to encourage this.
- GDS work on data has focussed on data analysis, some infrastructure (registers), and on making 3, 4 and 5-star open data available through various means (e.g. data.gov.uk). A coherent data strategy and incentives to further data sharing and interoperability, would enable substantial benefits to be realised.
- In Open Data clear messages are needed about the move to a minimum 3-star standard. A similar drive towards using Open Data Spreadsheets (.ODS) on GOV.UK also needs to be consistent. A holistic approach to open data is needed, including advice and support in how to utilise the new formats.
- If the opportunity from open data is to be realised we need to make sure open data is available, discoverable and maintained to basic service standards.
- We support an overall approach to interoperability, data infrastructure and data standards for government. These are fundamental to data sharing, and need to be properly addressed, to underpin effective data use.

- Departments that have managed to get data from other areas of government report they spend a substantial amount of time formatting the data for analysis. Acquiring raw data without understanding it appropriately (i.e. agreeing the meaning of attributes and their format), can lead to processing errors and inaccuracies in outputs.
- The adoption of common data standards across government would help realise the value of data sharing. The value of the data itself and also the processes that enable organisations to obtain and process the data. We should aim to move beyond simply seeking 'quick wins' and move towards more effective, practical service design.
- The data strategy for government should be part of the wider National Data Strategy. This will ensure that technologies are built to support data sharing and exploitation for different purposes including digital public services. Data standards, together with the right approach to shared registers, and adequate mechanisms to share the data, should go in tandem with how to store and how to analyse the data. ONS is developing practical solutions in this space and is ready to contribute to this strategy.

**The extent to which Government datasets are made available to private-sector and academic service developers, and how well its 'open data' arrangements are operating.**

- Alongside Open Data, significant benefits can be realised from Government datasets that cannot be made available openly without risking the confidentiality of the people and businesses within them. ONS balances these competing needs, to open up access to data while ensuring confidentiality at all times, through the provision of its Secure Research Service (SRS). This service gives access to data through a secure, ONS-managed, analysis platform, rather than allowing researchers to download the data into their own systems. To access the service, researchers must be trained and accredited by ONS, their research must deliver clear public benefits, with all results checked by ONS to ensure confidentiality before being published and made freely available. All data use must be fully transparent and recorded on the ONS website.
- The SRS is accessible by all sectors, for research proposals meeting published criteria. Its use has grown significantly in recent years, with over 300 research projects completed in 2017/18, delivering significant public benefits from the re-use of ONS data. The service is currently being expanded, through a partnership between ONS and UKRI, using the Research Powers within the Digital Economy Act to enable secure re-use of data from across the Public Sector. A requirement is that results from any research must be published openly for all to see (validate, challenge etc) so transparency covers not only being open about who is doing what and why, but the results and outputs.

**The implications and opportunities for GDS arising from Brexit, including areas where the nature of digital services may have to change.**

- GDS has facilitated the re-use of digital assets to accelerate development of digital services to support EU exit. They have put the Department for Environment, Food and Rural Affairs (DEFRA)/ONS in contact to explore using the ONS Survey Data Collection service to create new export forms post EU exit.

**The implications for GDS following the move of its data policy and governance functions from the Cabinet Office to the Department for Digital, Culture, Media and Sport.**

- Overall, we see the move of the data, policy and governance function to the Department for Digital, Culture, Media and Sport (DCMS) as positive as it aligns well with other areas of the DCMS remit, for example the Digital Economy and regulatory oversight.
- ONS works very closely, collaboratively and positively with the data policy and data governance team both at GDS and now that it is within DCMS. This collaboration has been particularly important to take forward the policy and legal development of the statistics and research strands in the Digital Government powers in Part 5 of the Digital Economy Act 2017, including through public consultations, stakeholder engagement, and parliamentary scrutiny. ONS continues to work closely with this team in DCMS as we operationalise the statistics and research strands of the Act, also supporting them in their remit under the Better Use of Data programme, and as secretariat of the Data Advisory Board of senior leaders in government. We also engage regularly with other DCMS data teams, for example those responsible for cross-government data protection policy.