

Making Digital Government Work for Everyone

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This is the final report of the Digital Government Review. An independent review to the Labour Party commissioned by Chi Onwurah MP – the Labour Shadow Minister for Digital Government, Cybersecurity and Social Enterprise.

The report will be considered as a submission to Labour's policy review.

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Foreword

Love it or loathe it, technology shapes what we do and who we are as never before: from work and leisure to the most intimate moments in our lives. What does it mean to capture the best of these possibilities in the relationship between citizens and government – and to do so in a way that doesn't leave the disadvantaged and disconnected behind?

Most political discussions around technology don't begin to address these questions. Policymakers still tend to treat the "digital world" as distinct from real life. It's either a dazzling solution to all our problems – or a bewildering distraction. It's a new world of power and possibilities – or it's a nightmare of snooping, spam and spiteful gossip.

Little wonder that many people feel disillusioned, disempowered or simply distrustful the moment talk turns to technology and politics. Surveillance and cyber-warfare dominate the headlines; positive press is the province of the private sector. Massive public sector projects all too often over-promise and under-deliver, while new initiatives and talk of digital revolution sound like so much hot air: jargon and self-indulgence from people out of touch with everyday life.

It doesn't have to be like this.

Earning and deserving trust

Before everything else comes trust. I need to be able to trust the government with my information, with my children's information – and be able to hold accountable those services using it. I need to be seen not just as a consumer but also as a citizen, with the choice to participate and with all the rights and responsibilities that entails. And I need this participation to be brought to me no matter who I am, where I live, or how much I earn.

This is, in part, a document setting out how that trust can be earned and deserved – and how it can be brought to every citizen, regardless of their means and expertise. But it's also a document with a clear vision for something larger: for explaining what an authentically progressive, democratic version of digital inclusion looks like – and how it differs from the top-down hopes of recent history.

Much has already been achieved by Government Digital Service (GDS) in building the basis of this shift. But it has yet to take the leap towards a genuine national transformation. From planning applications to hospital waiting times to local policing data to council agendas, information needs not only to be available online to all, but available with a clarity and accessibility that make it as universal as email or text messaging.

A means, not an end

For this, we need not only websites and apps, but educators, community champions, more and better-resourced local facilities, and new forms of local partnership. We need a culture that takes solving many problems out of central government's hands and puts them into all of our hands. We must

create a more even and passionately debated negotiation between those best-placed to understand the problems and to build the solutions.

Transparency and accountability are buzzwords for most reformers – and for good reason. What’s vital, though, is that they don’t simply become ends in themselves, divorced from the social goods and local outcomes that they’re designed to engender.

If I have a comment or problem or feedback to offer – on my own data, on the services I’m receiving, on the issues I care about, on what’s happening outside my front door – I need to know not only that I will be listened to, but that I have the right and the capacity to affect what happens next.

I need to know where to go for help. I need to know that help matched to my needs will be meaningfully available. And I need to see civic life reflected not in bureaucratic indifference, but in a hub of services and opportunities centred around my life as I am living it.

The next five years

We are at a critical moment for the evolution of digital services in the UK, and we face critical questions about technology and democracy. Who is technology for: the geek elite, or those who need the greatest support? What, precisely, constitutes an effective strategy designed to provide more power to citizens rather than more control to government?

In the following pages you will find detailed arguments and evidence drawn from the whole spectrum of political belief and involvement: from leading businesses to academics to social enterprises to individual citizens.

Above all, we believe you will find something hopeful: an urgent and clearly-articulated set of beliefs about technology and democracy that may not command universal assent – but that demand the very best debate we can muster, today, if we are to build the tomorrow we deserve.

Tom Chatfield
November 2014

The Prize of Digital Government

“Given the impact that technology is having on every aspect of our lives, it is inconceivable that the public will forgive politicians for failing to properly harness its potential to improve public services too.”
- Large Company

Throughout this review we will set out a vision for a new kind of digital government.

We believe that digital transformation provides the opportunity to build a new type of government and to deliver it in a cost-effective way, a way that simplifies and automates many processes.

Much of the preliminary work for this transformation has been performed but there is a lot left to do to both complete the transformation and to ensure that it includes everybody; that it improves public services; that it improves the wider economy and builds participation through increased trust, accountability and by listening to what people need – rather than just telling them what the government wants them to hear or do.

This transformation can represent not only a model for efficiency and accountability, but also a major prize for democracy itself, with enduring benefits to be won within every citizen’s relationship with the state.

This is **digital designed for people and communities**, not digital for government. It is an approach to digital that we believe people will trust and will choose to use; and that they will choose to participate in as citizens rather than simply find it imposed upon them.

At the same time, we recognize that we are in a time when the public sector faces severe financial constraints. Money is tight, yet public services also face increased demands: as a result of both changing demographics and rising expectations. Our public services will have to be affordable in this environment. New investments will be expected to show that they can be funded through defined benefits; that this new more cost-effective government can fund better public services.

To show how this can be achieved, we have first defined our desired outcomes, clearly setting out what we mean by improved public services as well as more cost effective delivery. The task, then, is to achieve these outcomes by effectively identifying and managing the benefits and risks.

Desired Outcomes

We need to **embed trust, ethics and security** into digital services. To achieve this we urgently need an investigation into “data and society” that openly and honestly recognises the challenges of handling and analysing personal data; that assesses the true benefits and limitations of big data and open data; and that defines a set of principles/rights and builds a new legislative framework to enshrine those rights in law.

We need to create a common approach to security and an ethical framework for developing new services. These will all help to rebuild trust and to reduce the 'digital discomfort' that so many people feel when using digital services.

We must **design digital for everyone**. We should not and cannot be restricting the benefits of the best digital services to those with the best skills and access: we need to include everyone and understand their differing needs.

To achieve this we recommend funding a programme to provide basic digital skills to those who lack it, while providing assistance to those who can or will never use digital. We recommend creating a new approach that can increase the pace of digitisation in cities and towns while recognising that those cities and towns need to retain control over their own identity and destiny. And we recommend defining what digital access and services people should expect in the 21st century.

This does not mean that we think every public service should be digitised. Where a service is digitised, however, we must insist that everyone should be able to benefit from this.

We have to **focus on benefits to society**, not just the cost to government. Rather than focussing on websites that save five minutes of form filling once a year, for example, we should be working with people and communities to use digital technologies to transform social care or to help reduce the cost of renting.

We need to move away from a narrow focus on 'digital-by-default' and 'channel shift' and instead to have a deeper discussion about the benefits that the digital transformation of public services can bring to people and society. Government must be in a position to focus its best experts on the most important challenges as measured above all by social benefit. This approach will not just produce more cost-effective public services; it will produce public services that create better outcomes for people.

We need to **build stronger delivery capabilities**. To achieve this we recommend starting with cabinet-level leadership for digital activities, but also increasing digital capabilities across the public sector by embedding it into all organisations. Suppliers need to understand what the public sector expects from them while the public sector needs to understand the capabilities of different types of suppliers.

We recommend gradually building a common architecture, or platform, based on open standards, open data and open APIs to increase reuse and to reduce the cost and time it takes to implement new policies or build new services.

Finally, and possibly most importantly, we have to **put people in control** - when they want to be in control - and have to support them when they don't. We need to increase participation by opening up the public sector to requests and feedback from the people and communities that they serve.

We should open up performance data to improve accountability. We should recognise that the data government holds is data that is owned by the people. We should give people a choice in how they authenticate their identity with government, and support them if their choice fails. And we should use digital technologies to build 'scaffolding' around government: an open, common structure for access and interaction allowing people and communities to build their own services. We need to debate services with people before building them, and we need to allow people and communities to build their own.

To put it another way: rather than imposing public services onto people we need to work with people to design and build services that are centred around them.

"We need to redesign services rather than just put a digital front end to existing processes"
– Charity

Identifying benefits and risks

It is all too easy to focus on large benefits without understanding the risks that delivering projects face. These risks may mean that the benefits are never seen. They may show that it was never possible to realise benefits in the first place. This report covers both benefits and risks, and is aimed not at consensus, but rather at creating informed debate – and better-informed opinions.

Some benefits can be quantified financially as savings in government expenditure. For example, moving central government services online has been forecast to save government £1.7 billion every year whilst the imminent expiry of other major government contracts could lead to billions in yearly savings as new services are built to replace them.

But there are many other benefits that, though quantifiable, do not fall directly to government revenue. For example, improving digital skills will improve people's employment prospects and productivity as well as giving them access to cheaper goods and services.

There are also benefits that are less tangible to identify and more difficult to evaluate financially than employment or productivity; but that still carry significant value to people and our society. For example, increasing the level of trust and participation in public services, or sowing the seeds of future services and innovations.

Direct financial savings make it easier to justify investment and have thus been keenly sought after at a time of austerity. However, it would be a grave mistake to ignore these other, wider classes of benefit.

Better outcomes for people (for example education levels, employment prospects and health) have a significant beneficial impact on our wider economy and society. Improved trust in government digital services will lead to higher levels of engagement with government and greater participation in the wider digital economy. A small increase in productivity and overall GDP will ultimately be of far greater financial benefit than a cut to a government department's expenditure.

Similarly, we need a broad definition of risk. It is important that we understand implementation risk and timescales when considering anticipated benefits. After all, the government does not have a very good track record of managing large and complex digital projects. Equally, it is important that other risks are effectively managed: the risk that a section of our population is unfairly excluded from the benefits of digital, for example, or that people who distrust government with their personal data will choose not to use its digital services.

Digital Public services to 2020 and beyond

It would be an error for this report to present detailed plans for how to implement these recommendations. Capabilities and ideas are evolving too fast for plans to be mapped out precisely many years into the future; we are learning more and more as both the UK and other countries around the world build digital services. We also expect many of the key innovations to come from local initiatives rather than top down strategies. It will necessarily be a process of trial and error: of looking for good ideas and cultivating them so that they spread.

"The next five years offer real opportunity beyond just a technology manifesto....it will be the moment for digital" – Think Tank

Over the next five years, digital technologies will provide many diverse opportunities to innovate and improve our public services. Each will offer a different profile of potential benefits and risks that will need to be managed. A fixation with one initiative, for example moving services online, risks missing out on other opportunities that may be of greater overall value in meeting the desired outcomes.

The figure below shows a potential analytical framework that would be suitable for some initiatives.

<p>Improved Digital Capabilities</p> <p>Providing better online services across all of government. Rationalising duplicated systems by defining a common architecture and open standards. Gradually coupling together components to build platform(s). Allowing government to work horizontally as well as in silos. More effective procurement and project delivery.</p> <p>Benefits: Efficiency savings. Consistently good digital services across government. Improved information reliability and quality.</p> <p>Risks: Scarce resources. Implementation risks with large projects. Ethical risk of sharing and using data across organisations. Differing priorities and accountabilities across public sector. Ensuring all people can benefit.</p>	<p>Collaborative and Open</p> <p>Encouraging people to participate in design and delivery of services. High quality open datasets and APIs made freely available. Supporting the growth of new digital communities with government</p> <p>Benefits: Increased participation between people and the public sector. Innovative new digital services. New private and social enterprise startups that bring innovation and create new jobs. Benefits to communities and wider economy.</p> <p>Risks: Ensure inclusive approach. Growing participation. Ensuring public trust in government use of data. Encouraging effective reuse.</p>
<p>Improved Public Services</p> <p>Using digital tools and a common architecture to transform all public services. Applying capabilities across organisational silos, for example integrating health and social care.</p> <p>Benefits: Efficiency gains through automated data capture and sharing. More effective public services.</p> <p>Risks: Ensure people-centric service design. Ethical concerns re capture and sharing personal data. Implementation risks of large, complex, service transformations</p>	<p>Data Analytics</p> <p>Building government use of data and analytical tools to deliver insight to support better deliveries, better policies and better decision making. For example use of health data to identify trends, preventative actions.</p> <p>Benefits: Some efficiency gains through better resource allocation. More effective decision making and outcomes. Ability to provide personalized services.</p> <p>Risks: Ethical use of data, in particular personal data. Need for specialist skills. Poor quality of government data.</p>

Figure 1 – Potential analytical framework for determining benefits

How we get there

As we have outlined above – and discuss in detail throughout the report - making the most of the opportunity digital presents demands a new approach. It must be flexible, adapting to new opportunities and risks as they arise. It needs to grow from the ground, harnessing the creativity of people and communities around the country rather than being designed in and for Whitehall.

It needs to be a truly national programme involving people and communities, universities and research institutions, the third sector and the private sector. It should also be open and transparent, so that all are encouraged to contribute, monitor progress and make suggestions.

Throughout the rest of this document we set out a series of recommendations to achieve this prize.

Before we do so, however, let us begin with one recommendation that necessarily comes before the rest: leadership. Driving a programme of change through the complex machinery of government will require Cabinet-level leadership; but it also requires individual departments to understand the power and challenges of using digital technologies to transform their services.

The drive must come from across government, not just from one department. Digital is not an optional extra, to “do” or not as resources permit. It is a part of every brief: a question of countless contexts to be negotiated, each bearing a portion of the prize.

Recommendation 1

Priority: High

Retain Cabinet Level leadership for digital transformation but with individual Secretaries of State in key departments (DWP, HMRC, DfE, DEFRA, DCLG, Transport, MoJ, Health) leading in their own areas.

Ensuring Everyone Enjoys the Power of Digital

Introduction: the unique role of the public sector

We are living through a period of great change. A post-industrial economy is taking shape; the shift to a services economy is flattening out old, hierarchical command and control structures; digital technology is unseating whole industries and workforces.

Technology shapes what we do and who we are as never before. From work and leisure to the most intimate moments in our lives, it has opened up wonderful possibilities (such as seeing a remote relative or accessing the world's libraries and art museums), made it easier to start new businesses, changed the way we work and altered our expectations of government.

A recent BT-commissioned report attempted to quantify the benefit to individuals of being online. The report estimated these benefits to average £1,064 per annum for a new user [1].

Yet 20% of the UK population, 10.5 million people, lack basic online skills. 69% of these people are in socioeconomic group C2DE [2] while 80% of government interactions are with the poorest 25% of the UK population.

These may seem dry numbers, but if we fail to understand these facts and target the same services towards everyone - rather than addressing the unique circumstances of the substantial excluded population - we risk widening inequality in our society.

This exclusion also echoes a second unpalatable fact. We are living in times when recession and austerity measures have hit some of our citizens harder than others - and when nine out of the ten poorest regions in Northern Europe are in the UK [3].

Here, the public sector has a unique role in delivering what the private sector cannot. It cannot choose its market, nor can most of its 'users' choose whether to interact with the public sector. People without basic online skills include a large proportion of the citizens that government interacts with most. And these interactions entail some of the most complex and knotty of public services, like social care, housing or helping people move into paid work.

Addressing these facts demands a sophisticated sense of where the greatest needs and opportunities lie, and how these can be firmly focused on helping citizens rather than simply making processes more efficient for government.

Government Digital Service: the right delivery, the wrong targets

"Often the process is too complex or the language cannot be understood. There is not enough user engagement in the design, build and implementation of online services from a broad range of able, disabled and elderly users" - Individual

1 <http://www.btplc.com/Betterfuture/ConnectedSociety/Valueofdigitalinclusion/Valuing-Digital-Inclusion.pdf>

2 These figures are from BT's report published in Nov 14. Other sections of the report use other estimates, we will come back to the need for stronger research later in this chapter
<http://downloads.bbc.co.uk/aboutthebbc/insidethebbc/whatwedo/learning/audienceresearch/basic-online-skills-nov-2014.pdf>

3 <http://inequalitybriefing.org/brief/briefing-43-the-poorest-regions-of-the-uk-are-the-poorest-in-northern->

Over the last four years, the current government has spent significant time, money and effort building a centre of excellence for this digital transformation, GDS (Government Digital Service).

GDS has done great work in building a team of world-class experts, creating a wave of enthusiasm and cultural change across government, building a Service Standard (and associated Service Design Manual); components that can be used by other organisations, demonstrating that government can deliver fantastic digital services, and instilling a focus on people's needs rather than on Whitehall's needs.

GDS is a fantastic delivery machine. Unfortunately, when selecting the services that it wished this machine to deliver, the Government took a very Whitehall-centric view.

Twenty-five services, ranging from voter registration to patent renewals and prison visit bookings, were selected as "exemplars" for redesigning and rebuilding. The selection was based on the volume of existing central government transactions and hence the potential cost savings for central government by transferring those transactions to digital.

This is a methodology called "channel shift" and its focus on these transactions – while understandable - meant neglecting other, key questions. What is actually most important, creates the most value, or best meets people's needs?

"There needs to be a balanced approach between assisted digital (which will typically rely on support from a family member) and those that need ongoing face-to-face support. These services need to be protected in perpetuity" – Large Company

In short, the fantastic delivery machine was not focused on the best possible targets. In particular, the current approach to digital services has failed to consider significant contextual issues such as the cost of housing, the difficulties of getting back into work, or the cost of living. It has barely touched upon local government or the NHS. And it has neglected those without basic online skills or those who lack the ability to use and benefit from online transactions [4].

The alternative approach: seeing services in their social context

By over-stating success and under-estimating how much is left to do across the public sector, Government risks derailing the progress that has been made.

Existing thinking and policy on digital services confuses central government websites with the entirety of our complex public services. They fail to understand why so many of our transactions and interactions are necessarily face-to-face and human. They fail to understand that digital can support front-line workers with those transactions and that providing better support to the frontline can also reduce costs, improve public services and provide better outcomes.

An alternative, more people-centric approach means assessing where digital government would provide the biggest benefits to people. This more nuanced view will continue to assess the cost to government (many people, after all, are taxpayers), but it will also factor in the improvement to people's lives. It must include the wider benefit to society, not just savings in Whitehall.

Similarly, the government has failed effectively to address digital inclusion. It has failed to understand or assist the 21% without basic online access and

⁴ There is a subtle but important distinction between these two items. Some people will never be able to use online services on their own: <https://www.gov.uk/service-manual/assisted-digital>

skills. Instead, this challenge has been left to the voluntary sector, the private sector and local government ^[5]. And while central government belatedly launched a digital inclusion strategy in April 2014 ^[6], this was accompanied with minimal investment and its execution has only just started.

Central government has also announced that it intends to provide Assisted Digital services to those who will never be able to use online services independently, but it is difficult to find evidence of these services being rolled out in parallel with services for the digitally included. Instead, they are committed to follow, but on an indeterminate timescale.

In short, there is far, far more that can and must be done if digital services are to offer meaningful improvements to those in every section of society.

Digital inclusion: current examples

The current digital inclusion strategy includes the following graphic (figure 2) to help visualize the challenge. The figures at the top indicate a percentage of the UK adult population; the grades at the bottom are particular skill levels. Figure 3 uses this graphic and those grades to explore five simple examples, comparing in each case what happened with what could have happened under this report's approach.

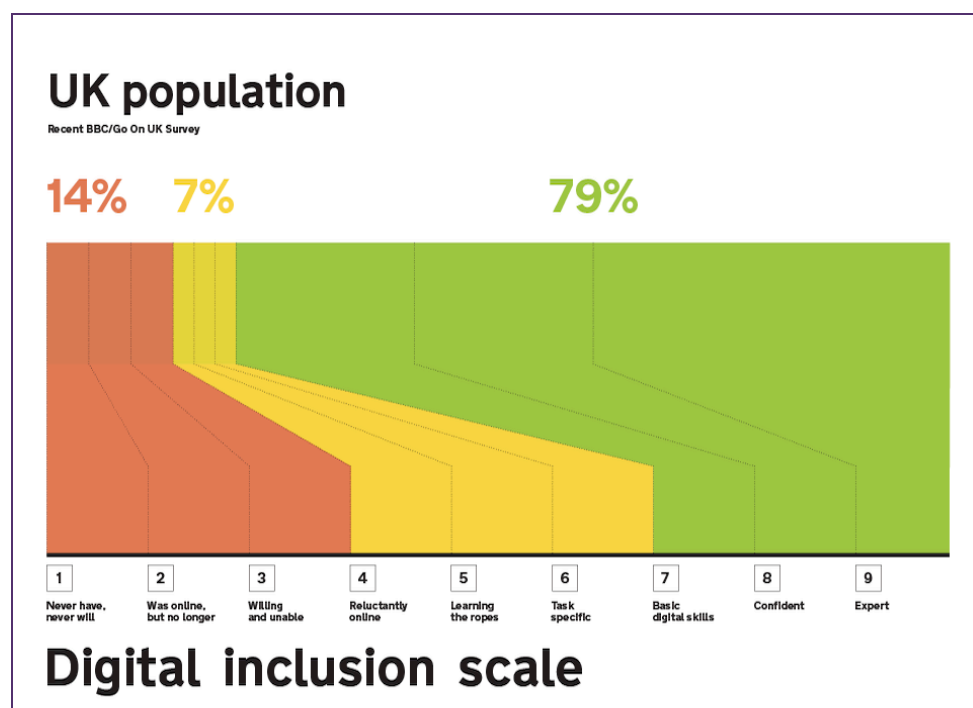


Figure 2 - Graphic from Government digital inclusion strategy

⁵ Some local government digital inclusion work is funded by DWP via the Universal Credit LSSF (Local Support Services Framework) fund: <https://www.gov.uk/government/publications/universal-credit-local-support-services-framework>

⁶ <https://www.gov.uk/government/publications/government-digital-inclusion-strategy>

Service	What happened?	What could have happened?
Universal Jobmatch	An online service was launched to allow jobseekers to search for jobs online. Jobseekers faced sanction for not searching for jobs using this service but were provided little assistance.	<p>JobCentre staff could have assessed digital skills and directed to routes to gain skills</p> <p>JobCentres could have provided computers and free Wi-Fi access for use by jobseekers without access at home and provided support to jobseekers to use them.</p>
Open Standards	Government announced a move to an open standard document format for digital collaboration [7] with the intent of increasing choice and reducing costs to both government and people. Central government documents are now being released in this new format but there is no support for people unfamiliar with the format or lacking the skills or confidence to research.	<p>Government could have launched pilot projects with frontline workers collaborating via documents with people to assess the skills challenge.</p> <p>Government could have linked to external advice about the document format and applications that use it to address the skills and confidence issue.</p>
Driving Licence Renewal	DVLA has launched a consultation to introduce differentiated pricing for renewing a driving licence. If the consultation is approved it will be cheaper to renew online. Yet the DVLA has performed no research on how many people who lack basic digital skills [8] will be affected due to their inability to renew online.	<p>Evidence could have been gathered and released alongside the consultation.</p> <p>The option of sharing the benefits of digital savings with everyone, not just those with digital skills, could have been included in the consultation.</p>
Digital Exemplars	GDS has graded 23 of the digital services that it is leading on against the digital inclusion scale [9], which ranges from one at the bottom ("never have, never will") to nine at the top ("expert"). Two services required level 6 ("task specific") on the scale, sixteen required level 7 ("basic digital skills") and five required level 8 ("confident"). People with skills below these levels do not benefit from the new digital services.	<p>Launching strong digital inclusion and assisted digital strategies alongside the new exemplars would have helped address the gap.</p> <p>Government could strengthen governance gates to ensure that digital services are accessible (with assistance or not) by everyone before a service moves to a Live status.</p>
Voter Registration	Government has launched a simple and easy to use online voter registration service. The service is claimed as being available for 99.9% of people [10] yet this service is classed as requiring level 6 on the digital inclusion scale. 21% of the population falls below this level. Advertising focuses on the digital service for voter registration.	<p>Performing a pilot project to assess the impact of online voter registration on registration amongst the digitally excluded would have provided more evidence about the impact of this service.</p> <p>Providing a digital service with a stronger link to assisted digital and paper channels would reduce exclusion.</p>

⁷ <https://gds.blog.gov.uk/2014/07/22/making-things-open-making-things-better/>

⁸ <https://twitter.com/DVLAgovuk/status/494768346634539009>

⁹ <https://www.gov.uk/government/publications/government-digital-inclusion-strategy/exemplar-services-and-identity-assurance-how-complex-they-are>

¹⁰ <https://www.gov.uk/transformation/register-to-vote>. At the time of writing the service was also not available for Scotland, further invalidating the 99.9% statement.

Figure 3 – What could have happened

It is worth stressing that there are good policies and, in most cases ^[11], good digital services within these examples. The ability for a benefits claimant to easily search for a job; the ability for a person to use free software to collaborate with government; transferring cost savings produced by digital into lower bills; the ability to vote (and perform other government services) online: all these are good outcomes and to be welcomed.

Similarly, developing these services has helped us learn what “excellent” looks like in a government context and proved that government can develop excellent online digital services.

But – as our emphasis on what could have happened demonstrates - unless these policies are delivered alongside a digital inclusion strategy they will not sufficiently benefit those who lack basic digital skills, including some of the most excluded in our society.

Widening inequality: the dangers of digital

“Unless fundamental action is taken, the digital divide risks becoming an ever greater digital gulf as the distance increases between those who are online and those who remain firmly anchored in the offline world.” – Civil Society Organisation

Not only can digital services fail to engage many of the most excluded when they are considered outside of the social context; we must also go further and recognize that, by further benefitting those who are already digitally included, we risk widening inequality in the country.

As we have already noted, those without basic digital skills are likely to include those people who interact with government the most and those who are already excluded. Fully 80% of government interactions are with the poorest 25% of society – a statistic that must always be considered alongside the 21% of the population lacking online skills.

Voluntary sector organisations and some local authorities are making great strides in addressing the challenges. But we need to go much further. To ensure that we include this group we recommend changes to current policy in the following four areas.

- Prioritisation
- Skills
- Social Infrastructure
- Access

With the exception of one item, skills, we recommend that all funding come from existing digital spend. This is not a question of wishing funds into existence at a time of austerity. Rather, it is a rational reprioritization of effort to create a fairer society.

Prioritisation: applying expertise where it is most needed

The next government should prioritise its best digital expertise differently.

Many of the basic lessons of digital services have been learnt. We would expect that central government departments can now complete the task of digitizing the remaining ‘government transactions’ services themselves. They understand the benefits. They have been shown it is possible. They should

¹¹ Universal Jobmatch has faced many difficulties other than access, skills and misapplied benefits sanctions

have the skills and, where they lack them, there are now support structures in place for their departments to develop them.

Similarly, Cabinet Office and GDS should remain in place to continue to develop best-practice standards, apply governance and to provide support as required. The UK is already a world leader in the digital transformation of central government, and their expertise continues to be invaluable. Our second recommendation acknowledges and seeks to formalize these successes and this progress across every central government department.

Recommendation 2

Priority: High

Individual central government departments should complete the digital transformation of the identified transactions by 2020 to best-practice standards under governance of the Government Digital Service (GDS) group.

The goal of adopting digital services within departments should be embedded within department digital strategies, departmental plans and present within the objectives for permanent secretaries. All transformation should be subject to a cost-benefit analysis and plans should include the delivery of accompanying assisted digital support.

Building on our existing strength and expertise, we now need our best experts to tackle the more complex and knotty services which are used more frequently and by more of our citizens.

This demands that we think as rigorously as possible about the societal value of a service, not simply the cost to government and how it can be reduced. We must fully consider the value to people, communities and businesses of improving a service and the benefits it creates for democracy and society.

Within the UK organisations such as BT ^[12] and think tanks like the Big Innovation Centre ^[13] have been working with academic institutions to propose methods for this problem. Government must work with such ideas to provide a stronger methodology and evidence base both to determine when and where digital expertise should be prioritized and then to measure the success of such programmes.

This methodology and evidence base should be openly published to increase transparency and accountability. It should be open to debate and scrutiny. When researching some government services it may even be appropriate to fund a small Discovery phase to explore the service in more detail.

In particular, we propose a consistent and scientific approach to putting the societal value of services at the heart of policy, across three areas:

- The potential benefits of digital public services for citizens: how it will improve people's lives

¹² <http://www.btplc.com/Betterfuture/ConnectedSociety/Valueofdigitalinclusion/Digital-Inclusion-SROI.pdf>

¹³ <http://www.biginnovationcentre.com/Events/66/Measuring-the-value-of-social-innovation>

- The potential benefits for government: how it will reduce costs by increasing reuse, by removing expensive technologies or by improving frontline service
- The costs and benefits of performing a wider digital transformation of an entire service area, rather than simply moving an existing service onto the Internet.

The services to be explored would include those that support frontline workers as well as online services directly used by citizens.

In parallel with this scientific approach, we need to recognize the place that our democracy itself plays in prioritization. We have democratically elected leaders constantly identifying and debating major issues and proposing policies. Yet our best digital expertise is often not focused on these major issues [¹⁴], and is instead asked to digitize existing processes and services.

Whether the issue is housing, immigration, social care, integration of health and social care, or merging of benefits payments (i.e. Universal Credit), these policy priorities all need top digital expertise in place.

This type of prioritization requires more than simple decision-making. It also demands a more collaborative approach to government. It needs an approach where ministers, departments and local authorities work together, each giving up some control in the process.

When adopting digital public services, the public sector should not be focused on defending the territory of, or claiming success for, their own department or organisation. Instead we should work together and celebrate success together, praising everyone who contributed to that success.

It may sound self-evident, but it bears repeating that we are working for the benefit of the nation's people and communities. This requires us to cooperate and to focus our best people on key policy areas decided by our democratically elected politicians; to take a longer and larger view of what technology can offer, and how its involvement must deliver much more than simply streamlining what already exists.

Recommendation 3

Priority: High

Government should **focus the best digital experts on services with the highest value to society.**

They should be focused on more impactful problems aligned with both policy priorities and the benefit to society. This will require the production of a stronger evidence base and methodology for determining the benefits of digital transformation. This will also require more collaborative working across the public sector, a more joined-up government.

¹⁴ The most famous example of this in recent years is the Department of Work and Pension's (DWP) Universal Credit programme where millions of pounds have been wasted as a result of bad decisions, flawed methodologies and inter-departmental disagreements in Whitehall.

Skills: the promise of digital inclusion

Simply stating the advantages of the Internet or providing a single lesson does not address digital inclusion. It requires explanation of the benefits of the Internet, time from educators; it requires physical space and hardware to perform training on; it requires continued support, sustained investment and strategic thinking.

The Tinder Foundation and Go-ON UK jointly commissioned a report “A Leading Digital Nation By 2020” [15] which built on a 2013 report showing that 21% of the adult population lack basic digital skills and stated that on current trends this figure will drop to 11% by 2020. The report determined that incremental funding is needed to take this figure lower. Countries such as Norway have already reduced this figure to as low as 2%.

The current UK government has claimed that 10% of the UK adult population, 5.1 million people by 2020, may never be able to gain basic digital skills. We have a higher belief than the current government in the potential of the UK population to gain basic digital skills.

It may be impossible to reach 100%, but we should target as close to that figure as we can. We should aim to be as digital a nation as we can be, for there will be benefits at every level: to the government; to citizens; to the nation and economy as a whole.

In order to achieve this transformation and move beyond the writing-off of a tenth of our population, government must build a detailed understanding of:

- People’s digital skills and level of access [16] broken down by demographic segments, building on work in this area by the ONS [17]
- What activities are underway to improve digital skills or to provide access for those who need Assisted Digital services
- Which public services, both centrally and locally [18], are used by people at which level of the digital inclusion scale
- The current rating of each digital public service that already exists on the digital inclusion scale and the level of Assisted Digital support that exists
- How all of the above break down by regions, local authorities, socio-economic status, gender, etc.

This research will not identify individuals. It is intended to understand what the private sector would term “customer segments”: practical estimates that will be used to inform and guide decision-making, rather than simply creating another large unused database of information.

“It will take all sectors working together in partnership to tackle what is a very complex and multi-layered challenge. Technology is only one part of the solution: motivation, education, reinforcement and role modelling are all required to tackle digital inclusion.”
- Large Company

¹⁵ http://www.tinderfoundation.org/sites/default/files/research-publications/a_leading_digital_nation_by_2020_0.pdf. It is important to note that the this report starts from a baseline of 21% excluded whilst the current estimate is 19%. This means that the cost estimates are likely to err on the conservative side.

¹⁶ For the sake of simplicity we have used the term people here, many of these people also run SMEs and their businesses are being adversely impacted by the move to digital without accompanying support for skills. See the LITRG submission here:

<https://www.dropbox.com/s/mso2813eembh5px/140704%20LITRG%20response%20-%20A%20Call%20for%20evidence%20-%20the%20Digital%20Government%20Review%20%282%29.pdf>

¹⁷ The current ONS analysis is available here: <http://www.ons.gov.uk/ons/rel/rdit2/internet-access---households-and-individuals/2014/index.html>. It should be noted this research tracks offline/online rather than segmenting by level of skill. Research that encompasses both access and skills will be required.

¹⁸ Authoritative lists of public services, for example the ESD list <http://standards.esd.org.uk/?uri=list%2Faz> will assist with this

Importantly, much of this research is occurring already. For example, local authorities forming part of the Universal Credit Pathfinder Scheme performed detailed research into benefits claimants in their areas. Organisations such as Go ON UK, the Tinder Foundation, the BBC or the Oxford Internet Institute have also performed detailed research on these issues. The various organisations delivering basic skills training (for example UK Online Centres) will also be gathering evidence in the course of their work.

Gradually bringing this data together in a common format and opening it up for use outside of government, particularly the segmentation, will be a key enabler for all suppliers of digital services – while also creating a more informed public debate. It will help us understand which activities work, and which don't.

It will require a programme of work to bring together the current research into a consistent and comparable format. The research should be regularly updated to guide and support the activities of the multiple organisations looking to tackle the challenge of digital inclusion. It will help provide everybody with the opportunity to enjoy digital technologies' benefits.

We do not yet have this research, of course, but we can still work from initial estimates of the cost of inclusion. The Tinder Foundation report, for example, builds from practical experience of the costs of inclusion to determine that incremental government funding of £292m will be required over the period 2015-2020.

The report recommends that this figure be matched by the private and voluntary sector to make a total figure of £875m over this period. It also states that funding of this level will allow the country to get as close as possible to 100% inclusion with basic digital skills.

We embrace the task set out in these figures. Our recommended approach to funding government's share of delivering digital skills to citizens, the estimated £292m over the next parliament, is to use the future savings created by digital service delivery to support currently excluded citizens

"Focussing on the neediest in society, the ones required to fill out most forms most often is not merely caring and compassionate; it will also deliver by far the biggest per head savings" – Small Company

This is a simple model where gradual funding can create significant benefits for all. When government sets out the mission ("to be the most digital nation we can be") and funds its share, then we would also expect more input from the private sector and more time to be provided by volunteers. This will provide the full sum.

If we increase the percentage of digitally included by 10% we further estimate that the implementation costs will be recovered by year four of an incoming government.

Figure 4 shows that the net present value (NPV) of benefits is positive from year four, with continued savings of £189 million per year after year four. This estimate uses the government's own figures for the benefits of their Digital by Default strategy scaled up for the higher level of participation in digital services. More details for these calculations can be found in Appendix B.

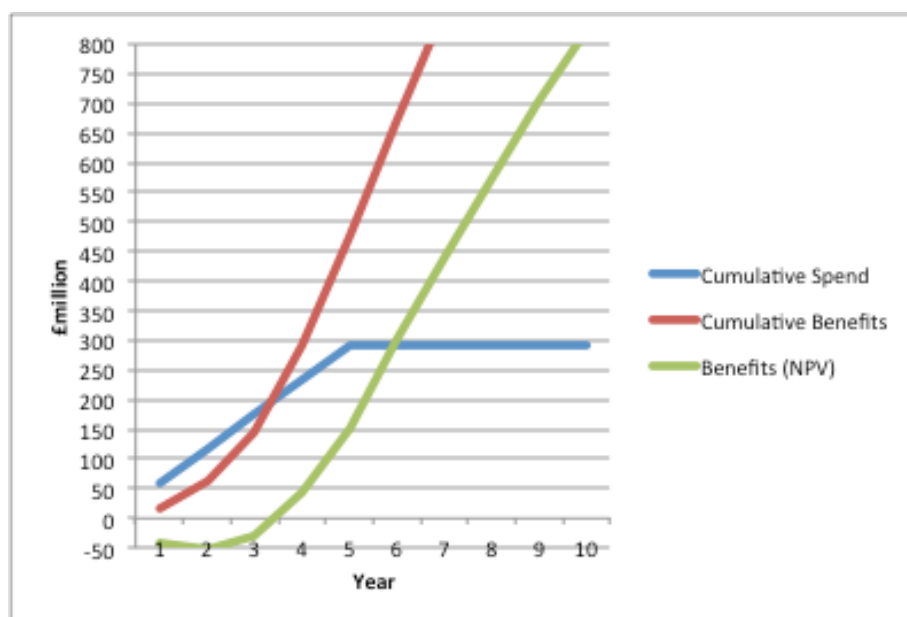


Figure 4 : Cumulative spend, benefits to central government and net present value for digital inclusion activities

While this calculation can alone justify government expenditure, it is important to note that it actually significantly underestimates the full economic benefits of increasing digital inclusion. This is because it only considers the reduced cost of delivering central government services, ignoring all other additional potential savings and advantages.

For example, a 2013 report by Goss Interactive ^[19] on the opportunities for Channel Shift across local government and the NHS estimated potential savings to government of £3 billion a year. Increasing inclusion by 10% would, on this basis alone, save £300 million a year.

We could go further still and try to calculate the benefits to people, their employers, small businesses and the economy through access to non-government digital services; of greater participation in democracy as it increasingly uses digital approaches; cheaper online products and services; improved job prospects and a more highly skilled and competitive digital nation. See Appendix B for more details on these items.

Such figures are by their nature speculative – but what is clear that, over time, funding digital inclusion is an investment whose yield will greatly outstrip its costs. It will reduce outlay on benefits and increase tax revenues for government. It will improve businesses and the economy. It will improve society and people’s lives. It is the right thing to do.

Digital inclusion is not a one-off activity. It is not addressed by, say, giving a single lesson when someone applies for a passport or a pension payment. Unless people regularly use skills they will lose them. Our aim, then, must be to generate repeated activities and reasons to use digital that will embed skills in those currently excluded individuals: by building an evidence-led programme that co-ordinates stakeholders across the sector, and that energizes

“We need to launch a national campaign to promote the benefits of the Internet, including social connectivity and access to government services, cheaper products and services, cheaper forms of communication and job opportunities” – Trade Union

¹⁹ The 2013 report Public Sector Channel Shift strategies is available at <http://www.gossinteractive.com/public-sector-channel-shift-strategies>. As this report was going to press the latest report was about to be published at www.gossinteractive.com/channel-shift-2015. We expect that this new report will have increased figures.

volunteers; by placing money “hyperlocally” with evidence-led sensitivity to the specific needs of particular areas; by using mass campaigns created by the likes of the Tinder Foundation or Go ON UK; and by repeatedly demonstrating the opportunities and benefits created by excellent digital services from any source or sector.

To be clear, central government should not be mandating one particular method for increasing digital inclusion. Rather, government should be investing and supporting. It should be facilitating conversations and encouraging collaboration between the practitioners who have been establishing best practice for many years. And it should be maintaining the evidence base to ensure that advances in inclusion are indeed taking place: i.e. it should scrupulously measure outcomes.

This approach will be uncomfortable to many in central government. But it is only through approaches like this, not old-style top-down command and control, that government will develop a digital approach adequate to society’s most complex problems.

We can create significant benefits for people and society by tackling digital inclusion. It is achievable and it will yield results. This is a sensible choice.

Recommendation 4

Priority: High

Government should lift its ambitions for inclusion and build a programme to **provide digital skills to an additional 4.9million people during the next parliament. This will improve people’s lives and create over £189million in annual savings**, on top of larger benefits across government and society as a whole.

“Local organisations like public library services, colleges, and adult education providers could be funded to lead, coordinate and support such networks, and perhaps take on the role of more targeted activity for the more elusive hard to reach groups and individuals” – Local Authority

Social Infrastructure: making the best use of existing assets

There are already many established UK Online Centres, some of which share use of existing social infrastructure, such as town halls, libraries, schools, job centres, hospitals. We would encourage far greater and richer use of this existing social infrastructure in leading a local approach to digital inclusion.

These are precious, pre-existing public sector assets which are in some cases under-utilised at differing times of the day or which perhaps are only providing services to one section of the community.

Rather than seeing these assets continue to be under-used, or even worse sold for a one-off fee to make ends meet during a funding crisis, we would encourage their use to assist with digital inclusion and to provide digital access to citizens.

Both the networks and the bricks and mortar of existing social infrastructure offer places where assisted digital services can be provided, with people helping each other to get online. They can provide places where parents work while their children enjoy after-school activities. They can provide places where the public sector bring together people, communities, the private sector and the voluntary sector to co-produce services addressing local problems.

This will require a new focus by the public sector to ensure that these places are fit for use: that they have free Wi-Fi, up-to-date-computers, appropriate

Internet access and trained staff. The public sector can also assist with these uses by helping people to bring together best-practice guides on safety and security for such uses.

By bringing public sector workers and citizens into these spaces we can offer a humane, active and vibrant experience of technology: of a human face, rather than of government as just another online form.

Recommendation 5

Priority: medium

Extend the use of social infrastructure, such as libraries and town halls, so it is increasingly fit for use in digital inclusion, assisted digital and other community engagement activities.

Case Study: Liverpool's campaign for digital inclusion

The voluntary sector have been running a number of initiatives to help people get online, particularly through the organisations Race Online, Go-on UK and the Tinder Foundation.

In October 2011 Liverpool launched a drive to tackle digital exclusion. The city recognised that it had a problem with a particularly high rate of digital exclusion with only 40% broadband coverage and 29% of the population unable to use the Internet (compared with 70% and 21% nationally). In a year, the campaign helped 58,000 people to get online and reduced the number of people unable to use the Internet to 17% of the population, below the national average. The success of the campaign has led to its core design principles being replicated in other regions by Go-On UK. Key features of the Liverpool programme were:

- Senior level sponsorship and commitment across the local authority
- A highly visible campaign, with participation from Martha Lane Fox and Race Online, launch events, poster campaigns and BBC tie-ins.
- Development of a strong network of "Digital Champions" – 150,000 people signed up, including 1 in 10 of those joining through the BBC's national "Give an Hour" campaign
- Partnership with many organisations, including private sector and third sector including many UK Online Centres
- Support with dedicated staff from the local authority
- Working with social housing landlords to improve broadband access
- Recognising the need to support SMEs and the local economy to adapt to digital ways of working

Access: broadband and connectivity

Any commentary on digital inclusion cannot neglect the issue of broadband access across the country. Fully addressing this issue is not within the scope of our report but it is something that we have been acutely aware of throughout.

During the review, multiple submissions and comments were made stating the need for changes to the broadband market, the need for rural broadband, the potential of white space technologies, the need for free Wi-Fi in all municipal

areas [²⁰], the need for telecommunications operators to offer cheaper deals to excluded citizens, the benefits of local authorities negotiating group deals for digital access for citizens in need, or the need for an updated Universal Service Obligation.

These are complex matters and could form a policy review in their own right. Without wishing to prejudice other policy groups working on this area, the Digital Government Review team would recommend that at a minimum the next government should ask Ofcom to produce a report on a Universal Service Obligation (USO) for Internet access within 90 days of taking office.

Recommendation 6

Priority: high

Government should **direct Ofcom to produce a report on a Universal Service Obligation (USO) for Internet access** to be delivered within 90 days of taking office.

This report should consider how a USO could support both fixed and mobile services and whether a USO would usefully describe different obligations for differing sections of the market.

Common needs: what should people expect from a digital government?

Finally, if we are to include everyone in digital then we need to understand their needs and meet their expectations. This is not about a digital “bill of rights” but it is about more than just expecting people to be able to gain access to the Internet. We need a common baseline statement of expectations of the digital services people should reasonably be able to expect from their government in the year 2015.

These expectations will naturally change over time. A public sector that continually and gradually adapts to meet changing public expectations is a public sector more attuned to the modern world.

Such a baseline statement of expectations could be used by all public sector organisations to plan their digital activities, and by people to hold those organisations to account if or when they fail to meet those expectations.

Our suggested starting point for these expectations are:

- Access to basic digital skills training at a nearby location
- Free access to the Internet on fit-for-purpose equipment at a nearby location
- All common public sector transactions should be available through both digital and non-digital routes for every citizen
- The ability to communicate with public sector organisations through both digital and non-digital routes
- All digital public services should meet a common standard and (given the growth in households with only mobile or tablet devices) be fit for use on both fixed and mobile devices.

²⁰Some studies show that free municipal Wi-Fi does not work http://ec.europa.eu/competition/publications/cpn/2007_3_116.pdf Others show that it can <http://www.publicaccesswifi.org>. As with other items we suspect the answer varies with local needs.

When discussing this suggested starting point we had two significant debates.

First, whether and when any non-digital services routes be removed, or how significant a penalty was appropriate where citizens chose to use a non-digital route even though they had the capability to use digital services. Such an approach would be called “mandatory digital”.

Second, the expectations of parents and children: especially given the growing digital literacy amongst children.

Mandatory Digital: the policy debate

The question of whether use of digital for any services should be compulsory represents a considerable tension within the principle of inclusion. On the one hand, the Cabinet Office Minister, Francis Maude MP, has given interviews about implementing a mandatory digital policy as an extension to “digital-by-default” [21]. On the other hand, HMRC have already had to relax rules for mandatory online VAT filing by small businesses following a court ruling [22] which determined that small businesses could not be compelled to file their VAT online if it was judged “not reasonably practicable for them to file electronically.”

In addressing this tension, we would encourage proportionality and a caring system that accommodates people and does not force technology upon them. In some cases, however, we feel that it is important to encourage people to use digital services where they have the capability.

Outside of the public sector, a small financial penalty has sometimes been found to offer such encouragement [23]. Private sector businesses, however, are not in a position where they are providing services to everyone in society – which is precisely the mandate of the public sector. As was stated at the beginning of this chapter, the biggest users of government services are already amongst the most excluded in society. Penalising some people will simply put those people more in need of the state.

This is a major public policy area for ministers and politicians. It is akin to the decisions on which lifestyle choice the NHS supports or the uniform tariff elements of the Royal Mail [24]. It is a debate that needs to take place, and one likely to boast no one-size-fits-all solutions.

There are historic parallels here, such as policy debates over differential pricing for pre-payment energy meters. Similarly, when it comes to the business of bringing digital services to every citizen as universally and inclusively as possible, the effort required may be as significant as that required during the switchover from analogue to digital terrestrial television services. The analogue-digital switchover was successful but was a significant exercise that spanned multiple Parliamentary terms.

To take one international example, Denmark’s planned move to digital will be the culmination a five-year programme of work including digital transformation, digital access and digital inclusion activities. The strategy had

²¹ “Go on the Internet - or lose access to government services, Francis Maude tells pensioners”
<http://www.telegraph.co.uk/technology/Internet/10889563/Go-on-the-Internet-or-lose-access-to-government-services-Francis-Maude-tells-pensioners.html>

²² <http://www.litrg.org.uk/News/2014/140502-PR-hmrc-relaxes-mandatory-filing-vat-returns-online>

²³ For example a charge for printed bank statements or for producing concert tickets

²⁴ <http://www.royalmailgroup.com/about-us/regulation/how-were-regulated/universal-service-obligation>

been developed, agreed and is being delivered by all layers of government [²⁵]. Such a piece of policy development is beyond the capabilities of this independent review, but offers an important case study for future investigations.

We would strongly encourage wider, deeper and more inclusive political debate if such a digital switchover was to be explored for the UK.

Parents, children and the next digital generation

An ever-increasing proportion of children use digital services on a regular basis. Their expectations may differ from older generations because of this exposure and their familiarity with digital services. For example, their earlier exposure to smartphones, mobile apps and associated security models might affect how they choose to opt in/out of certain services.

As the digital transformation of government services increases parents and children will have to address the issues raised by transfer of responsibility. At what age should a child be allowed to access their own records online? When should a parent be refused access to a child's records?

The NHS has been at the forefront of exploring some of these issues through the Caldicott Reviews. The last review, Information Governance in the Health and Care system [²⁶], reported in April 2013 and touched on a number of areas relevant to this review.

There are some areas which the Information Governance report did not cover or did not specify in detail. For example, will the Government's Identity Assurance scheme extend to children to enable them to log on to online educational services? Or when will a parent lose access to their children's online medical records? Who is looking at these issues beyond the NHS?

As Government defines the baseline set of digital capabilities that all citizens can expect from the public sector, it must consider the evolving nature of this debate and the potential need to commission further research into such topics.

Recommendation 7

Priority: high

Government should define a baseline set of digital capabilities that all citizens should expect from the public sector and work across the public sector to implement this baseline by 2020.

When defining this baseline government should consider a full digital switchover strategy, parents, children and the expectations of the next digital generation.

²⁵ <http://www.digst.dk/ServiceMenu/English/News/Campaigning-for-mandatory-digital-communication>

²⁶ <https://www.gov.uk/government/publications/the-information-governance-review>

Restoring Confidence in Open, Shared and Personal Data

Introduction: governments and data

It is obvious that government needs to be able to use data both to deliver services and to present information to public view. How else would government know which bank account to place a pension payment into, or a citizen know the results of an election or how to contact their elected representatives?

As more and more data is created, preserved and shared in ever-increasing volumes a number of urgent questions are begged: over opportunities and hazards; over the importance of using best-practice techniques, insights and technologies developed in the private sector, academia and elsewhere; over the promises and limitations of openness; and how all this might be articulated and made accessible to the public.

Government has already adopted “open data” (we will discuss this more in the next section) and there are now increasing calls for government to pay more attention to data analytics and so-called “big data” – although the first faltering steps to unlock benefits, here, have often ended in the discovery that using large-scale data is a far more nuanced business than was initially assumed

Debates around government and data have often been extremely high-profile – the NHS care.data [²⁷] debate was raging while this review was in progress – but they are also shrouded in terms that can generate confusion and complexities that are not easily summarized.

In this chapter we will unpick some of these terms and some parts of the debate. This is a detailed and complex area and there is much more that could have been included [²⁸]. This is not an area that can easily be summarized into a simple bullet-pointed list of policies.

²⁷See <http://www.nhs.uk/NHSEngland/thenhs/records/healthrecords/Pages/care-data.aspx>, <https://medconfidential.org> and <https://www.faxyourgp.com>

²⁸For example issues with government data quality and information architecture standards that would need to be addressed in any delivery programs; or the complex relationship between digital skills, public understanding of data and the nature of informed consent

Within this report we will use the following terms and definitions, proceeding to a detailed analysis of each in turn:

Type of Data	Definition ^[29]	Examples
1. Open Data	Data that can be freely used, reused and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike	Insolvency notices in the London Gazette Government spending information Public transport information Official National Statistics
2. Shared Data	Restricted data provided to restricted organisations or individuals for restricted purposes	National Pupil Database NHS care.data Integrated health and social care Individual census returns
3. Personal Data	Data that relate to a living individual who can be identified from that data. For full legal definition see [30]	Health records Individual tax records Insolvency notices in the London gazette National Pupil Database

NB These definitions overlap. Personal data can exist in both open and shared data.

1. Open Data

“Data that can be freely used, reused and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike.”

Open data has been a relative success in the UK. Indeed the country is widely recognized as a world-leader in this field, thanks to initiatives such as data.gov.uk and organisations such as the Open Data Institute ^[31]. Institutions such as Nesta and the Open Data Institute are building on this success and running a series of challenges to help build sustainable solutions to address major challenges for society such as the cost of renting, crime and education ^[32].

We would recommend continued support for and growth of open data initiatives, and a continued presumption of openness. But we also believe that a change in emphasis and approach is needed to make open data work by setting it within an appropriate social context.

Sunil Abraham of the Centre for Internet and Society said in November 2014 ^[33]:

‘The open government data movement in some parts of the world is dominated by ahistorical and apolitical technologists, and some of them seem intent on reinventing the wheel... open data activists do not sufficiently challenge power

²⁹ <http://theodi.org/blog/data-sharing-is-not-open-data>

³⁰ http://ico.org.uk/for_organisations/data_protection/the_guide/key_definitions#personal-data

³¹ <https://index.okfn.org/country/>

³² <http://theodi.org/challenge-series>

³³ <http://www.openup2014.org/privacy-vs-transparency-attempt-resolving-dichotomy/>

hierarchies. When an open data activist publishes an answer, a dataset nicely scrubbed and machine-readable, a visualization, or a tool they are often frustrated because nobody seems interested in using it. Often even the activist is unclear what the question is... They seem to be obsessed only with tools and technologies, rather than power asymmetries and injustices'

Many of the constituent parts of the UK open data movement will recognise these problems and are working to address them. We hope that the measures outlined in this section will support their efforts.

In the following section we consider areas where additional effort on government open data can improve democracy; can increase transparency and accountability; can empower people; and can get people more engaged in their public services. In effect, we see the right uses of open data creating not just economic productivity but also social productivity [³⁴].

This social productivity will help build future economic productivity; in the meantime it will improve people's lives and it will enhance our democracy. From our analysis it was clear that there was room for improvement.

Open Performance Data: creating a meaningful context

Consider the current approach to releasing information about what the government spends money on.

Both government departments and local authorities already release their spending data. Yet this does not take place in a format that can be linked either across departments or easily linked to public services or outcomes. Spending data is thus not seen in the context of what the spend produces.

This risks creating ineffective and unproductive public debate. It moves us towards a state that simply spends less, not a more effective one nor one that is more aligned with people's needs.

For an example from our own research, more of which can be seen in Appendix C, we used the FOI process to gather IT asset data from a number of local authorities. Linking this to spend data on suppliers was extremely challenging but this linkage could provide valuable insight on value for money and into the varying costs across different authorities.

The review determined that open performance data need to be placed in parallel with open spending data, allowing spend data to be seen in the context of the performance produced.

This should apply to performance data for all public services regardless of who is providing it, i.e. whether the service is directly delivered by the public sector, delivered in conjunction with partners, or delivered by an outsourced partner.

Imagine the debate in Spring 2014 over the performance of the UK Borders Authority (UKBA) passport service [³⁵] if citizens could have actually seen a day-by-day or near real-time view of performance data – for example the average processing time for a passport. Instead, a key part of the political debate revolved around whether a photo of a pile of passport applications was a real

"Analysts and policy makers must understand the limitations associated with the use of massive largely unstructured data sources and ensure that they derive evidence based policies from them in a way that is both scientifically and statistically correct, fair and ethical to contributors and non-contributors to those databases alike" – Professional body

³⁴ <http://www.thersa.org/action-research-centre/current-projects/open-public-services-network/empowering-parents,-improving-accountability>

³⁵ <http://www.bbc.co.uk/news/uk-politics-27813438>

backlog or not [³⁶]. It was farcical to have this discussion without public performance data.

A wholly new urgency, sense of responsibility and measure of accountability would have been in place. Similar effects can be imagined in other sectors: the attendance levels in schools, performance in hospitals, performance of major delivery projects, performance of local authority services and so on.

We can be reasonably certain that UKBA does know how many passports it is issuing in near real time as their unique serial numbers go live. When a service is in trouble and the subject of political debate it becomes profoundly undemocratic that only the government knows this information, not the people who are suffering and want to hold the government to account. Knowledge, as they say, is power.

Performance data is the type of information that ought, of course, to be made available to people working within those public sector organisations – for example, it will provide better information and tools for policy makers, organizational leaders and people managing outsourced contracts.

But we must not stop there. By releasing data to the public as well we can help create a newly informed public debate and support more informed decision-making by citizens on a day-to-day basis.

For example, if a citizen can see that the queue for a passport is 8 weeks or the average time to register to vote in a particular local authority is 6 weeks, they will be in a more informed position when prioritizing when to fill out a passport and voter registration form.

We will need to be careful not to fall into the same trap as spend data. Releasing data without appropriate context can be counter-productive, so an approach that works with citizens to understand changing needs and determine which data is valuable should be established and followed.

This should not be seen as letting government “off the hook” for providing a poor level of service. The open nature of the information will generate an informed debate around the cause and accountability for any poor performance but, in the meantime, people will be in a more informed position.

Both the Government Digital Service and some local authorities have made some progress in the direction of releasing performance data [³⁷] [³⁸], which is to be applauded, but the information that is currently available lacks context; can be difficult to understand for the average citizen; and often only contains information on the elements of the service that have been digitized or moved to the Internet.

What is needed as well as the underlying data is a measure of the performance of the full end-to-end service.

Few citizens are interested in how many people are currently on a given webpage. This information is useful for the people delivering the service (and it is fascinating to some of the more technically minded of us outside of the public service) but it is the performance of the end-to-end service that truly matters to people. How long will it take from filling out my application form

³⁶ <http://www.itv.com/news/2014-06-11/passport-office-in-blind-panic-leaked-photos-reveal-scale-of-backlog/>

³⁷ <https://www.gov.uk/performance>

³⁸ <http://stevehallidaycio.wordpress.com/2014/04/24/gov-uk-local-digital-dashboard-prototype-is-live/>

before I can vote? How long is it taking to deliver passports? How much are different schools improving the long-term performance of children?

Performance data should be open data. Releasing spend data without context can be damaging and dangerous, it is difficult to prevent a descent into unhealthy and ill-informed debate when only part of the picture is available. Releasing meaningful performance data will improve the debate and improve our democracy.

Recommendation 8

Priority: high

Improve accountability by releasing public sector performance data as open data

Performance data is what is meaningful to people and communities outside government. It can help them make choices and decisions. Meaningful performance data can be determined by iteration or by ongoing consultation and collaboration. Spend data should be released alongside performance data to improve debate and accountability. The combination of the two should be tied to strong accountability mechanisms to enable people to hold their elected representatives to account

Asking what people need: pockets of success

The Government has created an Open Data User Group (ODUG) [³⁹] to provide a voice for the users of open data during open data release processes. ODUG works with the open data community and provides consolidated views before government makes decisions on open data priorities. Individuals and organisations can also make their own submissions.

The Office of Public Sector Information (OPSI) [⁴⁰] has been created within the National Archives to set public sector information policy standards. Requests can also be made through this route.

There are few equivalents in local government or other public sector bodies. The Local Government Association runs incentive schemes [⁴¹] to encourage open data releases but otherwise people have to navigate the process of a particular organisation to find how and to whom they can state their needs.

None of these routes provide any guarantees of on-going, long term or consistent access to data.

We therefore end up with pockets of success, typically where there is both an active open data community and the public sector organisation has an individual who has engaged with the benefits of open data, but where most of the public sector is still failing to fully engage with open data other than when top-down directives (such as the release of spending data, or our own suggestion of performance data) occurs.

³⁹ <https://www.gov.uk/government/groups/open-data-user-group>

⁴⁰ <http://www.opsi.gov.uk/psi/>

⁴¹ <http://incentive.opendata.esd.org.uk>

In essence, open data is currently seen as an adjunct to the core function of government rather than one that is driven by people's needs.

This leads to incorrect datasets being released, datasets being released in inappropriate formats or with poor data quality, or datasets being sporadically released leading to organisations being unable (or unwilling) to build sustainable solutions on top of the open data.

This approach frustrates the open data community rather than helping to build a community that wants to work with the public sector to improve both public services and wider society.

Open address data: an opportunity missed

A good example to help us explore this problem in more detail is address data [⁴²].

At the simplest level, address data can be seen as a list of house numbers, street names, towns and postcodes.

Address data is used in many processes across the UK: posting out and analyzing census returns; ordering a parcel from an online store; despatching an ambulance.

Addresses are created in the UK through a process involving local authorities, the Royal Mail and Ordnance Survey. Royal Mail and Ordnance Survey use the data to create different addressing products that are then sold. Some products are sold back to the public sector. The cost and complexity of licensing these products means that organisations often cannot use them, or use a version that is out of date, leading to difficulties for people in new homes [⁴³].

Much of the effort spent in building or choosing from these different datasets is wasteful and unproductive. More importantly the lack of a single, authoritative set of address data also has an impact on people, thanks largely to the ever-increasing number of automated systems reliant upon address data.

Increased automation is leading to more and more decisions being taken on the basis of these address datasets. The effect of differing datasets could be as simple as a lost parcel or an inability to get home insurance; it could be as complicated as a mistaken statistical analysis of census data; but it could also lead to a misdirected emergency service call, a lost ambulance and a lost life.

This process started with local authorities, Ordnance Survey and the Royal Mail. Until the privatisation of the Royal Mail all of these organisations were public bodies while Address Data, like other geospatial data produced by the public sector, falls within the definition of data that would typically be open.

In other words, we are looking at a spectacular missed opportunity. Government has had both the opportunity and mandate to establish an authoritative open address dataset that would form part of our National Information Infrastructure; a dataset that could link to the open Land Registry data and start to resolve the whole area of geospatial data. Yet it has failed to do so.

⁴²Address data is a subset of a larger geospatial dataset, for the sake of brevity we will focus on this part of geospatial data

⁴³<http://www.bbc.co.uk/news/business-24960746>

This is not for want of advocacy. Many people were requesting this dataset recognizing that it would be appropriate for central government to take action to bring together these organisations and unpick the complex process and licensing models. Other countries, especially Denmark [⁴⁴] have led the way in pushing such processes through with demonstrable benefits [⁴⁵].

The time of the Royal Mail privatisation would have been the perfect moment for such an approach but, unfortunately, the opportunity was missed. No action was taken and both the Royal Mail components of the production process and the associated rights to the dataset were sold off. BIS commissioned a report on this topic that was published in January 2014 [⁴⁶] but, again, no action was taken [⁴⁷].

The consequences of this inactivity will only become more severe as technology automation increases in the future.

Government is now funding a community-led approach to investigate the feasibility of building a new open address dataset [⁴⁸]. This approach may be successful, but if it fails then the next government should intervene.

The next census is in 2021. A census requires an authoritative address list so that census collections activities can be targeted where required. This provides a strong and realistic deadline for building a truly open address list.

Recommendation 9

Priority: high

As part of a general move to open up geospatial data the UK should have an open, authoritative and definitive address dataset by 2021. This will increase economic growth, reduce wasted effort and improve access to public and private services by all citizens

Open Data Roadmaps: listening to people's needs

In order to succeed in our aim of making data serve democracy, we must alter much of the existing thinking we have described in this section. Instead of seeing data as a government asset over which it wields unilateral control, we must begin to consider it a duty of government to release open data for citizen benefit. It should be part of our civic contract [⁴⁹].

Government data was created for the people and it belongs to the people. People should be able to access and reuse this data to create new businesses and economic value, to do good in their community, or to hold their elected

⁴⁴ <http://www.theguardian.com/technology/2006/nov/30/epublic.society>

⁴⁵ <http://www.epsiplatform.eu/content/value-danish-address-data>

⁴⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274979/bis-14-513-open-national-address-gazetteer.pdf

⁴⁷ At the same time as this was happening, BIS was also working on the Building Information Modelling (BIM) standard (a standard which could form the next part of the chain from “land” to “addresses” to “the structures built on those addresses”).

⁴⁸ <http://theodi.org/blog/open-addresses-discovery-phase>

⁴⁹ As noted above there are pockets of success that do appear to operate in this fashion, for example Leeds Data Mill <http://www.leedsdatamill.org/about/>

representatives to account. People should have confidence in the quality, reliability and sustainability of the data being released [⁵⁰].

While necessary exceptions and restrictions will always exist, there should be a starting presumption that **public sector data belongs to the people**.

Recommendation 10

Priority: medium

Government should provide a clear, easy to use method for requesting open data and should certify all open datasets to an equivalent level by the end of the next parliament.

The public sector should process open data requests with the starting assumption that the data that the public sector holds is the people's data. We would suggest that government should certify all open datasets to at least Pilot Level of the Open Data Certifications, but this should be discussed with the open data community.

2. Shared Data

“Restricted data provided to restricted organisations or individuals for restricted purposes.”

We now come to shared data, or “data sharing” as the process underpinning it is sometimes called.

Shared data is not open for everyone to reuse. It is information provided to a restricted group of organisations or individuals for a restricted purpose. Typically these restrictions are because the data contains sensitive personal data regarding identifiable individuals.

It is important to understand that data sharing is used:

- Within and between public sector bodies, for example DWP share data with local authorities to validate electoral address registrations
- On an individual level between public sector bodies and other organisations delivering individual public services, for example a local authority might share data on a specific individual with a third sector organisation to enable social care services to be delivered
- On an individual level between public sector bodies and other organisations. For example to allow beneficial academic research into educational outcomes

The following examples illustrate something of the breadth of shared data's usage, and its potential benefits if successfully and securely achieved.

⁵⁰The Open Data Institute worked with the open data community to create Open Data Certificates, <https://certificates.theodi.org>, to support this approach. Unfortunately the data.gov.uk site continues to use an outdated model.

Use Case	Organisations	Potential Benefits
Educational research (National Pupil Database) ^[51]	Pupils, grant-maintained schools, DfE, universities, exam bodies	Improved educational outcomes for children
Integrated health and social care	Patients, NHS trusts, local authorities, DH, other organisations delivering health/social care services	Improved healthcare adults for all citizens
Troubled Families ^[52]	People, DCLG, Local Authorities, Police	Turning around the lives of the most troubled families
MyLicence ^[53]	Drivers, DVLA, insurance industry, comparison websites	Reduced insurance fraud, leading to reduced insurance costs

Figure 5 - Uses of shared data

From the above, we hope that it will be clear to most readers that data sharing is not something that should or could be completely stopped. In fact, our expectation is that data sharing initiatives will only increase as many data sharing use cases provide real value for people by providing both better and cheaper public services.

Yet there are both significant issues and concerns to be dealt with around data sharing.

To understand these we need to consider the areas of anonymity, security, public trust, legislation - and who benefits from data sharing.

Anonymity: no guarantees

It is important to recognize the risks when dealing with data, especially personal data. Most risks are exposed when individuals can be identified within the data. Hence much shared data will be anonymised with the aim that even those who collect and analyse an entire data set can identify no individual.

Organisations will frequently state that data is safe to be shared or released as it has been anonymised and that no individual can be identified. This is, unfortunately, an oversimplification. Despite the use of the best algorithms and the best obfuscation techniques it is not possible to guarantee that no one can be identified within anonymised data. As the UK Anonymisation Network (UKAN) state "As with any security measure anonymisation is not foolproof" ^[54].

There are a number of reasons for this: continuing advances in statistical techniques, continuing advances in computing technology, the continuing availability of additional datasets which create the ability to link data to aid identification. We would recommend that those wishing to understand the

"To unlock the potential of IOT We need a data-handling framework that categorizes different types of data and associated management strategies. Its aim should be to reassure consumers while at the same liberating data to drive innovation." – Large Company

⁵¹The National Pupil Database is limited by solely including grant-maintained schools. This means that free schools are not easily included in educational research studies.

⁵² <http://informationsharing.co.uk/tools/scoping/how-do-we-decide-the-legal-basis-for-sharing/scenarios-and-case-studies/sharing-information-to-identify-and-work-with-troubled-families/>

⁵³ <https://www.abi.org.uk/Insurance-and-savings/Topics-and-issues/Insurance-industry-access-to-driver-data>

⁵⁴ <http://ukanon.net/key-information/>

detail read the 2010 paper by Paul Ohm “Broken Promises of Privacy: Responding to the Surprising Failure of Anonymisation” [⁵⁵] or explore the excellent set of resources collated by UKAN.

Once we accept this fact, it is easy to become extremely alarmed about the information that has already been released and which might - we would stress *might* - be re-identified in the future. If people’s bloodtypes were exposed in a hypothetical future leak of NHS care.data then cases where children have a legal father who is unaware that he is not the biological father would be exposed. This would clearly cause significant upset.

Being scared is different to being informed, to understanding and communicating risk, and to making informed decisions about how data is used or not used.

But in understanding the risk we need to start by making the assumption that it is not possible to guarantee anonymity of personal data.

This is not the current starting assumption for many policy makers. There are some organisations that will hold to high anonymity standards but there are many that have failed and created a higher risk of disclosure of sensitive personal data by over-stating the power of an algorithm and under-estimating the risk of re-identification.

Public sector organisations should start with the assumption that it is not possible to guarantee anonymity of personal data.

Security: moving beyond fear

Any approach to data sharing must include an approach to security and risk management. If we move too far ahead based on assumed benefits but without understanding and communicating the risks then we are doing the public a disservice. We will make avoidable mistakes. We will increase fear. On the other hand a highly risk averse approach will lead to lost opportunity for better public services.

Many of the world’s largest and most private organisations suffer from security breaches: the NSA, Apple, Mastercard and Visa. So does the public sector.

2014 alone has seen a number of security breaches of UK public sector data: some of our health records were incorrectly (possibly illegally) transferred to the US; a prison lost a disc containing detailed information on prisoners; multiple local authorities disclosed complete electoral registers rather than the smaller, public version. These breaches are happening all the time.

We need to understand them, and we need to learn our lessons. But we also need to recognize that they happen and will go on happening. We should not stop because of fear: we need to balance the risks with the benefits. The government has a longstanding, but often forgotten, reference work on risk management produced by the National Audit Office in their frustration at the civil service’s inability to get this right – The ‘Orange Book on Risk Management’ [⁵⁶]. As Bruce Schneier puts it [⁵⁷], we need to move beyond fear and think sensibly about security.

⁵⁵ <http://uclalawreview.org/pdf/57-6-3.pdf>

⁵⁶

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220647/orange_book.pdf

“Data access for research should be subject to privacy safeguards” – Professional body

There are a number of strong models to build security and privacy into processes for data sharing (often captured under the terms ‘security by design’ and ‘privacy by design’).

We recommend approaches such as using an architecture where data is not moved to large central databases but instead is kept within smaller data stores with processing performed either as close to the data as possible or only with the specific data elements required [⁵⁸].

In the academic world, models with gatekeepers and data safe havens / research laboratories are being explored. These can both improve security and provide access to skilled resources. The effort that the security, academic and statistical communities are putting in is laudable. Much of this work has also been translated into government standards by Government Digital Service (GDS) [⁵⁹].

But we still have largely old solutions in place and we are still building new solutions without following new standards. For example:

- The example above of UK health records being taken to the US was part of the NHS care.data programme [⁶⁰]. This should have been a flagship programme for government data analytics and data sharing – not an example of making basic mistakes
- The MyLicence programme to share driver data with the insurance industry [⁶¹] provides no details of the audits that government will perform to ensure that the insurance companies do not misuse data. Where is the openness and transparency in this?

Given these failures we will need to improve our approach to security and privacy.

In particular, as government gradually opens up data to external services, such as MyLicence, and explores the possibilities created by opening up APIs to other parties, a strong governance model will be required to retain trust and confidence in both public sector and non-public sector services that use government data.

A lack of trust

Civil servants and politicians must recognize that there is a significant amount of distrust by people in government’s use of their data. Several recent polls demonstrate this.

⁵⁷ http://cyber.law.harvard.edu/cybersecurity/Beyond_Fear

⁵⁸ Two interesting example of this design model were provided to us during the review. One was a safer version of the a congestion charge system where a greater amount of processing was performed within the cameras to reduce the amount of personal data bought back to central databases; the second provided a safety alert service to sex workers in a given geographic area without the alert service ever being aware of which workers were in that area. Both of these designs reduce the transfer of personal data and hence create a more secure and trustworthy environment.

⁵⁹ <https://www.gov.uk/service-manual/technology/security-as-enabler.html>

⁶⁰ <http://www.pcworld.com/article/2108580/dont-upload-health-care-data-to-google-cloud-uk-groups-say.html>

⁶¹ <https://www.abi.org.uk/Insurance-and-savings/Topics-and-issues/Insurance-industry-access-to-driver-data>

Ipsos-Mori for the Jacobs Rowntree Reform Trust ^[62] found that:

- 42% of people are not confident that government will protect their data
- 63% of people disagree with the statement that “if a government department or public body holds some data about you, other government departments and public bodies should have access to that information”
- 67% of people believe that “government departments or public bodies should never be allowed to sell data they hold about you to private companies”

Meanwhile the Royal Statistical Society commissioned Ipsos-Mori ^[63] to investigate data sharing and found that 44% of people were against data sharing unless certain safeguards were specified and that only 13% of people had a high trust in the British Government’s use of their data.

This mistrust is also evidenced by the individual debates on many of the recent data sharing initiatives (for example NHS care.data, HMRC VAT, DVLA’s MyLicence scheme). It is noticeable that in these debates most, although not all, of the public concern concerns the sale of government-held data to private companies or of the risk caused by lack of anonymity or poor security.

“Greater transparency is required as open and shared government data initiatives may have a bigger impact on the rights of citizens than has been anticipated” – Large Company

This lack of trust is not limited to the public sector, and nor is it uniform across the public sector, but it is clearly significant and it is not reducing.

Some of the effects of this distrust will include reduced use of digital services and increased digital exclusion. It also contributes to a risk-averse approach to decision-making within the public sector, even for data sharing which does not go outside the public sector.

This distrust is sometimes well placed but in other cases it is slowing down valuable projects that can improve public services and people’s lives.

Asking the right question: who benefits from data sharing?

We can start to see that, despite there being benefits and reasons to proceed with some shared data initiatives, there is insufficient understanding of the risks; an ineffective approach to security and a significant lack of trust.

In the introduction to this section several examples of data sharing were listed along with their high-level benefits.

“Shifting a duty of scrutiny onto the public would have pernicious consequences for research, and could greatly limit the scope for data sharing in the public interest.” – Professional body

In each case there are benefits to people and society. But it is noticeable that some of the data sharing initiatives, for example MyLicence, may initially benefit companies before subsequently benefitting people. In the case of MyLicence this would be when - or rather if - cost savings result in reduced insurance costs or reduced fees to check a driver’s details when hiring a car.

Both the Ipsos-Mori polling and the public debates around initiatives such as NHS care.data amply demonstrate that this is of concern. People believe that the benefits of many of these initiatives will be felt by large organisations that will use the data to improve their own services and increase their profits. People believe that this will further empower organisations at the expense of themselves; that this data could be used to constrain options and to limit choice.

⁶² <http://www.jrrt.org.uk/sites/jrrt.org.uk/files/documents/IpsosJRRTPrivacypollMay2014full.pdf>

⁶³ http://www.statslife.org.uk/files/perceptions_of_data_privacy_charts_slides.pdf

Yet government has implemented this, and similar, data sharing approaches. In the case of MyLicence the insurance companies have been provided with access to drivers' data before a corresponding service has been put in place for drivers to easily view, and where appropriate correct, their own data.

There is minimal control for the individual. There is minimal information on MyLicence available through official sites [⁶⁴] and there appears to be neither ongoing and transparent audit nor an independent governance process with public representation to ensure that data is being used appropriately. Surely this is the wrong approach. How will this provide confidence or generate trust?

The Law Commission: a report on data sharing

Much of government's handling of data is controlled by the Data Protection Act 1998. It is notoriously complicated.

Igor Judge QC (Lord Judge) said, when writing a foreword to a guide to the DPA for the judiciary that: 'This legislation is virtually impenetrable' [⁶⁵]. Igor Judge went on to become Lord Chief Justice. If he finds data protection law hard to grasp, then no one else has a hope.

It is not widely understood that data sharing is also controlled by legislation outside the Data Protection Act (DPA), with most local authorities relying on powers granted under the Localism Act 2011 and central government requiring primary legislation to establish 'data sharing gateways'. Much, but by no means all of UK data sharing law flows from EU legislation, which itself is currently undergoing change. It is far from clear whether the UK exerts any meaningful influence on EU law and practice.

The Law Commission recently consulted on data sharing legislation [⁶⁶]. Some parties have argued this reliance on primary legislation creates much-needed transparency and debate. This section nicely summaries the legal complexities:

'Relationship between different data sharing provisions

'One of the complaints made about the law on data sharing is that it is often difficult to know what the law is, because of the number and range of sources of law. It is also difficult to know which law takes precedence on any particular issue. Statutory provisions interact with other legal requirements and the hierarchy is not always clear and is often difficult to understand.

'Some gateways expressly override certain other statutory provisions. Some expressly do not override certain other statutory provisions. Some provide for secondary legislation to prescribe any particular restrictions. Some gateways provide for certain common law duties or other obligations to be overridden, such as confidentiality. There may be provision in other legislation providing that data sharing does not breach certain specified legal restrictions.

'A statutory gateway may impliedly override other provisions. The introduction of statutory powers can supersede a common law power covering the same ground, so the common law may be eroded by the

⁶⁴ <https://www.gov.uk/search?q=mylicence>

⁶⁵ https://docs.google.com/document/d/1Ey0yolg866U1ruu5izxKsTKBnfO_fHspbuFfi2lfEg4/edit?pli=1

⁶⁶ http://lawcommission.justice.gov.uk/docs/lc351_data-sharing.pdf

development of statutory gateways. Whether a particular statutory provision supersedes the common law is a matter of statutory construction, with the result that uncertainty can overshadow the use of common powers in areas where Parliament has also passed statutory gateways to share data.’

The Law Commission noted that no authoritative list of data sharing gateways exists and that the complexity in the current legislation made it extremely difficult to establish such a list. The lack of such a list acts against government aims of transparency and openness. It contributes to the distrust felt by people towards government use of their data.

But the Law Commission report also reports a view from the Information Commissioner’s Office that problems with data sharing are “generally cultural, based on a misunderstanding of what the law does allow or the result of inter-organisational distrust, budgetary restraints, incompatible IT systems and so forth”.

The chapter on Troubled Families within the Law Commission report on data sharing [67], and the supporting consultation responses, tell a number of tales of differing organisations requiring different legal, financial, technical and process approaches to data sharing.

There is no best practice approach or mediation service to assist in or to resolve situations such as this. This internal confusion and discussion delays the benefits that the public agencies are trying to bring to people.

As the Law Commission report demonstrates charities and the public sector have to go through agonies to share data between themselves even when there is clear benefit to people in need. This is a stark contrast to the almost blasé approach of central government to providing data sets to the private sector.

The Law Commission recommend that a full law reform project should be carried out in order to create a principled and clear legal structure for data sharing that would meet the needs of society. But does this go far enough? How will we determine and embed the principles into that legal structure that will fix the trust issues? Is a legal framework sufficient to address the issues with anonymisation and security?

Is anything being done to resolve this situation?

The current Government has started an open policy-making process to consult on new data sharing policies within the existing byzantine legal framework [68]. Although well intentioned this process is misdirected, lacks visibility, is highly technocratic and limited in its scope, being conducted largely on the government’s terms. The review has just produced its interim findings that mainly recommend more work. The civil society groups taking part in and organising the exercise are to be commended for their stamina, skill and application. But it is highly unclear whether the government will ever act on their findings or whether their writ will run beyond a specialised corner of Whitehall. We risk progress being further slowed and good, strong benefits such as academic research to improve society being hindered.

⁶⁷ See chapter 10 of http://lawcommission.justice.gov.uk/docs/lc351_data-sharing.pdf and supporting submissions

⁶⁸ www.datasharing.org.uk

“the European Directive on the Re-use of Public Sector Information is an opportunity to ensure that there is a robust “open by default” policy across government. It is an opportunity to put into place a more effective, and better funded, regulator, with more leverage.” – Civil Society Organisation

A fundamental problem is the focus on data sharing from the point-of-view of the organisations within Whitehall. This neglects the needs of local authorities, of the NHS and of the many non-public sector bodies that work with the public sector to deliver services. And it neglects the desire of people to have a measure of control over their data.

Moreover as can be seen by the meeting attendees the process is primarily receiving input from Whitehall departments and London-based civil society organisations rather than soliciting views from citizens. The process is not being promoted by the Government’s own communications channels such as the www.gov.uk website. Nor is the process addressing the concerns raised by the Law Commission.

Within more local layers of government some good progress has been made on data sharing initiatives and information sharing hubs in certain areas ^[69] but these typically lack visibility and are mostly being created in an uncoordinated fashion ^[70].

An audit and a review

If we are to consider data sharing as a national priority because of the potential benefits then we should treat it accordingly. Without a comprehensive review of data governance this is like modifying a train to go faster, but without improving its brakes. Eventually it will derail.

The review has considered whether we could recommend a clear approach and framework for handling data. We concluded that given the issues with trust; this would be inappropriate.

Instead we would recommend:

Recommendation 11

Priority: high

Set up a review into Data and Society to gather input from across society and to define a clear set of public interest principles to be adhered to by government and private sector data sharing and analytics projects

A cross-disciplinary team including lawyers, policy experts, research academics, individual citizens, ethicists and computer scientists should lead this review. The review should be well publicised and will actively engage input from across the country using both online and offline means. It should consider how to encapsulate the concept of ‘people owning their data’ in the principles, while recognizing that the term ‘people’ includes both individuals and wider society.

The review should engage with the big data, open data and privacy initiatives in the EU.

⁶⁹ For one of the many Multi-Agency Safeguarding Hubs see: http://www.barnet.gov.uk/WorkingWithChildrenInBarnet/info/40178/multi_agency_safeguarding_hub_mas_h

⁷⁰ <http://www.parliament.uk/business/committees/committees-a-z/commons-select/public-accounts-committee/news/troubled-affairs-report-publication/>

“There is a huge opportunity to unlock the value of government data through better data analytics Public trust is critical for success. An independent data ethics committee should be established with representation from stakeholders inside and outside of government, responsible for writing a Code for Responsible Analytics – Large Company

We recommend an initial report within 90 days of the start of the next government. The initial report should set out initial thoughts and committed timelines for the rest of the review.

Ultimately our review will produce:

- Recommendations for a new legislative framework including appropriate legal action and remedies for the inevitable cases where failure occurs
- Recommendations for further change in the EU data regime
- A response to the American challenge of the Podesta review to set international agendas between trading blocs
- Recommendations for a new oversight function to revamp or replace the Information Commissioner’s Office
- A “polluter pays” principle to ensure the biggest data manipulators pay the costs of effective regulation to protect citizens
- A clear set of public interest principles that can be used to guide future open data, data sharing and analytics initiatives. If an initiative is aligned with these principles, then the presumption should be for it to proceed
- Recommendations for mediation and governance to ensure that data sharing initiatives aligned with the principles proceed and are regularly audited to ensure that they remain aligned with public interest principles
- A clear set of guidelines for publicizing, building and operating new data sharing gateways. For example using open data to publish information about data sharing gateways allowing independent validation that data sharing via these gateways is operating in line with the principles
- Recommended mechanisms, suitable for a 10-year timeframe, by which people can see and regain an appropriate measure of control over how their data is being used. These may include audit trails and usage reports [⁷¹], support for personal data stores [⁷²] and data cooperatives [⁷³], the ability to extra public sector-held personal data [⁷⁴], guidelines for opt-in or opt-out consent, and the ability to both view and report issues with data [⁷⁵].

Where possible we would expect most of the principles and outputs to be common across the public and private sectors.

This review will help unlock the benefits that data sharing and data analysis can bring. There are major benefits in areas such as healthcare, social care, police or education that are simply not being realized by the current uncoordinated approaches; and major battles over trust, accountability and participation to be won.

⁷¹ <https://medconfidential.org/2014/what-is-a-data-usage-report/>

⁷² For example www.mydex.org, www.nymote.org or <https://www.allfiled.com>.

⁷³ A data cooperative might also be termed a data collective or data commons. <http://opendatamanchester.org.uk/2014/09/20/open-data-cooperatives-synopsis/>

⁷⁴ This would be a government equivalent of the Midata initiative with the private sector: <https://www.gov.uk/government/policies/providing-better-information-and-protection-for-consumers/supporting-pages/personal-data>. Some might call it “migovdata”. Such an initiative would require movement on standard data schemas but would allow people, for example, to extract all of their VAT information or medical records held by government for them to use as they choose. It would also support the personal data store market which may require open standards for personal data schema to truly flourish..

⁷⁵ This would also need to extend to cases where legal responsibility is more complex, for example families with children.

Recommendation 12

Priority: medium

That a programme is immediately established to **discover and publish as open data a list of all existing data sharing agreements** in an accessible and understandable format

This programme should operate across all layers of government with the aim of ensuring that all cases of data sharing are discovered, whether in legislation or not, and that their owners and benefits are documented. The resulting data sharing register should be published as open data, maintained and accessible for people to read.

The register could be considered as an “amnesty” for all existing data sharing projects with the disclosure assisting understanding of the problem and improving public trust.

Case Study: The US Big Data and Privacy Review

Edward Snowden’s revelations on how Intelligence Agencies were acquiring and accessing increasing volumes of data on people’s communications and activities without their consent and without adequate oversight raised many concerns. On Jan 17 2014, President Obama announced that a broad 90-day review of big data and privacy, covering “how these technologies affect the way we live and the way we work — and how big data is being used by universities, the private sector, and the government”. Concurrent with this study, the President’s Council of Advisors for Science and Technology conducted a review of the technologies underpinning big data.

Podesta and his team of senior Administration officials consulted with a wide variety of stakeholders at numerous events and sought out public input on these issues. The review asked people to comment on their level of concern with various data practices and how much they trusted various institutions to keep their data safe and handle it responsibly. It also asked more general questions on the challenges and opportunities presented by big data and new technologies. During the four weeks of public input, responses were collected from 24,092 individuals.

The published report: “Big Data: Seizing Opportunities, Preserving Values” identified five main areas where the Administration needed to focus attention, with a number of specific recommendations and actions under each:

1. **Preserving Privacy Values:** Update legislation protecting citizen rights relating to personal information. Create a single national standard for data breaches. Work with international bodies to move towards global standards.
2. **Educating robustly and responsibly:** Ensure data protection in education while encouraging innovation in learning. Update digital skills.
3. **Big data and discrimination:** Ensure that big data is not used to unfairly discriminate, for example through automated differential pricing, and that particularly vulnerable groups are protected.
4. **Law Enforcement and security:** Ensure that there is proper independent oversight of big data uses for law enforcement. Enhance protections against cyber security.
5. **Data as a public resource:** All departments to investigate how they can share their data with the public for public benefit. Increase research into privacy enhancing technologies

3. Personal Data and Identity Assurance

“Data that relate to a living individual who can be identified from that data”; a secure, convenient way for you to prove you are who you say you are when using government services.

Identity assurance is important for many reasons. An identity assurance solution that works for people and government needs to allow people to interact with government in a confident and secure manner. It should be a reusable component that could be used to confirm people’s identity when logging onto multiple services – benefits payments, pensions, driving licence renewal, voter registration, planning applications, or to view and edit their personal data.

The current government has launched an Identity Assurance Programme [⁷⁶] branded GOV.UK Verify. Billed as “the new way for you to prove who you are online, so you can use government services safely,” it takes a federated approach to identity assurance. Rather than a single database a federated approach allows multiple distinct identity providers that each conform to common standards providing both greater choice to the person who is assuring their identity and increased privacy. Individuals can even choose to use different identity providers for different transactions.

In the case of GOV.UK Verify this means that a list of certified organisations – from which people can pick their preferred organisations – are used to verify people’s identity to government. With the exception of the Post Office all of the current choices are outside the public sector.

The federated approach to identity assurance seems a good long-term technological approach to this area, it provides privacy and choice to those who want it. While the principles behind the federated model [⁷⁷] will provide future-proofing in line with expectations of changing needs of the future.

Unfortunately the programme is running significantly behind the initially committed schedule of a launch in Autumn 2012 [⁷⁸]. At the time of writing the service is being used with only one digital service (Defra CAP Payments) and one identity provider (Experian). The people using the service are suffering issues [⁷⁹] and there do not appear to be alternative or Assisted Digital routes. Government has announced rollouts plans for the next 6 months [⁸⁰] and the absence of any service outside of those provided by central government is noticeable.

Even if all central government services are switched to GOV.UK Verify people will still have to retain multiple identities for those public services that are provided by other public sector organisations or by public sector delivery

“It should be policy that the citizen will have an opt out wherever possible, rather than only when government is grudgingly compelled to admit that it was necessary.” – Civil Society Organisation

⁷⁶ <https://gds.blog.gov.uk/category/id-assurance/>

⁷⁷ The Privacy and Consumer Advisory Group (PCAG) developed the principles. The members of this group are unnamed. <https://www.gov.uk/government/consultations/draft-identity-assurance-principles/privacy-and-consumer-advisory-group-draft-identity-assurance-principles>

⁷⁸ The earliest date that we could find is Autumn 2012

<http://www.computerweekly.com/news/2240105591/Identity-assurance-how-it-will-affect-public-services-and-your-personal-data>

⁷⁹ See comments in this blogpost <https://capreform.blog.gov.uk/2014/10/17/introducing-gov-uk-verify-replacing-government-gateway/>

⁸⁰ <https://identityassurance.blog.gov.uk/2014/10/29/the-next-6-months-services-that-plan-to-start-using-gov-uk-verify/>

partners. As a simple, but significant, example it is unclear whether GOV.UK Verify will replace or integrate with the mygovscot service that launched in Scotland in April 2014; or even if identity assurance is a devolved service ^[81].

Meanwhile some potential flaws with the chosen model are coming to light. It is estimated that at most 75% of the population can be served by the current solution due to the need for people to have either a UK driving licence or a credit history ^[82]. In the absence of traditional or assisted digital routes ^[83] for these services then some citizens will be excluded. Meanwhile the privacy experts that advised Cabinet Office on the service have written a letter to the Cabinet Office highlighting their own concerns: ^[84]

‘We have recommended that all existing powers of data access or disclosure should be re-approved by Parliament as these powers have themselves been transformed by modern technology. We also call for effective forms of redress, and for an effective regulatory and judicial oversight over the use of such powers.

‘Public support for virtual identity will depend on trust and understanding. Our Nine Principles are designed to build that, but will only do so if members of the public know what they are, and that the authorities will obey them. That is why we have asked that, after the testing phase, the principles are written into law to ensure their general application.’

There has been no public response to this letter and its call for both greater awareness and legislation. It is noticeable that the strong privacy principles and federated approach are only being applied to the identity assurance service, whilst other departments and services continue to progress with centralised approaches ^[85]. This is something that our review into “Data and Society” would address.

As well as the impact to people caused by the failure to implement identity assurance we do not doubt that these delays have had a knock-on effect and cost in both central and local government due to changing release plans and delayed savings. It will cost public sector organisations time, money and effort to revisit services to align them with GOV.UK Verify when it is launched and stable.

Given the continuing delays and the significance of this component of the digital strategy, we have to recommend that if the identity assurance programme is not in a more stable position before the next government takes office that it investigate the reason for the delays before committing to how to proceed.

It is possible that the reason is the need to stimulate the market for identity providers by committing to integrate the new identity assurance approach into new government services. It is possible that the complexity of the proposed

⁸¹ <https://signin.mygovscot.org/home/>

⁸² <https://gdsdata.blog.gov.uk/gov-uk-verify-service-assessment/>

⁸³ As this blog states it is the responsibility of the individual services to put in place assisted digital support.

As the Defra CAP Reform blog shows some services will fail in this task

<https://identityassurance.blog.gov.uk/2014/10/21/assisted-digital-support-for-people-using-gov-uk-verify-to-access-government-services/>

⁸⁴ <http://doooooom.blogspot.co.uk/2014/11/protecting-privacy-in-govuk-verify.html>

⁸⁵ <http://central-government.governmentcomputing.com/news/hmrc-plans-to-create-single-data-hub-4440010>

solution is simply too high. There is insufficient public information to form an opinion at this time, but the continued delays do cause concern.

Secondly, we were extremely surprised to observe that all of the identity providers were from the private sector [⁸⁶].

Considering both the predicted economic value of identity in the future [⁸⁷] and the fact that government is currently the identity provider for most public services it seems that many people would actively prefer that a public sector or not-for-profit organisation act as their identity provider.

There are other reasons why people might choose a non-private sector provider. It could be because many people have greater trust in the public sector than the private sector [⁸⁸] to protect their personal information and would see any data transfer as an extra risk with an unnecessary cost.

It could be because people realise that their 'root' identity provider is the government, after all as with the Know Your Customer (KYC) rules used in areas such as financial sector the best source of identity is often government-issued documents such as driving licences and passports [⁸⁹].

Given this, the insertion of private sector organisations into the identity assurance path will seem unnecessarily circular to many people. The value being added seems hard to identify when it would be technically feasible for public sector or not-for-profit identity providers to exist within a federated framework whilst still adhering to the same privacy and confidentiality rules as the private sector providers. It would just be more competition and choice in the marketplace.

Such an identity provider seems to be a choice that many people would choose to take [⁹⁰]. A public sector provider would also provide an easier support path for people in need of assisted digital services to receive crucial public services, for example pensions or benefits payments, as all of the responsibility for delivering the service will remain within the public sector.

Technology fails sometimes. In a federated model with external identity providers the cause of failure could be with the person (maybe they are mistyping their password?); it could be with the identity provider (maybe one of their IT systems has failed?); it could be with the public sector (maybe one of their IT systems has failed instead?). Resolving a failure might require the person requesting the service to work through the help functions of each of these organisations with their differing motivations and support structures before they can reach the public service that they are trying to use.

The impact of the failure could be severe: for example the inability to receive the money needed to pay for heating or to buy food. Who will step in in this situation? How will people be both compensated and supported through any crisis that may occur?

⁸⁶ Other than the Post Office that, unfortunately, anecdotal evidence shows that many people incorrectly assume to have been privatized along with the rest of the Royal Mail.

⁸⁷ <http://www.libertyglobal.com/PDF/public-policy/The-Value-of-Our-Digital-Identity.pdf>

⁸⁸ See questions 2_1 and 2_2 in

<http://www.jrrt.org.uk/sites/jrrt.org.uk/files/documents/IpsosJRRTPrivacypollMay2014full.pdf>

⁸⁹ <http://www.hmrc.gov.uk/mlr/your-role/resposibilities.htm> "The best way to do this is to ask for a government issued document like a passport, along with utility bills, bank statements and other official documents"

⁹⁰ We suspect that a co-operative or mutual provider would be a good option

Government must ensure that there are appropriate support and dispute resolution paths in place for these failures.

Recommendation 13

Priority: high

That government urgently deliver on the Identity Assurance programme.

Where necessary investigating the reason for ongoing delays; the potential need for legislation, the dispute resolution and support structures in place in case of failure; the audit structures to ensure that data is kept secure; and how to meet the expected demand for non-private sector identity providers.

Personal Data and Data Analytics

In ending this section it is useful to consider future uses of personal data, data analytics and technology. Some of these cases are already in small-scale trials in parts of government.

The current government has been exploring ‘nudge’ techniques through the Behavioural Insight Team ^[91]. Academics are developing new scientific techniques such as social physics ^[92] that might in the future provide personalized services to help people understand patterns of behaviour and make decisions that could improve their lives.

These techniques could be promising but the private sector, which has been exploring these techniques for some time, has become increasingly aware of multiple issues around their power and potential ^[93].

The explosion of data and the power to manipulate it promise intimate insights into people’s lives at a near population scale. This could fundamentally change social policy, just as mapping the human genome has affected medicine.

Put simply, people, organisations and governments are now playing with incredibly powerful big data tools and technologies that they can’t claim fully to understand. Risk management is vital so that we don’t lose the benefits to society caused by a backlash when things go wrong. Having a regime that manages risk well can create a competitive advantage for the UK. At the heart of this should be consideration of the ethics of a particular process, considered in the round outside the day-to-day managerial and political pressures that exist within organisations.

Medicine and academia have shown this is possible and practical. They have long standing ethical governance mechanisms that allow high-level deliberation of ethical issues and rapid tactical, pragmatic ethical governance at a working level. Government needs to come to a similar arrangement within technology and public policy learning from best practice elsewhere.

“Building trust must also be at the centre of digital government thinking. Citizens must have confidence in the ways that their sensitive data will be used and privacy is also an important part of trust.”-

Professional body

⁹¹ <https://www.gov.uk/government/organisations/behavioural-insights-team>

⁹² <http://socialphysics.media.mit.edu>

⁹³ <http://online.wsj.com/articles/facebook-study-sparks-ethical-questions-1404172292>

Some large organisations have already set up Ethics committees [⁹⁴] to advise on these future issues. But it is hard to see where, say, a small software development team or a third sector body might go for ethical advice. The Samaritans Radar fiasco [⁹⁵] is just dying down as we go to press – superficially it seems that one of Britain’s outstanding mental health support charities made a terrible mistake in not understanding ethical conventions in data governance during product design and testing that would potentially affect millions of people. It seems highly likely that simple, informed external ethical advice with a digital dimension could have prevented this.

Recommendation 14

Priority: high

That government create an ethical framework and governance for emerging ethical issues around the interaction of the state, its citizens and corporations via digital technology

The scope of this ethical framework could usefully extend beyond big data and personal data to areas that the public and private sectors can reasonably be expected to trial during the next term of office, such as wearable technologies, health monitoring and robotics [⁹⁶]. It could also advise government on complex issues at the boundary of technology and society such as the ongoing European disputes over the “Right to be Forgotten” [⁹⁷].

Given the scale of the challenge and concepts involved the membership of the governance structure should extend beyond public sector employees, it should represent society and the many voices and experts within it.

The ethics framework would assist policy makers and delivery teams both within and outside the public sector to make appropriate decisions for the long-term good of society.

⁹⁴ http://www.huffingtonpost.com/2014/01/29/google-ai_n_4683343.html

⁹⁵ Adrian Short wrote a set of articles exploring Samaritans Radar and the ethical and legal consequences. This is a good starting point: <https://adrianshort.org/unethical-twitter/>

⁹⁶ For example the ‘trolley problem’ and robotic cars: <http://www.wired.com/2014/08/heres-a-terrible-idea-robot-cars-with-adjustable-ethics-settings/>

⁹⁷ http://ec.europa.eu/justice/data-protection/files/factsheets/factsheet_data_protection_en.pdf

Empowering People and Communities through Digital Services

Introduction: making participation meaningful

We want people to be more than just users of public services. We want people to use, create, consume, customise, play with, share, improve, inspire, and own public services [⁹⁸]. We want people to participate.

When government works with people we will build better services, ones that are more closely fitted to people's needs. These are public services that people will take pride in and choose to use.

We need to make it easy for people to participate, to know where to go and who to talk to, to know that it adds to the end result and isn't just a box-ticking exercise.

It is important to recognize that people will find it extremely difficult to participate in public digital services without basic digital skills. Once they do have basic digital skills, however, a more participatory approach to public services will help some people develop skills and confidence around technology. This is another important reason for addressing digital inclusion.

For people to choose to participate they need to know that if they have a comment or problem or feedback to offer – on their data, on the services they're receiving, on the issues they care about, on what's happening outside their front door – they will not only be listened to, but will have the right to affect what happens next.

We will empower people if (1) we couple this level of participation with increased accountability for those who deliver public services; and (2) we offer openness and transparency around the performance of public services.

None of this will happen if public services are built top-down, whether it be by Whitehall or the Town Hall, in an old-fashioned command-and-control way. If we build services in this fashion we will fail to grasp the opportunity. We will fail to build truly excellent digital services. We will fail to develop participation and we will fail to empower citizens and communities.

In this chapter, we thus set out what precisely it means to bring participation and empowerment around digital resources for people and for communities of all kinds, and at all levels of privilege and ability.

Putting People First: what does this mean?

There is a lot to be said about, first and foremost, listening to people and focusing on user needs when building digital services. We would recommend that all people building digital services read the GDS Service Design Manual

"The needs of the citizen must be at the heart.... the public sector must become reactive to the demands of the general public, recognising changing trends within the delivery of services and keep up to date with the rapid change of technology." – Large Company

⁹⁸ For this report we will be focusing on digital services and digital government, many of the arguments also apply to other public services.

“A digital agenda should not be a way of taking power from the citizens, and merely providing public services to them, but a way of involving them in its provision.” – Think Tank

and blogs for strong advice on these topics. There is much that can be learnt by teams outside of central government.

But there are also issues with the bigger picture. We are not, currently, sufficiently stimulating the arrival of ideas from outside government. We are not capturing or listening to all of the needs that define people’s relationship with government today.

As we discussed earlier in the review, the selection of which services to digitize is at the moment being made by government based on cost savings. This begs several key questions that are currently going unasked, let alone answered.

Why don’t we have an open suggestions process? Why aren’t we actively and continuously crowd-sourcing ideas? Where can citizens go to report faults with public services? What happens when they do? Why aren’t central government and local authorities actively publishing their roadmaps of intended activities, or lists of urgent problems, and openly asking for help with the answers?

Acting in response to this last question in particular would highlight potential services and answers that decision-makers may never think of.

American cities, led by the example of Code for America, seem to be at the forefront of this movement. For example, the Chicago Civic User Testing (CUT) Group ^[99] has been built by that city to support their digital transformation. It makes the new digital services people-powered by encouraging people, with or without digital skills, to participate throughout the process. A community group facilitates this process whilst using digital tools to increase efficiency and provide openness and transparency. The CUT group has researched the communities within the city and actively works to ensure that it is representative of them.

This seems a useful model for local government in particular to explore. Some local authorities will lack the scale to select specific user groups for each service, while local services tend to need to be more tailored to their place and community. People also tend to care more about their local services; they are more willing to volunteer their time to them.

This approach works for individuals. But the communities that we are building services for and the expertise that we can bring will help more widely. A local authority may need to involve universities, local private and voluntary sector, communities and individuals in its processes to create the best output and services that are right for their people.

By better communication of roadmaps for services being developed, by active engagement of stakeholders, by holding open meetings and processes we can expand input and build better services.

⁹⁹ <http://cutgroup.smartchicagoapps.org>

Recommendation 15

Priority: medium

That public sector organisations should publish open roadmaps of service improvement plans and develop communities to actively request and listen to feedback on existing services; suggestions for improvement and ideas for new services.

“There needs to be more two-way interaction. Mostly at the moment it’s one way. They will send you a text, you can’t reply or have a dialogue.” – Civil Society Organisation

These roadmaps should not be limited to digital activities, although they have been our focus. An open and participatory roadmap process would provide a straightforward route for a community group to request or access useful data without them having to navigate the complex and occasionally technocratic world of open data requests.

For example, it would provide a startup with the opportunity to request an API to help it integrate and operate more efficiently; it could enable a citizen to suggest an idea to one local authority which they saw in another; it could enable a group of citizens to start up a social enterprise to solve a local problem; it could allow residents to raise concerns about the quality of waste collection.

At the moment these processes are closed to many people. They are only available for those ‘in the know’. This is what we are setting out to change.

Similarly once new services are live we should not stop listening to expressions of needs and measure of satisfaction. By this, note that we don’t mean simply measuring satisfaction when a transaction is completed [¹⁰⁰]. We mean actively researching satisfaction. We mean having an open process for people to suggest improvements or to report errors.

An open process will mean that the feedback is open and available for others to comment on: for others to build upon ideas, or to gently point out why they may be wrong. These models are widely used elsewhere, and we are starting to see signs of use in the NHS with Patient Opinion [¹⁰¹]: we should use them more widely in government.

Listen to this feedback is not a simple task. It will create a lot of noise as well as useful information. It will require a culture change in many public sector organisations: a change that must make the organisations more adaptive and responsive to needs.

Inevitably, the feedback will be a place where people let off steam as well as being constructive. Similarly public sector organisations will make some mistakes at first. But we trust that the public and the media can tolerate those mistakes if the general direction is healthy. It will initially create more work for busy workers, but it will also create more energy, enthusiasm and ideas.

¹⁰⁰ In some cases misleading satisfaction scores are produced by this mechanism. The voter registration service captures satisfaction after completion of an application form; rather than upon completion of the voter registration process. In our own test the application form took 2 minutes with satisfaction being measured at that point. The whole process took 6 weeks with no opportunity for feedback after the initial application. It is useful to measure satisfaction with the form but this should not be presented as satisfaction with the service.

¹⁰¹ <https://www.patientopinion.org.uk> Some other examples would be <https://bugzilla.mozilla.org> for the Firefox web browser or <http://www.tripadvisor.co.uk> within the travel sector

“Government needs to show that it is serious about wanting feedback from citizens. Feedback mechanisms - physical or virtual – should be established for Government to listen and respond to.”
- Civil Society Organisation

It will require updates to processes to ensure that, in some cases, the correct legal processes are followed. It will require resource to moderate the feedback, although as a community develops we would expect healthy behaviour to emerge. The ideas that come in will not be limited to digital. They will be about process, about design, about needs. We will be using digital techniques to gather feedback about non-digital parts of the service. That is a good thing.

In line with best practice we would recommend that such online communities support anonymity while providing authoritative identity to those responsible for the community in case of need.

We would encourage public sector organisations to foster, moderate and actively participate in such online communities to provide suggestions for new services and feedback on existing ones. It will provide an additional route for support for those who require assistance to use digital services.

We would also recommend that public sector workers be allowed, if not encouraged, to participate anonymously if this does not conflict with their duties and responsibilities. They have that right elsewhere on the Internet, they should also have that right in these communities [¹⁰²]

Such communities should be complemented with more structured research to provide decision-makers and service owners with the highest quality information.

The crowd does not always create wisdom. We cannot control the membership of the crowd we can only influence it by providing incentives and capability. We should be listening to all voices, not just the loudest, and responding honestly and transparently. This does not mean shirking responsibility. In the vast majority of cases the final decision will still need to rest within the public sector.

Case studies: People powered innovation in Helsinki, Leeds and Newcastle

Brickstarter is an emerging concept being developed in Helsinki. It aims to combine crowdfunding principles with social media so that citizens can help "make good things happen in their neighbourhood". It is not yet operational but functions as a blog, a beta website, a set of supporting documentation and has been the subject of several admiring press articles.

The concept is that individuals can easily put forward a proposal and the website would encourage others to contribute their time, expertise or funds to help it become a viable project. It changes the dynamic of public consultation. Rather than local government officials sending out fully formed proposals for public consultation, the Brickstarter concept is about developing and evolving an idea with community consultation and creating public momentum.

There are several exciting initiatives in UK cities and regions, where new technology and open data is being used to encourage greater participation and innovation. For example Leeds Data Mill is promoting the use of open data sets from public, private and third sector sources to give citizens greater insights into the performance of their city (The Leeds Dashboard) as well as promoting new business opportunities. In Newcastle, Information Now is a website aimed at providing a range of valuable information for older people in one place, including a directory of service providers, advice and articles.

¹⁰² At this point it would be remiss of us not to applaud those public sector workers who already contribute openly. Sir Bonar Neville-K is our particular favourite: <https://twitter.com/sirbonar>

“There needs to be the ability to engage with government (at all levels) in a way that is most effective for the person or organisation, rather than the most effective for government.” – Large Company

Digital consultation: helping everyone participate

Complex policy decisions follow a more formal consultation process than those addressed in the section above [¹⁰³].

Government is making greater use of open policy making” [¹⁰⁴]. We would support this move. Open policy is a close cousin of co-production. Used in the right place it introduces agility to the process and it openly brings in expertise and thoughts from outside of government. It can allow more people to participate. Open policy’s use of digital tools such as websites and online collaboration environments can let people participate when it suits them, rather than when it suits the government.

But we need to be careful not to move so fast that we leave people behind, or that we end up excluding people as a result.

This is a particular risk with open policy making as it can focus on digital means of communication, at the expense of other means of communication. Given the current issue with digital inclusion this will reduce some people’s opportunity to participate in the democratic process.

Another issue that came to light in our analysis was that some open policy processes are not being communicated through normal Government online channels at all. Instead they are being presented through relatively specialist, separate portals.

For example we noted earlier that the Data Sharing open policy process is not present on the GOV.UK consultation page and is instead promoted on an external website to a limited audience. The Data Sharing open policy process held all of its face-to-face meetings in London – hardly an inclusive approach.

On a similar note the department for Business Innovation and Skills is using an external page to host some (even all?) of its policy consultations. Are these the same consultations listed on GOV.UK [¹⁰⁵]? And how does this approach align with Government encouraging people to start with GOV.UK to reduce the number of people entering sensitive data into fraudulent sites?

Again, after the Deputy Prime Minister launched an open policy process to develop ideas to grow the North of England [¹⁰⁶] the launch was covered in a press release on GOV.UK but the consultation page is hosted on a separate website. At first there were to be no face-to-face meetings; then there were eight meetings that were spread across the North, but all on the same (working) day. It is unclear what promotions took place about these meetings outside of digital channels. Will they have reached a sufficiently representative group of people?

If we can address these issues then open policy making does have great potential. When coupled with an open approach to presenting data, information and methodologies then it can place citizens on a more equal

¹⁰³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255180/Consultation-Principles-Oct-2013.pdf

¹⁰⁴ https://www.gov.uk/government/publications?publication_filter_option=consultations
<https://openpolicy.blog.gov.uk>

¹⁰⁵ <https://bisgovuk.citizenspace.com>

https://www.gov.uk/government/publications?publication_filter_option=consultations

¹⁰⁶ <https://www.gov.uk/government/news/deputy-prime-minister-announces-northern-futures-project>,
<http://northernfutures.dialogue-app.com>

footing when providing their opinions to government. This can increase engagement and produce better outcomes.

For example, the Open Data Institute worked with Telefonica Dynamic Insights to develop a tool to allow people to understand and explore the impact of fire station closures in London [¹⁰⁷]. The City of Chicago took this approach a step further when it was faced with a policy decision to cut schools. It released open data sets and supported a community group that built a tool to let citizens understand comparative school performance, geographic proximity and hence provide more informed feedback to the City's detailed consultation on how to implement the policy [¹⁰⁸]. Such approaches build on open policy and provide a way for more citizens to participate.

We would thus encourage a revisit of the open policy process to consider:

- i) Whether communications should follow the same process as more formal consultations
- ii) How to include all citizens, not just those who currently have digital skills or are able to attend a limited number of face-to-face meetings
- iii) Whether all open policy development processes should be hosted on GOV.UK
- iv) How more use can be made of open data, information and methodologies to create a more level playing field between government and citizens.

Recommendation 16

Priority: low

Ensure that open policy processes provide open data and equal opportunity for people and communities across the country to contribute.

"The power relationship needs to be reversed so that the digital services are seen as a tool to influence and shape government in the interest of the people rather than as a way of shaping people in the interests of government." – Local Authority

Digital communities: enabling and participating

The communities that people form have traditionally been local. Our friends and work colleagues are local. Our leisure activities are local. Communities have formed locally where people support each other. We share tips, advice and good practices in the shop, in the pub, in the workplace.

As the digital world has moved into our personal lives many people's communities have changed. The Sunday football team might organise themselves using a website with players declaring their availability for particular matches before meeting up on the day. We now share tips and advice with friends and peers on social media sites like Facebook, Snapchat and Twitter in between our social catch-ups with them. We might develop best practice with colleagues in our professional fields using blogs and LinkedIn groups in between conferences.

This digital approach has led to new collaborative networks being formed: networks that are partially digital and partially face-to-face. A purely digital form can work for suggestions and feedback but this mix of digital and face-to-face is also needed.

¹⁰⁷ <http://london-fire.labs.theodi.org>

¹⁰⁸ <http://www.schoolcuts.org>

Government should support this approach both around public services and in other areas where these networks would be useful but are not forming themselves. Such networks could provide part of the solution for Assisted Digital, where people may have digital skills but are unable to complete a transaction by themselves.

Such networks could also provide support for, say, jobseekers or medical patients by providing them with support between each other and between the community and government in between face-to-face meetings with frontline workers. It would provide an avenue to assist people to gain the trust, skills or confidence to complete some of the more complex government transactions.

Such networks would also be useful to help grow local economies and businesses [¹⁰⁹], to form new Sunday league football clubs or other community activities, to find safe places for breastfeeding via services like Feed Finder [¹¹⁰], or to allow people to share spare portions of home-cooked meals with services like Casserole Club [¹¹¹].

The latter case is useful to understand. Government is providing confidence in the service by performing criminal record checks but otherwise the service is acting as a matchmaker between supply and demand. This is not a classic public service, it is truly innovative and one that was created by a small company, but it is one that a digital government can enable. It is also one that improves people's lives.

There are two prongs to our recommended approach. (1) Where communities already exist, government should participate in those communities rather than attempting to create new communities. But (2) government should also act as an enabler and active participant to create new communities.

Specifically government can enable new communities by:

- Building scaffolding in the form of a recommended digital toolset(s) [¹¹²]
- Providing community guidelines
- Providing confidence in people's identity and skills through services such as identity assurance, criminal record checks, verification of status (for example a student, an employee of a local authority) or verification of skills (for example teacher or medical qualifications) [¹¹³]
- Providing links to sources of training

And Government can facilitate the flow of information between communities by:

- Providing global analyses & insights
- Providing timely and relevant contextual information (about the locality, similar localities, and across the country) to inform local decision making
- Facilitating the collection of comparable information by providing platforms and standards

¹⁰⁹ <http://digitalleaders.co.uk/wp-content/uploads/2014/08/Living-Lab-Session-Summary.pdf>

¹¹⁰ <https://feed-finder.co.uk>

¹¹¹ <https://www.casseroleclub.com>

¹¹² To be clear we do not expect that government will necessarily have to build these toolsets, many already exist, but government will need to be careful in their selection and in clearly communicating any issues around privacy and use of personal data

¹¹³ From a digital point-of-view we see many of these things as turning activities that currently happen by paper forms or phone calls into APIs that can be integrated into automated solutions, for example this could be an expansion of the GOV.UK Verify service. It is very similar to the service that the DVLA has created for insurance and car-hire firms to allow those firms to check people's driving records yet being used for wider benefit

Consider an active and engaged community that has been working with an authority on planning or education issues. The authority can make a general open data release but can also specifically target the release to this community as a significant new issue arises. This means that the authority and the community can then work together to create a solution. People can use the data and the community to help them organize; better democracy and better solutions can result from this.

We do have to be careful to avoid the trap of making digital not only the default but the whole story.

If we build this digital scaffolding and these online communities then they should be one of the ways to contribute, not the only way. Some people prefer face-to-face conversations. But with digital we can more easily allow people to contribute when it is convenient for them to do so and we can reach more people more quickly.

The effect of such communities will be beneficial for people and communities; will provide more reason to go online for some of those choosing not to go online; and will gradually increase the nation's digital skills and confidence.

Recommendation 17

Priority: medium

Government should **provide 'digital scaffolding' to enable communities to quickly form an online presence. Stimulating such communities around public services** to enable communities to assist each other.

Some of these communities will be centred on public services: for example medical patients or job seekers. Government should enable the timely flow of relevant information between these communities and between communities and the public sector. The scaffolding should allow access to relevant Government digital services to enable new services to be created within and around those communities.

People-powered services: making it the way we work

Coupling these recommendations with the best practice for central government in the Government Digital Service (GDS) Service Design manual we can start to sketch a model for producing more people-powered services across the public sector, not just in the centre:

- Building digital communities for people and communities
- Using these communities to gather needs and feedback for potential services to be digitized
- Prioritising service development based on community feedback, performance, data, societal value and policy priorities
- Communicating an open roadmap of service development activities
- Performing detailed user research according to existing guidelines
- Publicising and running open and transparent processes with the community while designing, building and testing a new service through Discovery, Alpha and Beta phases

- Ensuring that every service has an API, with accompanying consumption model and security
- Forming digital communities as support networks to provide continuing guidance and assistance to both the public sector and the people that use the service

We are not naïve enough to think that we can design a new process in isolation. It will need real deliveries and involvement from the many practitioners around the country to turn this sketch into best practice.

Although not clearly stated it appears to us that it is a policy decision that GDS should concentrate on central government and not incorporate these potential needs, techniques and best-practice for local government into the service design manual. GDS should be allowed and encouraged to work more closely with these groups.

We will expand on this more in the next chapter.

Recommendation 18

Priority: high

Government Digital Service (GDS) should be given the remit to work with local government

Thinking Local by Energising Cities and Regions

Introduction: common problems and local problems

“Local government is an area for particular focus, given resource constraints. Innovation and sharing of resources should be strongly encouraged.” - Professional body

Most public services are delivered at the local level.

We may renew our car tax once a year but our bins are collected every week or two; we are constantly making planning applications; our children go to school locally; and we use local roads and public transport every day.

Some local services are highly complex almost bespoke for each person's needs: for example, housing support and social care. These complex services are often the most impactful, the ones that (if delivered well) can provide the biggest benefits to people and society. A local authority typically delivers these services in co-operation with multiple agencies: the NHS, the police, the private sector, social enterprises and the voluntary sector.

To the person or family unit that the public sector is serving this should just be a single, seamless service. Digital technology and service design, can simplify the complexity of the public sector and help to make these services people-centric, focused on their needs. But this is complex to do safely and apart from some stand out examples of good practice we are a long way short of realising the potential of digital services across the huge range of local government in the UK.

In many cases citizens can of course just get on with things themselves and use the power of consumer-facing digital services to create their own local information infrastructures that talk about local public services and public policy challenges. This can be seen in thousands of local websites, twitter feeds, Facebook pages and Tumblrs where people talk about the good and not so good aspects of the places in which they live or work. Smart local representatives and councils work with these online groups to elicit feedback and intelligence about local needs and service provision [¹¹⁴].

We see a spirit of optimism in the interest in new services and technologies, often called smart cities. These notionally offer the potential for great improvements but are in their early days, progress is sporadic and we are only just beginning to see tangible smart city deployments that impact real citizen's daily lives. The most conspicuous are the many transport apps in London in particular where a real ecosystem of public data and private industry is developing.

Despite the spirit of optimism of smart cities overall in our work we detect concern that local government has not kept up with the very best practice of Government Digital Service (GDS). Despite the fact that local government has for many years delivered better high volume transactional services than central government.

¹¹⁴ Creative Citizens research – Williams et al <http://creativecommons.co.uk/2014/07/07/the-state-of-uk-hyperlocal-community-news-a-survey/>

We need to recognize that there is an urgent demand for more flexible and effective services at the level not simply of cities, but of local authorities – each facing unique challenges, but also representing immense opportunities for gain from improved support, guidance and sharing of digital tools and practices.

The ‘People Powered Public Services’ report by the Local Government Innovation Taskforce set out a radical plan for devolution of responsibility for services [¹¹⁵]. That report can see the potential for digital but acknowledges that local government doesn’t have as much capability as it requires to realise it:

‘Local authorities are in a position to fundamentally reshape public services for the benefit of residents and businesses through the strategic development of their digital assets, and drive significant savings over the course of the next decade. Local government needs to develop an IT capability that is disruptive, that can develop its own solutions and designs services differently, centred on people. New opportunities to share IT services between local authorities, on a bigger scale and through digital centres of excellence should be pursued’ [¹¹⁶]

The report recommends that local government

‘Develop a new strategy for technology to support service innovation, establishing new protocols for open data and sharing data between agencies, and new platforms to build interoperability and promote access.’

Complexity: the scale and diversity of the challenge

Local service delivery is an incredibly complex environment within which we are wary of making broad-brush public policy recommendations.

The scale of the challenge is considerable, as is its diversity. There are 433 local authorities in the UK [¹¹⁷], ranging from London Boroughs serving densely populated areas to Welsh councils serving large, lightly populated geographies. Some are unitary, some are part of a public sector hierarchy (parish councils, town councils, borough councils and district councils). A council typically delivers 400-600 services, and will have accumulated ICT systems over the years to handle the challenges of each service.

These systems will have been built using the same methodologies that ruled in both central government and the private sector: they are frequently bespoke systems built for a particular service and often procured on long-term contracts. Each public service will be subject to guidance and directives from central government departments as well as demands from the people that they service locally.

Within this diversity, some challenges are national: they are common to almost every local authority in the country, and open to common gains from digital.

¹¹⁵

<http://lga labour.local.gov.uk/documents/330956/6335671/INNOVATION+TASKFORCE+FINAL+REPORT.pdf>

¹¹⁶ LGA report P34

¹¹⁷ This figure includes England, Wales, Northern Ireland and Scotland http://www.local.gov.uk/local-government-intelligence/-/journal_content/56/10180/3023905/ARTICLE

"In areas such as complaints citizens are developing informal services and moving between formal and informal channels to communicate with government. Local government in particular needs to tap into these informal" services as a resource for insights on service improvement." - Civil Society Organisation

Across the whole sector, for example, there is the need to support heavy budget cuts. The funding gap is expected to reach £12.4bn by 2020 [¹¹⁸]. Digital could support this challenge by increasing efficiencies and reducing the cost of service delivery.

Some service needs are also common across the nation. One famous case study is a smartphone app, designed to help people to park (a near-universal UK challenge amenable to technology). Similarly, a website allowing local people to report potholes is of universal use; as is an online map showing the locations of public toilets; or the ability to raise a Freedom of Information (FOI) request. These problems and needs are among those shared by all local authorities.

Another national concern is the ongoing debate over localism, or devolution, of powers to regions, cities, local authorities and even down to community level [¹¹⁹]. Responding to this will require flexibility to deliver new services or to deliver existing services under guidance that varies across the country.

For example, the powers that are devolved may well differ across the country, Scotland may receive devolved powers that are different to those devolved in England [¹²⁰] and develop different delivery guidelines.

Across the UK, people and communities are all coming to expect higher and higher levels of digital service. They see high quality in the services they use at home and at work. They see it on their smartphones, tablets and laptops. They see it in some central government services and question why their local authority is falling behind. They may understand that their local authority lacks the scale of a central government department but they are likely to think that this is government's problem, not their problem.

The above are all national challenges that local authorities must engage with on an individual basis – and that sharable national approaches can greatly help. Many other challenges, however, will vary by area.

Consider the fact that individual areas have very different high-priority issues: a growing urban population, perhaps; changing demographics; social care; increasing traffic congestion; the need to control emissions; persistent levels of crime and anti-social behaviour [¹²¹]. And these lists may also change within the space of a few years: people's needs evolve and political control can shift.

The complex services that we mentioned earlier will vary by location. Each location will have differing partner agencies with differing capabilities or drivers for integration. Both at regional level, where NHS Scotland, NHS Northern Ireland and NHS Wales may choose to operate under different guidance to NHS England, but also at local level where third sector organisations often help to deliver services.

¹¹⁸ <http://www.localgov.co.uk/LGA-reveals-extent-of-council-funding-black-hole/36634>

¹¹⁹ There are numerous devolution announcements being made by all parties at the moment. For specific examples see the Labour Local Government Innovation Taskforce report, the debate over the devolution of more powers to Scotland, or the various announcements centred on Northern cities <http://lga.labour.local.gov.uk/documents/330956/6335671/INNOVATION+TASKFORCE+FINAL+REPORT.pdf>

¹²⁰ For example Housing Benefit may be devolved to the Scottish Parliament who may choose to define their own rules and reach their own arrangement on delivery with Scottish local authorities. Yet Housing Benefit is currently included in the Universal Credit service which is being nationally developed by the central government Department for Work and Pensions (DWP).

¹²¹ See page 11 of this report on smart cities for examples of varying needs

<https://www.innovateuk.org/documents/1524978/2138994/Solutions+for+Cities+-+An+analysis+of+the+Feasibility+Studies+from+the+Future+Cities+Demonstrator+Programme/5d8ad270-4623-4057-a0e8-2e303033122f>

And then there is the fact that access to the Internet and connectivity itself varies widely by area. The service in central London is vastly superior, for example, to that in rural Wales, Scotland or the North.

These area specific challenges speak strongly to the nature of local government. Local authorities are accountable to their electorate to deliver services that are right for the place, for the people and communities that live and work there.

It is natural that these authorities will have different local needs and differing service responses. We need to put recognition of this diversity and localism at the heart of our digital ambitions.

To summarise we see:

- That local government faces the same degree of legacy technology challenges as central government
- That the most regularly used government services are delivered locally
- That local authorities faces common challenges such as budget cuts and rising expectations from people for better digital services
- That devolution may impact on the how services are being delivered and that flexibility is vital
- That there are some services that have common needs nationally (parking, potholes, the location of public toilets, FOI requests) that could be supported by common components
- That there are also challenges and priorities (driven by local needs, local delivery partners, local accountability and political control) which are specific to each local authority and that vary over time
- That two, or 433, local authorities can have differing priorities at the same point in time
- That some services are more complex than national services, requiring local integration across multiple agencies
- The skills required to deliver modern digital solutions to public service challenges – both leadership and hands on will be in short supply in many local authorities

The need for a strategy: meeting expectations, rising to local challenges

Against this backdrop (in particular of increasing complexity and reducing budgets) traditional long-cycle approaches to procurement and development of digital services will lead to digital services in local government not keeping up with the expectations of front line staff, local elected representatives and the public.

Local government faces more difficult digital challenges than central government but, despite pockets of success [¹²²], local authorities are not working together to tackle these digital challenges [¹²³]. It seems clear to us that GDS has not been charged nor resourced to work with local government whilst Department for Communities and Local Government (DCLG) is

¹²² Such as the Open Systems Alliance or Local Gov Makers

¹²³ See Appendix C for more evidence for this assertion

“There is a need for coordination, overarching leadership and some sector-wide strategy for councils to benchmark their progress, inspire change through healthy rivalry and pride, share good practice, and prevent duplication of efforts.” – Think Tank

conspicuous in not having an overarching strategy or vision for how digital should or could work in this sector [¹²⁴].

For many people, the answer to the conundrum of how to increase the pace of digital transformation local government seems obvious: we must create an equivalent of the Cabinet Office Government Digital Service (GDS), a “a local GDS”, and seek to replicate its national successes and expertise at the local level.

There is significant demand for such an organisation from a growing number of people and organisations including those such as Socitm (the Society for IT Managers) and LocalGovDigital who are themselves working to improve local government’s digital capabilities [¹²⁵].

We must, however, be extremely careful around what is meant by “a local GDS”. The central government GDS is one organizational group, based in a single location and that leads on digital transformation across central government. GDS owns or part owns a delivery programme; builds new services; produces common components; and enforces tight governance over standards that all central government departments must adhere to when they build their own services.

Such a model cannot be directly transplanted into local government, where there is a more complex cultural and political challenge constantly being addressed: how to deliver cost-effective digital services that are right for the people and communities represented by each democratically elected local authority.

Understanding localism: collaboration and reuse, but not a loss of power

Local government is a sector where many forms of innovation structure have been tried. Socitm summed it up well:

‘...relying upon volunteer, grass roots activism (like the LocalGovDigital initiative) and subscription-based membership models (like Socitm or Looking Local), is unlikely to deliver digital transformation at scale within the sector.

‘It is equally unrealistic to expect a sector where there is a history of patchy implementation of digital processes and services, and where funding is extremely tight, to suddenly change its approach without some sort of financial kick-start.’ [¹²⁶]

The authors of ‘People Powered Public Services’ said that:

‘In the context of devolved powers, the role of the centre should be to encourage and challenge local areas to develop tech capability’.... To drive interoperability, capacity and learning locally, lessons could be learned from the Government Digital Service (GDS) to lever in new ideas and support the development from the ground up of systems designed around

¹²⁴ The central government department responsible for local government, DCLG, is the only department without a digital strategy

¹²⁵ <http://www.socitm.net> <http://localgovdigital.info> Other groups do exist such as the Scotland Improvement Service <http://www.improvementservice.org.uk>

¹²⁶ <http://www.socitm.net/news/socitm-proposes-creation-local-government-digital-service>

the needs of users and open platforms to provide information and data in an accessible way [¹²⁷]

We don't think that a single new service is the answer. A network of people who do things working together voluntarily with the backing of their local leaders is far more likely to achieve results than a grand strategy cobbled together at the centre and imposed on the unwilling, cynical or reluctant.

It is essential to retain local democratic control and accountability. It is essential for local authorities to work with the people and communities in their area to develop the services that are right for them. This creates the best services: people-powered ones. Local groups within authorities can create the space for innovation and creativity to flourish across the country, not just in the centre. They can choose to support local businesses, social enterprises and startups within their economy.

At the same time, we should be able to create more reuse and encourage more collaboration both between local authorities and their communities; and across the local sector. There are examples of excellent collaboration but they are just that, examples, rather than the standard way of working.

We can't force people to collaborate when they don't want to, instead we need to show them a direction and convince them that this collaboration will help reduce costs, provide scale and bring better public services to all. It will take a culture change to do this, but that is a challenge that we should take on.

So, we need a balance of recommendations that build on the existing pockets of excellence and collaboration, that allow local democratic control and accountability, while also encouraging greater reuse to reduce inefficiencies, and enable local authorities to take advantage of new digital capabilities and provide better services to their people and communities.

Evidence: to prove the benefits of investment

Recommendation 19

Priority: medium

Maintain a strong, open evidence base to capture the outcomes, costs and benefits of implementing and collaborating on digital services.

We would expect that this evidence base is best developed and maintained by DCLG. These outcomes must be linked to the public services that they support. Technology is there to support services, not an outcome in itself.

Local authorities are often discouraged from investing in technology or reusing innovative ideas because there is a shortage of convincing evidence that it will deliver sufficient benefits to outweigh the costs. This is an even greater issue given the pressure on public sector spending.

¹²⁷

<http://lga labour.local.gov.uk/documents/330956/6335671/INNOVATION+TASKFORCE+FINAL+REPORT.pdf>

There are a growing number of case studies from across the UK and around the world. Yet because of different implementation conditions, differently defined performance metrics and calculation methods, the benefits are not comparable. With the shortage of hard evidence, projects are heavily dependent on forceful leadership with an instinct to implement their digital vision. If possible, this approach should be harmonised with common approaches being adopted in Europe or internationally.

A consistent approach would provide the evidence base that authorities need when deciding on their digital strategy or whether to invest in a new capability. This approach should build on open performance data described earlier in the review. Linking spend data to service performance data to the digital assets that are creating that performance will be a strong contribution to the evidence base.

This evidence base should not be a static document produced by a single department or organisation. We should be aiming for a collaborative and evolving evidence base, accessible from one place but open for all to participate in and contribute to.

A consistent and open evidence base will allow comparison across the sector. It will highlight both the good and the bad.

Making this evidence open and public will allow local authority leaderships, the new local Public Accounts Committees; and the people and communities within those authorities to measure the value of different approaches; to have an informed debate; to increase accountability; and to drive improvement to public services across the sector.

Leadership: driving change across an authority

Recommendation 20

Priority: high

Local authorities should recruit strong, capable leadership and delivery teams responsible for both digital activity and culture change across the authority. The benefits and service improvements will pay for the investment.

Ultimately, the success of local digital services will depend on the drive, capability and accountability of those responsible for those services. There is not a single leadership and organisation model that can be used as a template. Each authority will develop their own solution based on their needs and the resources available to them. But without a leadership open to modern service design and capable of leading digital transformation progress will be slow.

Leaders will need to be aware of the potential of digital to transform services, but also need access to a range of specialist skills that can help them manage the complex transformation and change projects that digital can entail. They should be able to work across the authority to break down organizational silos that may be hindering transformation.

These leadership and delivery skills required will include:

- Political leadership with digital knowledge and experience that can work with the organisation to develop a digital strategy that suits the region's citizens.

"Councils need officers who are able to think strategically and knowledgeably about digital solutions and how they are provided." – Think Tank

- Organisational leadership with the responsibility for digital activities across the local authority which reports in to the highest level. Some authorities might choose to call this a Chief Technical Officer or Chief Digital Officer. Such a leader would need to work closely with both the Chief Executive Officer and the political leadership to develop the culture within their local authority.
- Delivery skills to implement both modern digital services and approaches such as data sharing, data analytics and open data. Some local authorities might choose to appoint a Chief Data Officer.
- In-house responsibility for digital architecture, digital programme management and procurement. It is not possible to successfully deliver on a digital strategy without these skills within the authority.
- Transformation skills to revisit organizational structures and business processes.
- Collaboration and stakeholder management skills, to engage with a wide range of partners throughout the design and delivery processes; other public sector bodies and neighbouring authorities, community groups, private sector suppliers, universities and research institutions.
- Communication skills to engage openly and frequently with citizens and community groups.

Working together: both locally and nationally

A strong evidence base and good leadership will encourage collaboration and reuse across the sector. We still need more mechanisms to support this and make it happen.

There is a need to catalyse amongst local authorities and their partners a new, small network of 'local digital factories' to produce and run as live services modern digital public services based on best service design practice. The method for the service can then serve as a template for others whilst, where possible, the underlying software for the service should be developed as open source so that it can be reused.

For instance a 'local planning factory' would be a group of local authorities who wanted to build a better planning service using modern service design principles to cope with a major burst of house building and save money. They work together to design build and run a service in their boroughs, publishing their benefits, savings, code and methodology for others to use or copy.

A number of things could bring together people in a local digital factory – it could be a track record of working together [¹²⁸], a shared geography, a packaged devolution deal to a number of authorities [¹²⁹], common expertise, or a common service partner.

We think that cost pressures will drive people to take part in this work and that catalytic rather than core or full funding of local digital factories is required.

"An overall Local Government Digital Programme should learn from the GDS and its work in central government, but might like to take the form of a coordinated coalition – drawing on the existing expertise of organisations such as NESTA, LocalGovDigital, and other organisations such as SOCITM to bring about more coordinated change." – Think Tank

¹²⁸ For example the Open Systems Alliance: <http://www.computerweekly.com/blogs/public-sector/2014/04/councils-stage-open-software-r.html>, or the North East Procurement group: <http://www.neprocurement.com>

¹²⁹ <http://www.independent.co.uk/news/people/profiles/sir-richard-leese-interview-devo-manc--city-dreams-of-a-northern-renaissance-9804998.html>

The overall machinery of devolution will bring about substantial reallocation of funds and it is the Review's view that the modest funding required to support half a dozen local digital factories would help de-risk some service innovation and devolution itself.

Whilst money is needed to make this happen it needs more than that. It requires intelligent convening, advice and incubation of the factories that achieves the most senior management buy-in. Some people have pointed out to us that it is 'no one's job to make this sort of thing happen' which in part explains the calls for a 'local GDS'.

It will need an organisation with capacity and expertise to bring these factories into existence.

Recommendation 21

Priority: high

A new national organisation to create 'local digital factories' should be set up and run on a fundamentally open, collaborative and not-for-profit basis.

This organisation will require funding and people to kick start it into existence. These may come from central or local government, alternatively an organisation such as Nesta may take the lead.

This new organisation should build on existing assets and capabilities, what is good and what is great. It should bring together existing leaders and create an environment in which anyone can publish their work whilst championing a better marketplace for local government digital services.

Authorities should be operating openly and sharing their activities, plans and roadmaps with their residents. Sharing these with other authorities will lead to increased collaboration opportunities that a national organisation such as this can lead on [¹³⁰]. We recognise that a number of national local government organisations exist, but none have sufficient capacity or capability to provide the stimulus this sector requires.

A new national organisation can bring together regional digital services or teams from local authorities to drive change: for example adapting central government website standards to meet local government needs, producing solutions for the challenges produced by integrated healthcare, or developing approaches for local government procurement. To form these collaborative links the organisation is likely to benefit from being nationally distributed, with a presence in multiple geographic areas to understand their differing needs and delivery capabilities.

To be clear this organisation does not and should not govern the implementation of local services, in other words this organisation does not have 'teeth'. The intent is that the evidence base, strong leadership within authorities will provide a desire to change whilst regional collaboration and this national organisation will provide much-needed delivery capability.

Two authorities may choose to jointly tackle a problem with parking, two other authorities may choose to jointly tackle a problem with alcohol dependency,

¹³⁰ The pipeline service from LocalGovDigital is a step in this direction <http://pipeline.localgovdigital.info>

five others may choose to engage a single supplier to investigate integrated healthcare; whilst a Regional Digital Service may choose to tackle housing. This national organisation will provide space and capacity to support, encourage and promote such collaboration.

The results of this collaboration should be open for others to reuse: we are all working to the same goal. In some cases the collaboration will be open-source for others to freely reuse. In other cases it may be an idea, or an open design pattern combined with a proprietary solution. We should default to open but there are cases where proprietary is necessary.

We would expect continuing funding to come from within the local government sector. With a strong evidence base that this organisation delivers change then authorities will contribute so that they can continue to benefit. Detailed funding models will need exploration with local government.

Central government must also participate in and support this national organisation. Central government can highlight national challenges; bring in international best-practice; bring in those ideas developed in Whitehall; and bring in skills developed over the last few years¹³¹; but it can also listen and learn from the challenges that local authorities face and the best-practice that local authorities have developed. Some of the ideas that local authorities develop will be useful for central government. This is a simple extension of the existing and growing collaboration between central government departments. We would expect both DCLG and the Cabinet Office (in the form of GDS) to participate.

This collaboration will need both online and real-world spaces. This is extremely similar to the problem of collaboration between the public sector and people that was discussed in the last chapter.

This collaboration should not be about simply producing new documents and best-practice guides: although there is a strong place for standards and architecture as we will discuss in the next chapter. The best practice comes through delivery. Focussing local and national collaboration on real problems will lead to the best outcomes.

Smart cities: building a common blueprint

There are a wave of emerging new technologies such as intelligent transport systems; water, waste, and energy management; and city sensors to monitor the environment. These technologies combine hardware, software and analytics to deliver more efficient, effective and sustainable public services. Collectively these are often referred to as Smart City technologies.

Smart city technologies can also be simply seen as part of the evolutionary path for public services in our cities. Any local authority should choose to use them if they make sense for their needs.

Many of these technologies can be applied equally in rural communities. But it is in cities, with large populations in a defined area driving intense demand for services, where the benefits from these newest capabilities promise to be greatest. Cities have a scale that more easily justifies the necessary investment. The increasing trend of urbanization [¹³¹] also means that cities

¹³¹ 80% of the UK population live in cities, with over 30% in the 10 largest “Smart Cities: Background Paper”: Department of Business Innovation and Skills, October 2013

face unique challenges due to aging, if beautiful, Victorian infrastructure that is nearing its capacity. Smart city approaches can help manage these infrastructure resources more effectively.

Government, under the leadership of BIS, has made some progress on Smart Cities under the brand name Future Cities but much of this activity is driven by technology companies aiming to build a future export market for smart city technologies. More detail can be found in Appendix D.

This technology-driven approach creates risks. At the extreme we can imagine 2 fictional future cities:

- City One uses proprietary technology designed by an alliance of a major supplier and public officials. The major supplier has built several models of this city in different countries around the world. The city authority collects information on its citizens through smart meters, pervasive CCTV, number plate recognition and in-car systems. Digital enclaves provide superior Internet access and digital services to those people and businesses that can pay for it while other areas are poorly served and become no go areas for the privileged. The city uses data to make choices for the citizen that enable the city to operate more effectively. The city and technology are in control.
- City Two develops digital services openly and transparently through co-production with its people, communities, charities, universities and private sector to create greater opportunities for all. Technology supports the services. The services are right for its people. It has not simply copied what exists elsewhere: it has understood and adapted them. The city has pervasive broadband access, effective integrated transport systems and pleasant public spaces where people can meet to work, shop, socialize, educate or entertain themselves. Every person can choose to participate.

We need to ensure that our cities look more like the latter. Some of our previous recommendations will assist with this: focusing on the major issue with digital inclusion, better use of social infrastructure, working with people and communities to develop people-powered services. But we also need to ensure that the technology drive of smart cities supports real public services.

Case Study – The Chicago story

Chicago has invested significantly in the Smart Cities concept, following the vision of its forceful mayor Rahm Emmanuel. They are now seen as one of the leading examples of a Smart City, both in the US and internationally.

Chicago recognized that a smart city will not be built in a single political cycle. So the responsibilities and expectation for both digital service development and the release of data has been embedded into the cities organisational structure. Different political parties may have differing priorities for service development but the underlying need for digital to enable these services remains constant.

A key theme in their approach to Smart Cities has been to identify and address problems of digital access and actively engage with the population. They are targeting areas of deprivation and providing Wifi and broadband access. The administration release large amounts of data as open data. They regard the data as the people's data, rather than owned by city departments or politicians.

Citizens are consulted and involved in various ways. For the "Chicago: City of Big Data" exhibition they used a room sized 3D model of the city as an interactive platform to display open data. Large digital screens display the "Chicago Dashboard", described as

an open, civic resource to display updated information about the city for areas such as housing, employment, transport, environment and planning.

Citizens are actively engaged in service design and development. A number of regional community groups around the city are engaged when building, designing and testing new services, with more than 500 volunteer testers available in Civic User Testing Groups across the city to test services in development.

Using people-powered design techniques will help with this but - given the numerous parallel activities created by the BIS funding with the aim of creating an export market - there is still more to be done.

Building a blueprint for smart city technologies may assist with this challenge. Such a blueprint will seek to issue guidance while not imposing rigid rules. Rigid rules stifle innovation and lead to services that may be perfect in one area but inappropriate for another.

The blueprint should be enabling, adaptive, flexible, open and people-centric. It should be developed collaboratively with local authorities, the private sector, people and communities and it will be a blueprint that evolves and adapts over time. Not a static 100-page PDF that is read once and then discarded.

Any city, region or local authority that chooses to invest its efforts in taking advantage of these technologies could use the blueprint. We trust that they choose to do so as the evidence base proves the benefits. If not then that is what local accountability is for.

The blueprint should reflect the public services that are provided to local people, for example using the ESD standards [¹³²] or the departmental delivery structure of local authorities; but also reflect the wider set of activities that occur within our cities. It must be about the city as a whole, not just the services that the public sector provides.

But to enable reuse and integration the blueprint would also need to show a technical architecture [¹³³]. The next chapter explores this area in more detail.

Innovation: creating space and focusing on real problems

We want to be clear that this report is not intended to address innovation policy for the UK, or even all of the innovation in the public sector. Innovation is a far wider topic than digital. But we thought it was worth making a few observations about how innovation within digital government can be strengthened as, whilst some organisations are using these techniques, many are still not.

Innovation rarely happens on a national or global level. It tends to start smaller. The idea might be a small process change, a tweak to some wording, or something more complex. The public sector has to be open to these innovative ideas and that they can come from anywhere. It has to be prepared to take the occasional risk.

There are times when a public sector organisation will have a problem for which it needs an innovative solution. In this case the public sector might need

¹³² <http://standards.esd.org.uk/>

¹³³ Such as that needed for the Internet of Things (IoT) https://futurecities.catapult.org.uk/news-template/-/asset_publisher/Qw0bKmomFN4q/content/mk-tvws/

to release information about the problem to help people come up with potential solutions. This might include a description, some desired success criteria, some data, some thoughts on user needs, some documentation on capabilities.

Openly releasing such information can help stimulate creativity and innovation to solve the problem.

The organisation will then need to bring together a small group of people to test and develop some ideas: some potential users, a support community, some of the agencies and frontline workers that deliver the service, some of the back-office staff who have to build it. It will vary, there is no simple list, but we have to bring together the people involved to see which ideas are viable.

Typically people have to be brought together face-to-face: that is where ideas really spark. Ideas and innovation created locally between people, communities, public sector workers, researcher and the complex range of agencies that they all work with.

Openly publishing the results of that discussion is necessary even if there was no progress. It may be that one organisation decides not to proceed with an idea but another finds it the perfect fit for their problem. Or that another organisation wants to join with the originators and combine resources to jointly solve the problem.

Recommendation 22

Priority: low

Use public spaces and open data to stimulate local innovation

Using public spaces and social infrastructure for such purposes is recommended. It makes them living spaces used by the community.

It helps bring digital communities to life when we move from and between the digital world and the real world. These communities will contain a range of people from communities, the mixed economy and the private sector. This mix creates a fertile ground for ideas.

Recommendation 23

Priority: low

The public sector should run innovation challenges to help solve real problems

There has been much focus on 'hackdays' where digital specialists come together. This has been a wonderful training ground but the term is off putting to many people. By deterring these people the day can lead to a focus on technical solutions built by technical people and not necessarily solutions to real problems built with all stakeholders.

Moving from 'hackdays' to 'challenges' will be beneficial in the future. These challenges could be set by the public sector organisation based on policy priorities; or the public could suggest them. Setting up a challenge with

information and data about the problem, the capabilities and limits of the public sector, with information about user needs is key to providing focus.

In some cases these challenges might require funding to compensate people for their time or to provide sufficient capacity to create a sustainable solution. The funding might come from the public sector organisation's own innovation fund; it might come from a partner such as Nesta or a charity; it might be crowdfunded [¹³⁴].

By running challenges focused on real problems, using public spaces and public information, by using active and engaged communities we will unlock the best of creativity from across the country.

To take an idea from its original concept, through a viability check and in to life (where it still might fail) takes time and money. People choose to invest that time for differing reasons. Some will spend time out of a feeling of ethical responsibility for the public good. Others might look for a financial return and request to retain some or all of the intellectual property.

It is necessary to consider the sustainability of the idea. Can it scale? If works can it be taken to other regions and organisations? This challenge will be eased if there are common, open standards across the public sector. We will discuss this problem in the next chapter.

These recommendations, taken together with those elsewhere in the report, will lead to improvements in local digital services in the period to 2020 and beyond.

Putting local authorities, cities and city-regions on this upward trajectory is essential given the serious challenges many face in 2015. But to be successful and to create the types of inclusive communities people want to see in the future these initiatives must be truly people powered. Engaging citizens in designing and developing services that they care about to create the space that they want to live in.

¹³⁴ <http://www.governmentcomputing.com/features/kickstarting-innovation-in-government-it-4369791>

Reducing Cost with an Open Digital Architecture

Introduction: the current state of government digital architecture

The diagram below shows the current published “reference model” for government architecture [¹³⁵].

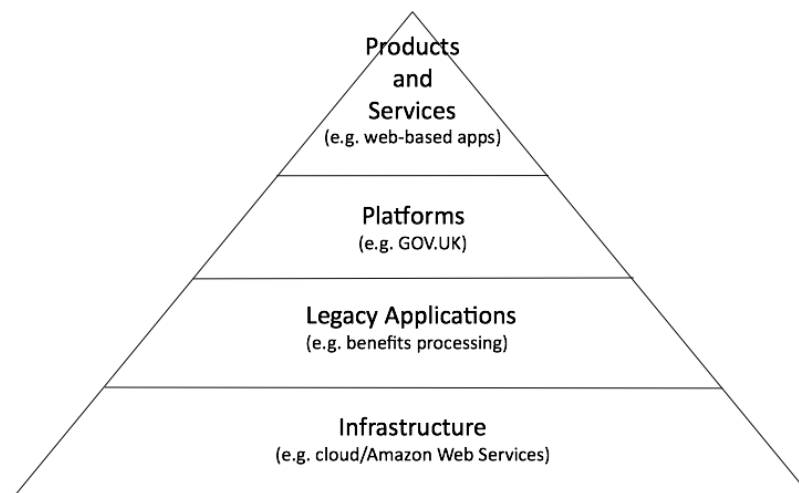


Figure 6 – government architecture reference model

“We agree that taking a component (or modular) and service-neutral approach is the appropriate way to drive transformation of service delivery.... Open standards are essential for a component-based approach to work.” – Local Authority

On the page where it is published this diagram is described as illustrative, and there are some fine words describing what an architecture should be, but there is no other published model. This does not represent a coherent or detailed model of systems architecture.

A systems architecture should offer a clear formal representation of the different components in a system, describing their precise relationships and hierarchy – and enabling new products and systems to be developed easily and compatibly with existing systems and their processes.

The diagram above, in these terms, can be seen to be incomplete and significantly lacking in detail. It is primarily focused on technical elements, for example, excluding both process and data components. Its pyramidal structure is meaningless: it could equally be re-drawn as a square, circle or star without loss. It offers little meaningful information to those seeking to understand the common principles underpinning public digital services.

Compare this diagram from the 1990s of Technical Architecture Framework for Information Management (figure 7), which – as any diagram of systems architecture should – displays clear relationships between all the distinct components comprising a particular system:

Given the inadequacy of the current approach to systems architecture, it is little wonder that so much open public data varies in format – making it needlessly difficult to compare and combine – or that geospatial data, which number among the most important of all public data sets, is not available as

¹³⁵ <https://www.gov.uk/service-manual/technology/architecture.html>

open data at all. No one knows how the data is produced, its provenance, how it is processed, where it is stored, who has access and where it is published.

This inadequate approach is also one of the reasons why different organisations serving public needs operate in silos and struggle, at a technical level, to integrate services, and to share data (with the right principles and methodology). It is why the government finds it hard to switch suppliers at the end of a contract: what interfaces does the old system support, how is it integrated, how does it function?

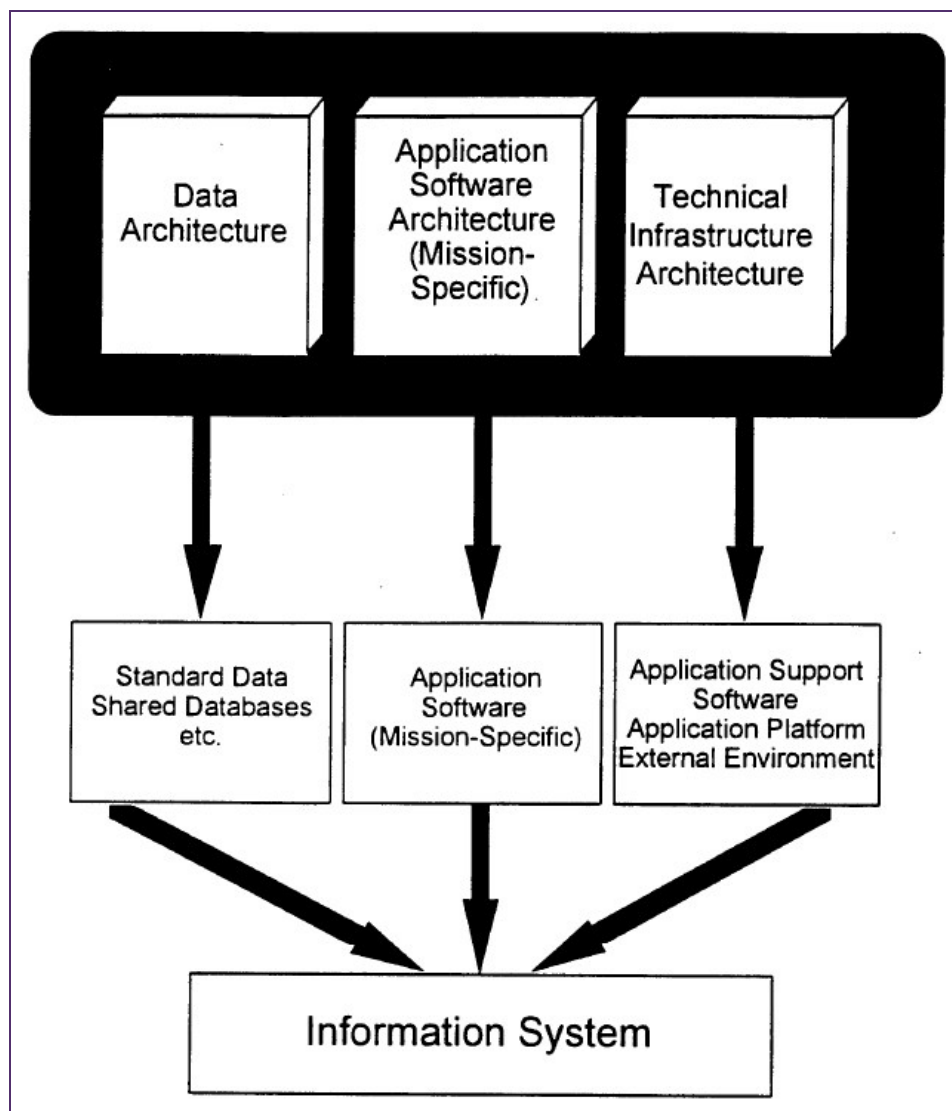


Figure 7 – Technical Architecture Framework for Information Management

None of this should be news. The current government has itself realised that it has moved too slowly on defining architecture, on opening up APIs and on moving towards a common platform with reusable components. During the life of the review this was recognised by both the Cabinet Office [¹³⁶] and the Head of the Civil Service [¹³⁷]. The key question, though, is how precisely a properly defined open digital architecture can change this – and what obstacles and complexities lie in the way.

¹³⁶<https://insidegovuk.blog.gov.uk/2014/09/15/current-state-of-apis-on-gov-uk/>

¹³⁷<https://civilserviceleaders.blog.gov.uk/2014/09/26/more-than-just-websites/>

The case for open digital architecture: reducing costs, providing better services

In the previous chapter we made the case for an increase in collaboration and reuse between local authorities - and noted that the lack of open standards and a common architecture made achieving this difficult [¹³⁸]. Here are three typical examples of how these difficulties are experienced across the UK:

- A local authority creates an excellent planning service. A neighbouring authority wants to reuse this service. To do so, however, it would need to rework and customize the service completely: not simply to match its citizens' local needs, but also to integrate the system into its own unique systems architecture. Due to the cost, the local authority remains on its old service.
- A community group uses open data to address a problem in one authority area. Seeking to repeat its success elsewhere, it turns to a nearby authority - only to find that their open data is in a different format. The community group lacks the skills to change this new format, and therefore fails to expand its scheme.
- A small business creates an innovative solution to a problem faced by many local authorities across the UK. It would like to bring this solution to the market as a true, multi-tenanted cloud service: that is, a digital service which multiple authorities access and adopt from a single common hub. Because of the variations between each authority's pre-existing computer systems, however, the small business is instead forced to wait until it can achieve the scale to employ multiple teams to customize its solution individually for every authority. At best, it is likely only to provide its solution to a handful of authorities.

Similar examples can be described within central government, or between central and local government:

- A government department creates a new service to handle inbound requests from citizens for passport applications. If a successful open systems architecture were in place, another department could simply reuse this for handling driving licence applications. Instead, because there is no common architecture, it pours time and resources into building its own
- A local authority wants to launch a new service that adheres to data sharing principles, but that needs to link to data from both central and local government. It finds, however, that these two sets of data use different unique identifiers and thus cannot be linked.
- A government department builds an identity verification service to allow people to verify their identity when raising passport application requests; 12 other government departments and 443 local authorities create their own similar services, every single one working more-or-less from scratch.

The last example is something that the current government is trying to resolve with the new Identity Assurance service, GOV.UK Verify. Once it is complete,

¹³⁸ This chapter only gives a summary overview of what architecture and platform means. For those readers wishing to understand in more detail how these concepts can work in a government context we would recommend the following further reading: Tim O'Reilly "Government as a Platform"; Alan W. Brown, Jerry Fishenden, Mark Thompson "Digitising Government" and "Digital Government at Work" by Ian McLoughlin, Rob Wilson and Mike Martin

this service will be able to be used by any public body to verify identity [¹³⁹]. Rather than all public sector organisations building their own solution they can reuse what has already been built [¹⁴⁰].

Self-evidently, this is an excellent idea, and the Identity Assurance service is a perfect example of the type of benefits that an open architecture can provide.

A common problem is being solved once, and the resulting solution is then being used many times. Once it is live, the Identity Assurance programme will create an open standard interface and a reusable component that the whole sector can use. It will reduce costs, increase interoperability and make people's lives easier.

In other words, the standardised approach that a shared open architecture brings is absolutely essential if government digital services are to approach anything like their full potential. It will reduce the time to launch new public services; it will enable high-quality components to be used and re-used across multiple public services with maximum ease; it will reduce the risk of government and local authorities being locked-in to proprietary components, or to particular suppliers; and it will eliminate needless repetition and reduce costs.

So why isn't all this already happening?

While its benefits may be indisputable, building an architecture and set of standards is extremely complex. Many organisations have tried and failed – and it is vital not to underestimate the challenges and complexities involved.

Good architectures and standards have been successfully built, however. To give just three simple examples: (1) the telecommunications services, (2) the Internet, and (3) the World Wide Web.

These are things that every digitally included individual enjoys – and they are all based on common sets of standards that have been incrementally developed over the years. Mistakes were made during this process, and occasionally over-rigid documents will have been produced (immense, exhaustive and exhausting manuals are one of the traditional hazards of working around systems architecture) - but the results are there for all of us to see and enjoy.

Of course, a government needs to provide a wide range of services far more complex than most private sector organisations: a complexity resulting both from the multi-layered nature of our democracy, and the need to provide services to everyone in society. Any open architecture and set of standards must be able to support this range, and the diverse feedback loops that these services create.

The challenges of architecture: watching, learning, improving

We need to learn from the failures and challenges that other governments and individual public sector organisations have wrestled with if we are to tackle this problem.

"HMRC systems are 125+ interlocking processing systems, a few of which may pre-date the Internet! To deliver government on an App is likely to lead to de-commissioning and re-write, or system failure and re-write" – Trade Union

¹³⁹ In fact it goes even further than this. The partners in the identity assurance service can also verify identity to organisations outside of the public sector. This opens up a realm of possibilities for the private and third sectors that are outside the scope of this review.

¹⁴⁰ The identity assurance service has an economic model to handle cost transfer to the partners

In the following table we thus lay out some of these challenges - and potential ways to address them. This is only a limited selection of the thinking that would be required to effectively implement architecture across the public sector. We include it here not so much to suggest an imminent solution as to indicate the scale of the challenge [¹⁴¹] and the directions progress might take.

Challenge	What Has Happened in the Past	Potential Ways to Tackle
How to define an architecture and associated set of open standards?	Rigid and expansive documents produced by committee that are then imposed through strict governance.	A set of components (technical, process, information) that use a common language and are loosely linked and iteratively developed by an active and meritocratic community that includes delivery expertise. Open standards that adhere to an agreed set of principles [¹⁴²]
How not to stifle innovation?	Delivery teams are inhibited by strict governance and detailed architectural guidance.	Encourage governance that allows innovation and trials of new techniques. Evolving best practice can be fed back into the standards.
How to allow each public sector organisation to set its priorities?	Standards that are set in the centre and mandated on other organisations leading those organisations to fail to meet people's needs. Or the failure to set any standards due to fear of over-centralisation leading to each organisation developing its own architecture and hence the failure to deliver on the promised savings.	Finding the right balance of tight and loose standards to allow public sector organisations to take advantage of other organisations' developments whilst moving at their own pace. A federated architectural model. The balance should allow both the centralized approach of a site like data.gov.uk but also a localized approach such as the Leeds Data Mill [¹⁴³]. Governance must include representation from across the diverse public sector.
How to preserve privacy and security?	Centralised systems and databases that bring data to a single point creating privacy risks. Rigid security standards that stifle innovation	Federated solutions with standards-based interfaces conforming to a set of agreed principles as defined by our "Data and Society" review Greater use across the sector of security standards in GDS Service Design Manual. Consideration of the security needs of services that use Government APIs
How to move to an architecture?	Big-bang approaches have been tried and have mostly failed. Big-bang approaches inhibit non-IT driven change whilst they are in progress.	Allow gradual implementation by the right balance of tight and loose standards. Focus efforts on areas where service transformation is in progress, for example integrated health and social care or changes bought on by devolution, and build the architecture through delivery projects that support and enable the new services.
How to steer where investment should be made or avoided?	Effort has gone into making reusable components that are never actually reused.	Bringing in external expertise to provide lessons learned from other sectors.
How to reward and motivate organisations and individuals to reuse?	Creating reusable components takes more effort than developing components that are only used once. Organisations are reluctant to spend their stretched budgets on items that will not benefit their own organisations so choose to focus on their needs.	Governance that encourages reuse unless there are compelling reasons (innovation, particular requirements, timescales) for creating a new component.
How to remain focussed on people's needs?	Concentration on technology rather than on providing public services.	Remain focussed on the needs of everyone and the desire to build services centred on people, rather than centred on government.

¹⁴¹ The further reading at the start of the chapter is a good starting point for those looking for more detail on these challenges

¹⁴² <https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles>

¹⁴³ <http://www.leedsdatamill.org/dataset>

Components: some of the architecture already exists

As well as Identity Assurance there are a number of other components either already in existence or being developed. We have touched on some of them before:

- The Public Services Network (PSN) that provides a common approach to voice and data connectivity across the public sector [¹⁴⁴]
- The GOV.UK publishing platform for presenting content and services online
- The GOV.UK performance platform for reporting on service performance
- The Government Digital Service's Service Design Manual
- The National Information Infrastructure (NII)
- The local government data schemas supported by the Local Government Association (LGA)

Although we are not aware of an authoritative list we are sure that this could be developed over time [¹⁴⁵].

Some components in the list above are software, some are hardware, some are data/information, and others are processes. This mix of types of component is common in architectural models used in other sectors [¹⁴⁶]. The blueprint for a future city that we described in an earlier chapter is also part of this world and would map to a well-defined architecture.

Platforms: building from architecture to a common platform

It is possible to go further than architecture. In recent years the language used for this area has been evolving. People tend to talk of 'a platform' or 'a platform business', Amazon, Google and Twitter are all platform businesses.

"They have developed a core technology infrastructure that others have then built upon, driving the success of the platform and meeting far more users' needs than the original provider could have done on their own." [¹⁴⁷].

Such platforms provide standardisation, scalability and are driven by data. They operate openly. Exposing open data and APIs so that others can integrate and innovate around the platform.

Businesses like CityMapper or Zoopla are great examples of UK companies that have innovated around public and private sector platforms, open data and APIs. If we build a more common platform this will enable more innovation to occur.

A smart platform will expose data to help people spot patterns of behavior and determine where things can be optimized. If we had a common platform for government this data would provide significant advantages.

It would enable local authorities to quickly spot improvements in behaviour in one authority so that they can repeat successful interventions in their own. It

¹⁴⁴ <https://www.gov.uk/public-services-network>, the NHS has its own standard N3 <http://n3.nhs.uk>

¹⁴⁵ Here is an example from central government <https://gds.blog.gov.uk/2014/08/22/how-sharing-helps-us-improve-digital-services/>. Meanwhile this site was built to make sharing easier in local government: <http://www.civicexchange.eu/apps>

¹⁴⁶ Those who love detailed architectures may wish to look at the TMForum Framework guidelines for telecoms operator's business, software and information architectures. We would not recommend anything quite so detailed but it is interesting to see what has evolved in other sectors.

¹⁴⁷ <https://www.gov.uk/service-manual/technology/government-as-a-platform.html>

would allow the public sector to identify common needs that are being served in disparate, costly fashions and develop a common component to reduce costs. It would allow the public sector to group together to purchase true cloud services, ones that have a subscription model, and leverage the scale and the ability of open standards to reduce lock-in and reduce costs.

These advantages come from the scale, standards, openness and data that a platform can provide.

Building components, platforms and architecture

As we noted above, the Government is creating a target National Information Infrastructure (NII). The National Information Infrastructure will provide common language and links between the most important datasets in the country. For example it would authoritatively link geospatial data, to census data, to public sector performance data.

Initially Government attempted to produce the NII in a top-down model with government departments being asked to list all of the datasets that they hold and those that they think should be open. ^[148] This was causing neglect for those areas of the NII that should not be open - for example those that may contain restricted personal data ^[149].

Based on feedback from the open data community the approach has now altered and the Cabinet Office have run a series of workshops to start gathering people's needs and thoughts ^[150]. Attendees at these workshops have come from both other parts of the public sector and from outside the public sector. This community can now work with the Cabinet Office to gradually grow the NII.

This is a welcome change of direction. The NII is fundamentally a part of the information architecture of the nation; it is not a subset of open data. The private and voluntary sectors could be contributing new datasets or describing existing datasets within that structure ^[151]. It should be driven by people's needs.

But the initial approach displays a mind-set that we can also see with technical components within the public sector. There are limited examples of reuse between central government, local government and other bodies such as the NHS. There are few examples of people's contributions to these components from outside the public sector.

Yet just as with the NII it would be beneficial to accept such contributions.

Complex public services that are centred on people are delivered by a number of organisations. A jobless person receiving benefits and looking for a job may be interacting with: the Department for Work and Pensions both to receive benefits and to attend their local Job Centre, the local authority who are providing housing benefits, and the Citizen's Advice Bureau who may be

¹⁴⁸ <http://mapgubbins.tumblr.com/post/68876431091/evaluating-the-uk-national-information-infrastructure>

¹⁴⁹ It also caused neglect for areas of the NII that are not owned by the government. One simple example would be the location of 'last mile' telecoms infrastructure that provides our homes and businesses with access to fixed and mobile broadband services

¹⁵⁰ <http://data.gov.uk/blog/revisiting-national-information-infrastructure-workshop-1-definition-and-scope>

¹⁵¹ <http://www.statlife.org.uk/opinion/1778-it-s-time-for-the-private-sector-to-release-some-open-data-too>

supporting them if they are experiencing problems with receiving those benefits.

Meanwhile, their Housing Association or other landlord will be providing tenant information and will need to receive the housing benefit. And this is just the start of the list. Similar lists can be produced for people receiving health or social care or a myriad of other complex services.

That person will benefit from those organisations working more closely together and providing integrated services. A common platform based on open standards can support this model but it needs to be gradually built whilst listening to those organisation's needs and the needs of the people those organisations provide service to.

As the open source world has shown, such platforms can also be collaborative, with organisations working together to build common components that meet both their needs. Perhaps central government and local government can start by working together to expand GOV.UK Verify to support local authority needs?

The challenges are considerable, but there is plenty of evidence that people are keen to contribute time and skills where it contributes to societal good – and when the parameters of progress and success are clearly defined. Consider the approach that the open data community is taking by working with the Cabinet Office to develop the NII; or some of the approaches that can currently be seen developing outside of the public sector [¹⁵²].

Government does need to remain the final decision-maker. It is responsible and accountable for delivering public services, but this role can still be performed alongside building open and meritocratic communities that allow others to contribute. This approach will also not work for every component, some are critical public services, but as with the NII this avenue is worth exploring.

“A holistic approach is needed...It is necessary to consider people, process and technology. In some ways, technology is the most straightforward, and people and processes are likely to be the biggest challenges” – Local Authority

Vision: moving forwards

These are significant risks and challenges, and more may be identified, but this does not mean that we should not be heading in this direction. Instead we can plan mitigating activities and proceed with knowledge of the risks that we are accepting.

The current Government has hinted at a direction of travel towards a common architecture and a platform but has made no firm statements and has made little progress in defining common architectures, open standards, or the principles for defining such a platform.

This is a unique challenge but the potential benefits in enabling reuse and encouraging public sector organisations to work together are too great to ignore.

¹⁵² Two simple examples are the Wikipedia and Mozilla communities

Recommendation 24**Priority: high****Government should develop a common architectural model and platform based on open standards.**

The Cabinet Office would be the right organisation to lead on such an initiative but must collaborate closely with other stakeholders, not impose a single view.

We would expect that it would need to develop and work with a wide community to understand existing components and to produce a view on how to progress down the platform path.

The first step would be to engage with people who have proven success in developing architecture and reuse in both the private and public sector to define a roadmap of what is possible and to shape the first phase of a journey towards a leveraged, flexible, enabling architecture.

Creating Better Outcomes by Building Digital Partnerships

Introduction: spending money to create the right outcomes

Governments need to buy things from suppliers - be it staplers, pens, paper, telephones, computers, electricity, bricks, roads or hospitals. Government does not build these things itself it buys them in from the outside. It does this because it can be the best way of delivering services. Why would government own a pencil factory and make its own pencils when instead it can buy it from a firm that specializes in making pencils?

“Procurement processes are still hugely more time- and resource intensive than for the private sector: procurements which take literally minutes for the private sector can take weeks or months for the public sector.” – Small Company

In the world of digital government, those services could be commoditized items such as a desktop computer, a telephone, an Internet connection, cloud hosting or a desktop productivity application. Staplers, pens, paper and electricity are similarly commoditized – they are easily described and bought in simple, well-described units: one hundred pens, one hundred telephones, one hundred computers, or one thousand units of electricity to power the computers for a year.

The services that a digital government buys can also be more complex such as a new website, user research or a payroll application. Sometimes government might choose to do these things themselves: sometimes they might choose to buy from someone else – because of capacity or particular skill requirements.

These purchases cannot easily be described in units. They need a more developed and informed discussion between government and the supplier to come to an agreement on what is being bought and how it is being delivered. With a selected supplier this discussion will continue all the way through until the delivery is completed, for example for the full life of a payroll application or website.

Procurement is the term used for the overarching process that includes the act of buying things from suppliers. Procurement typically also includes activities such as training for staff, along with activities between buyers and suppliers such as market research, negotiation, frameworks and vetting.

These activities are intended to help people who are making the buying decisions to make informed decisions and get better outcomes from the process, to be able to satisfy the needs of the people that we are providing public services to.

These external suppliers (whether they be private or third sector, large or small) can be seen as part of the public sector's delivery capability.

It is vital to spend this money in an informed and effective fashion. If we can reduce this external spend, just as if we can reduce the internal spend, then this frees up money to be spent in others areas such as improved frontline services and improved digital inclusion.

As well as spending this money more cost-effectively, this chapter will consider how the money spent on digital technologies can be used to support desired outcomes. All political parties have expressed a desire to spend more money

with smaller firms to increase innovation and create more economic growth. Labour has committed to creating a Small Business Administration and support to assist with this challenge [¹⁵³]; and is also committed to support social enterprises.

How can we spend more of the digital money with both small firms and social enterprises? Can digital help other areas of government spend more money with these organisations?

Changes: how procurement and needs have evolved

Historically, large suppliers on large contracts have dominated public sector digital procurement. These contracts typically ran on long time periods and supplied services that were specified at the start of the contract: the classic ‘waterfall’ delivery model. This was felt to be the most appropriate way to procure digital services. A similar approach used to be seen in the private sector. Procurement approaches and frameworks supported this need [¹⁵⁴].

In 2010 the current government decided to tackle the financial challenges through a number of contract renegotiations and cancellations. Initially hailed as a significant source of savings it is clear that the true picture is more complicated. To give just two of the examples that came to light in the summer of 2014:

- The flawed cancellation of the e-Borders contract with Raytheon recently cost the taxpayer £223.5m [¹⁵⁵] on top of the £259.3m that was written off by the decision to cancel and not retain any built assets
- In a recent review of HMRC’s Aspire contract the National Audit Office [¹⁵⁶] stated that “pressures to find cost savings in the short term led HMRC to trade away its negotiating power and hindered its ability to get strategic value from such a long-term contract”

It was noticeable that these activities primarily occurred in central government. Just as the Aspire negotiations led to a supplier using its negotiating power across the life of the contract, we would speculate that large suppliers with a presence across the public sector, and a need to retain margins to satisfy shareholders, could have flexed their pricing models across the whole of the sector. Renegotiations of long-term contracts to meet short-term objectives can lead to such unwanted outcomes.

Outside of the public sector we have seen a rapid change in procurement with the growth of agile delivery techniques, open procurement models, online marketplaces and the rise of a wide range of new technology and purchasing models such as cloud services that can be paid for by subscription.

The public sector has started to adopt many of these changes.

“The public sector has little data and extremely limited understanding of the performance of its software system suppliers, which is a glaring weakness in its ability to manage them” – Civil Society Organisation

¹⁵³ <http://www.labourbisteam.org.uk/umunna-labour-would-set-up-a-british-small-business-administrati>

¹⁵⁴ A less charitable interpretation would be that rather than the delivery needs driving procurement, the procurement processes helped create the methodology and supplier market. Where possible we do like to think charitably and positively.

¹⁵⁵ <https://www.gov.uk/government/news/home-secretary-letter-on-the-e-borders-programme-arbitration>

¹⁵⁶ <http://www.nao.org.uk/report/managing-replacing-aspire-contract/>

To enforce adoption the Cabinet Office has implemented a number of procurement 'red lines' [¹⁵⁷] as part of its control over central government technology spend.

- No IT contract over £100 million in value – unless there is an exceptional reason to do so
- If a company has a contract for service provision, it should not also do the service integration for that service
- No automatic contract extensions
- New hosting contracts will not last for more than 2 years

These 'red lines' could usefully be expanded to cover some of the recommendations we have made elsewhere in the document: for example the release of open performance data or the use of open standards and a common architecture. These are items that should form part of contract negotiation.

The 'red lines' also work alongside delivery governance by Government Digital Service (GDS) to enforce best-practice delivery techniques. As part of these best-practice delivery techniques, GDS has led the drive towards agile delivery within government both using its own staff and bringing in external support where required.

The Cabinet Office does not have the mandate to enforce these rules on the many organisations outside central government: for example, local government, the NHS or police forces but many public sector organisations have been choosing to follow this path. More organisations could usefully do so although they should be careful to use the right methodology for the right task and adapt some of the red lines, for example contract value, to meet their own needs.

An agile approach has an impact on procurement. Contracts and requirements are no longer specified in fine detail upfront but instead needs are gradually understood over time.

New approaches to procurement such as G-Cloud, the Digital Services Framework and Local Authority Software Applications Framework have been trialled. Some of these approaches are showing signs of success: with others it is too early to tell.

The first two of these frameworks have taken agile, iterative techniques into procurement with regular refreshes and updates of the framework. This can have advantages and disadvantages. It allows new suppliers to regularly join the framework and allows gradual adaption to meet changing needs but it can also create uncertainty and cost for suppliers. When suppliers are small the cost of keeping up-to-date with ever changing frameworks [¹⁵⁸] can be a high percentage of their revenues and give a disincentive to enter the public sector. We would encourage this impact to be considered.

Those that have been successful account for a small percentage of public sector spend. G-Cloud accounts for monthly sales of £20-£30m with the majority of this spend in central government. G-Cloud is part of a "cloud-first" policy encouraging the use of cloud services models over and above traditional

"There is no overall design, no architecture, for the CCS frameworks, which is very badly needed. There are massive gaps and overlaps between the frameworks, which is terrible for both customers and for suppliers."
Small Company

¹⁵⁷ <https://gds.blog.gov.uk/2014/02/26/red-lines-for-it-procurement/>. NB: these 'red lines' are only mandatory in central government but are recommended best practice for other parts of the public sector. There is no variation in the guidelines, for example the IT contract size, based on the size of the relevant public sector organisation.

¹⁵⁸ Similarly security classification and security certification rules have both changed in 2014 causing costs for both the public sector and for suppliers.

computing services. Approximately three quarters of the monthly spend is on Lot 4, professional services [¹⁵⁹].

GDS has also built an online marketplace for G-Cloud. Previously known as Cloudstore this is being relaunched as Digital Marketplace [¹⁶⁰]. We received many opinions saying that Cloudstore suffered from being ‘stuffed’ with entries from some suppliers; while other entries simply used a large number of keywords. Both submissions and events during the review’s consultation process showed that suppliers mostly see Cloudstore an environment to market services and start a sales process, rather than one where a procurement decision would actually take place.

Meanwhile a vast number of other procurement frameworks exist. Following is a partial list of active frameworks. There are many, many more.

Buying Organisation	Sector	Framework Name
CCS	Central	Assistive Technologies – Telecare, Telehealth and Telecoaching
CCS	Central	Commoditised IT Hardware and Software
CCS	Central	Digital Services Framework
CCS	Central	G-Cloud III
CCS	Central	PSN Connectivity
CCS	Central	PSN Services
CCS	Central	Sprint ii
CCS	Central	Traffic Management Technology
Common Services Agency	Health	Technical Smartcard Consultancy
Lincolnshire County Council	Local	Telecom Network Goods and Services
ESPO	Local	IT Consumables
ESPO	Local	Local Authority Software Applications Framework
ESPO	Local	Computer Software
Procurement Scotland	Regional	Mobile Computing
Procurement Scotland	Regional	Desktop Computing

Figure 8: Procurement Frameworks (Source – Kable)

“A commitment through procurement to union recognition, equal pay audits, publication of senior salaries, paying their taxes in full – and of course making all contracts living wage would be welcome” – Trade Union

In addition to these frameworks there are cases where a purchasing activity falls under EU legislation. EU procurement rules are evolving with new EU directives being transferred into UK legislation by 2016 [¹⁶¹]. It will be important for the UK government to ensure that these new directives and the legislation transfer supports UK policy objectives. Some of the changes such as Innovation Partnerships and Most Economically Advantageous Tender (MEAT) rules [¹⁶²] could be used to accelerate some of the UK’s desired changes. For example MEAT could be used to support procurement decisions by local authorities that wish to preferentially buy from companies in their area to grow the local economy.

Meanwhile the Open Government Partnership has also launched a procurement initiative. The UK Government has committed to implement

¹⁵⁹ <https://www.gov.uk/performance/g-cloud>

¹⁶⁰ <https://gds.blog.gov.uk/category/digital-marketplace/>

¹⁶¹ <https://www.gov.uk/government/consultations/transposing-the-2014-eu-procurement-directives>

¹⁶² <http://www.euractiv.com/future-eu/parliament-approves-new-rules-pu-news-532783>

Open Contracting [¹⁶³]. We agree with the principles of Open Contracting - such levels of openness and transparency are to be welcomed - but we need to be careful of falling into the “cheaper is better” trap that a focus on price rather than performance can lead to.

It is typically the largest suppliers who benefit from such a situation as they can afford to put in a low bid to win a contract. This is similar to the public discussion about spending data: unless spend is linked to quality, performance and outcomes then procurement risks simply being a race to the bottom with public services, and hence people, suffering as a consequence.

Government has also implemented policies to improve procurement skills and to change organisational structures.

- All central government procurement has been consolidated into a single organizational unit, Crown Commercial Services (CCS) [¹⁶⁴]
- A Commissioning Academy has been established to increase public sector skills [¹⁶⁵], the academy is open to all of the public sector not just central government
- Outside of central government procurement has typically been devolved to the lowest possible level, for example local authorities or individual grant-maintained schools [¹⁶⁶]. Some of these organisations have chosen to form consortiums to share best-practice and create economies of scale, others have not been able to take this step

Frameworks: bringing change to the whole sector

The G-Cloud framework is proving a successful way to bring small businesses into the public sector but as evidenced by the slow growth outside of central government and the overuse of Lot 4, professional services, is not fulfilling its potential or delivering on its intent to increase use of commodity cloud services. The current government strategy appears to be to publicise the framework to other parts of the public sector rather than to perform research to understand needs.

There seems to be little recognition that the local government sector has a stronger track record of working with small businesses than central government, or that their needs may differ.

Recommendation 25

Priority: medium

Government should build on the G-Cloud framework but needs to increase use of commodity cloud services and actively research and understand needs outside of central government

For both buyers and suppliers the large number of procurement frameworks is an issue. A buyer could buy the same service through multiple frameworks, or

¹⁶³ <http://www.open-contracting.org>, <http://www.opengovpartnership.org/country/united-kingdom/commitment/open-contracting>

¹⁶⁴ <https://ccs.cabinetoffice.gov.uk>

¹⁶⁵ <https://www.gov.uk/the-commissioning-academy-information>

¹⁶⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/303528/Advice_for_buying_ICT_for_your_school.pdf

in some cases outside of any framework. A supplier can sell to the same buyer through multiple frameworks.

This overlap creates the situation where buyers and suppliers might assist each other to find the most advantageous framework for a particular engagement. This suits larger suppliers who are more likely to have gone to the expense of supporting multiple frameworks.

The volume of frameworks creates a cost on both buyer and supplier-side. Each framework costs money to setup and to enter. For small suppliers it can increase the barriers to enter the market. How are they to know which frameworks are likely to be effective for their offerings? How are they to know which frameworks their target buyers are actually using?

Recommendation 26

Priority: medium

Crown Commercial Services should publish a current and desired map of frameworks; working to rationalize and reduce the number of frameworks over time.

Online buying: an Amazon for the public sector

Online marketplaces are a well-established model outside of the public sector. The Cloudstore marketplace has supported the growth of the G-Cloud framework, but the current model appears suited to the needs of technical buyers in central government, rather than the needs of other public sector organisations or the desired outcomes of government policies.

There is no mechanism to search for suppliers in a given geographic area, there is little support for non-technical buyers (such as those in the education sector) and there is no ability to search for small businesses or social enterprises. Future policy requirements may include support for certain open standards, support for organisations offering ICT apprenticeships or proven integration with a government platform.

Recommendation 27

Priority: medium

Government Digital Service should build on Digital Marketplace to support the search needs of differing buyer groups, to incorporate additional frameworks, and to encourage searches aligned with government policy

“There is no process for engagement and improvement outside of framework competitions.” – Small Company

Similarly, there is no mechanism for a buyer to leave feedback on the quality or experience of dealing with a supplier. Making this information open will increase confidence and accountability.

It will provide additional guidance for the large groups of non-technical buyers in the private sector, such as those in the education sector, from whom support has been removed.

This feedback can be difficult to provide, there will be commercial constraints with some of the details and buyers may be reluctant to report bad purchases, but fundamentally this information should be open and transparent. We would recommend some experimentation to see if an appropriate model can be built.

Recommendation 28**Priority: low****Government should experiment with open, online feedback about suppliers****Small Suppliers**

Both major parties have set targets of 25% of government spend going to small businesses to increase both innovation and economic growth. Labour have also committed to allowing public sector organisations to reserve some contracts for social enterprise. Where possible spending money directly with these smaller organisations will be the most effective model, if a supply chain contains multiple parties then each can be expected to need to pay for overheads and create profit margins. The current government is expected to miss the 25% target so further action is required.

The reduction in the number of frameworks, increased use of frameworks with the characteristics of G-Cloud and improving the search capabilities of online marketplaces will assist with meeting these goals. The use of innovation challenges and open roadmaps, as discussed in previous chapters, will also open up new opportunities and routes for small organisations to engage with the public sector.

Despite this there will still be cases where procurement rules and legislation are too onerous, or where a contract is too large for a small supplier to work on its own and needs to work either as part of a consortium or with a large supplier.

We would expect that the new Small Business Administration that will be set up by BIS under a Labour government would assist with some of these challenges, potentially even creating a small business equivalent of the Compact between government and civil society [¹⁶⁷] to define the relationship, but we would also recommend rapid action on the supply chain relationships between large and small suppliers. These relationships are critical but many companies are unsure of how they could or should operate.

Recommendation 29**Priority: medium****Cabinet Office should develop and publish guidelines for how suppliers are expected to work together when multiple suppliers exist in supply chain.**

Government should also encourage large suppliers to publish their own codes of conduct/policy. While these may not be legally enforceable it will set a model for expected behaviour and provide a point of reference when suppliers form contractual arrangements or have disputes

¹⁶⁷ The Compact document can be found at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61169/The_20Compact.pdf while a National Audit Office review can be found at http://www.nao.org.uk/wp-content/uploads/2012/01/National_Compact.pdf

Partnerships: understanding each other's needs

Fundamentally all suppliers are working with the public sector to provide great public services, but it needs to be recognized that suppliers also have demands from their own shareholders and stakeholders.

These two drivers (better public services and shareholder requirements) cannot always be expected to align to the same goal. There is also a wider policy context with a government that wishes to rebalance economic activity across regions and be a world leader in technology and digital services.

When the current Government renegotiated large ICT contracts at the start of this parliament the language and debate became extremely heated. There appeared to be a desire to demonise all large suppliers rather than to highlight the bad while praising the good and hence showing what was desired. There were clear failings in the private sector - but the procurement decisions were themselves made in the public sector. We should aim to work together to produce those better outcomes rather than simplistically labelling all large suppliers as bad.

Part of the goal of a healthy approach to procurement is to increase the alignment between the goals of buyers and suppliers with both sides making informed decisions and acting with awareness of each other's needs.

This does not mean that the public sector should be trying to please private sector stakeholders. It means that the public sector needs to understand that the private sector needs to satisfy its stakeholders. It means that the public sector needs to understand that, for example, a small supplier has less capability to participate in a complicated procurement process than a large supplier.

For this private sector this means that it needs to understand the public sector's objectives and needs. If the public sector can be clear about these objectives and needs then it allows outside suppliers to move faster, it lowers barriers for new entrants, it will lead to better procurement and it will lead to better outcomes. If the public sector is not clear about its objectives then this will benefit incumbent suppliers who will be in a stronger position to understand needs through their existing relationships.

As an example of this we can look at much of the current work ongoing in central government where online digital services are being rebuilt. Developers employed by government are building many of these new services.

Government does not want to buy off-the-shelf components for these new services; it wants to build them itself using agile methods, either with extra people bought in from outside government or with its own staff. But it has decided that it wants to build the online components itself. It has determined that at the present time this will produce better outcomes.

Meanwhile, others parts of government are buying in different ways. Whether it be data connectivity via the PSN or hosting on a cloud platform we can see that government is thinking more in terms of commodities that it can connect to – and to match this it needs procurement and pricing models that suit.

These are just two examples. Things will change over time. Maybe a new round of innovation will occur in the hosting area, and government will decide that building its own data centres will produce the best outcomes? Given the growth of public cloud services this is extremely unlikely but the point is that

*“Admitting problems and seeking help to solve them should not be seen as a weakness – not admitting them or admitting them late definitely is “ –
Large Company*

“Agile methods have many merits and, within the context of well-designed programmes, can be highly effective for small projects, e.g. the development of web-based systems. But Agile methods are not a panacea.” – Civil Society Organisation

needs do change over time. Items that were custom-built can become commodities, whilst items that were seen as commodities can revert back to being custom-built.

Whatever happens, as we move towards open standards, a common architecture and a platform for government, it will become increasingly important that both suppliers and government understand what government intends to build both (1) in an agile fashion with control within government, and (2) what government intends to simply buy as a commodity from the market.

By setting this out clearly government will enable suppliers and the public sector to prioritise their activities.

Recommendation 30

Priority: high

Government should annually publish a forward-looking procurement strategy to signal its intentions and thereby foster an informed, diverse and flourishing market of suppliers

It will also be necessary to reset the unhealthy antagonistic relationships between government and some suppliers. There are reasons for these poor relationships. As media coverage of government ICT failures amply demonstrate many people were also extremely dissatisfied with the performance of some suppliers and with the performance of politicians and the public sector that managed them.

It is possible to drive a hard bargain while still remaining partners.

These recommendations will help improve procurement but we still need to consider public sector skills to help ensure that we have an informed buyer making good decisions and driving these hard bargains. The next chapter will explore this skills problem in the wider context across the civil service.

A Digital Civil Service for a Better Government

Introduction: a big challenge for the civil service

There are approximately 5.4 million people working in the UK public sector, of whom 2.8 million work in the civil service within central government [¹⁶⁸]. The people that work in the sector are incredibly dedicated. In the majority of cases they have chosen to work in this sector because they share a common ethos of working to make people and society a better place.

Unfortunately, technology is often a barrier to this ambition. Many public sector organisations use out-dated technology and hardware. Many organisations block certain websites and services, including those that the rest of society sometimes use to try and engage the public sector and voice their complaints. Meanwhile, valuable skills and experience have been lost from many areas thanks to decades of outsourcing, both of ICT and of whole departments and functions. This is equally true of delivery skills and first-hand knowledge of people's needs.

Moving to a new approach to digital - one that works for everyone - will require government to address these challenges. It will require the building up of new capabilities. Some roles might disappear but others will appear as a new kind of government is built; one that is fundamentally more responsive to people's needs.

A change to both skills and culture

We are not trying to tackle civil service reform in this document (that is a task for others) but this is a closely related topic. And investigating it begins with a two-fold question: what are we trying to achieve; and what needs are we asking the civil service to support to make this a reality?

In answering this, skills and inclusion come first. We need to bring basic digital skills to the whole population while continuing to build excellent digital services in central government. But we also need to focus digital expertise on services with a high social impact, including those with a combination of frontline and online services.

In parallel to this, we need to rebuild trust and revitalise data sharing and data analytics initiatives following a public review of our principles for using data. We need to inject a greater consideration of ethics into digital services and encourage greater public participation in both policy and service development; otherwise, there will be no rigorous underpinning or coherent civic basis for framing technology's promise.

¹⁶⁸ <http://www.ons.gov.uk/ons/rel/pse/public-sector-employment/q2-2014/stb-pse-2014-q2.html>

We need to increase the speed of digital transformation in local government through increased collaboration both locally, with people and communities, and also nationally, between authorities and central government. We need to build a common platform and architecture for digital government, whilst providing greater opportunities for small businesses and making more informed procurement decisions.

We believe that these activities will make for a better government: one that is more responsive and suited to people's needs. And we know that this change cannot happen unless government supports and works with its public sector workforce; and unless the public sector is seen as a place for those with passion and talent to work, develop new skills and help their society.

Understanding the challenge: low opinions of the public sector

Unfortunately, it is not always the case that the public sector is viewed as a great place to work.

Research performed for this review by Mortimer Spinks [¹⁶⁹] with technology workers showed that even where remuneration was the same across private and public sectors, 83% of respondents would choose to work in the private sector compared to 47% that would choose to work in the public sector.

The figure was even lower, 42%, for people who would choose to work for a private sector firm operating in the public sector. In the field of digital services, despite the awards being won and the progress being made only 46% of respondents were aware of current work on digital government, and only 16% of respondents thought that public sector work would add significantly to their experience.

Similarly, a report by Reform and Deloitte calls for “a more constructive narrative” and says that public sector roles are becoming unattractive [¹⁷⁰]. A journalist commenting on the report said “it’s becoming harder to attract, recruit and retain people for key jobs, because public sector jobs are now associated with stress, weak career progression and poor pay and conditions” [¹⁷¹].

As Michael Dugher MP pointed out in a recent Institute for Government speech on civil service reform, too many “civil servants are currently being made to feel like they are part of the problem, rather than part of the solution” [¹⁷²].

This is something we must challenge, both in government and across the public sector as a whole. The recommendations that follow are focussed on the areas of digital, technology and central government; but a similar set of recommendations could be offered across the public sector. After all, the most used public services are local ones, and integrating complex multi-agency

¹⁶⁹ Information from 2116 respondents to the 2014 survey on Women in Technology, the detailed results are published as open data here:

https://docs.google.com/spreadsheets/d/1PF8dVsQVPfmD_ljrKKF869zR5TdQ4bIP0zmoKcVYfXo/edit?usp=sharing

¹⁷⁰ The State of the State 2014: http://www.deloitte.com/view/en_GB/uk/industries/government-public-sector/state-of-the-state/index.htm

¹⁷¹ Jane Dudman writing for the Guardian http://www.theguardian.com/public-leaders-network/2014/oct/28/demoralised-public-sector-staff-creative-cuts?CMP=new_1194

¹⁷² <http://www.instituteforgovernment.org.uk/news/latest/michael-dugher-speech-civil-service>

people-centered services at the local level is just as exciting and rewarding as building a central government service.

We trust that these recommendations and the overall review will contribute to a wider debate on the public sector which, rather than concentrating on criticising past performance, instead recognises the challenges and opportunities that all organisations face when going through digital transformation. Our aim, ultimately, is not critique so much as challenge and inspiration: to energise the public sector and to make all who work in and with it feel that they can help to build a better government.

Competency framework: the need to recognise digital skills

The current Civil Service competency framework [¹⁷³] discusses the need for civil servants to be able to “improve policy implementation” using “alternative delivery models including digital and shared service approaches”.

We would suggest that this needs updating on two fronts: the civil service is not simply “implementing policy”, but is delivering public services; and digital is not an “alternative” delivery model.

Today, digital is a part of the way we all work. The people delivering services use computers, IT systems and telephones. So do the people receiving these services. A call centre is using digital technologies. A website is using digital technologies. Unless they are writing by hand, someone writing a document is using digital technology. The statement that digital is an alternative delivery model is like suggesting that “electricity” or “water” are alternative delivery models. We need to see digital as just a part of the way we all work.

We also need all of our civil service to have basic digital skills. We need senior staff who can work within and lead the major transformation programmes that digital is creating. Some departments are recognising this - for example DWP are building digital academies [¹⁷⁴] - but this needs to be a structured programme to attract, grow and retain skills across the public sector.

We can start by providing stronger recognition for digital skills in the competency framework.

“Better Ways of Working should be a core objective of the Efficiency and Reform Cabinet Committee and a Better Ways of Working cross-departmental team led by permanent secretaries and ministers should be established” – Large Company

Recommendation 31

Priority: medium

Complete the update of the civil service competency framework to recognize the need for basic digital skills at all levels and the ability to deliver on or work within transformation programmes at higher levels

Specialisms: the need to cultivate and retain digital experts

The lack of career paths for digital experts coupled with years of outsourcing has led to a scarcity of digital skills amongst senior staff. Many departments have recognised that they need to bring in digital expertise so that they can

¹⁷³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307630/Civil-Service-Competency-Framework-Jan2013.pdf

¹⁷⁴ <http://www.civilserviceworld.com/nelson-dwp-is-creating-digital-academy-to-grow-technology-skills>

build great services and can manage the complex transformation programmes required to modernize the organisations that deliver them.

Even where services are bought in from suppliers or service delivery is outsourced, it is necessary for the public sector to have sufficient skills and experience to be able to ask the right questions. Core skills such as procurement knowledge, change and technical programme management, digital architecture, and design are essential even if development and delivery are performed externally.

The growth of data analytics will also require government to focus on those skills. In the early days of exploring this area it will be important for organisations to build internal capabilities rather than be forced to rely on external organisations.

As well as classic digital and data analytics skills, other new roles will emerge as government becomes more digital, open and participatory: researchers to gather and interpret people's needs; designers to build beautiful services; and engagement managers to form digital communities. It should be possible for existing public sector workers to move into these roles with appropriate training and career development opportunities.

These are all valuable skills on the open market: an important point when it comes to the perception and desirability of public sector work. It is vital to attract and to retain good people, and this will need government to provide both the opportunity for skills development and competitive salaries.

Traditionally, senior civil service roles with higher salaries have required generalist policy development skills. In addition to these senior generalists, we must recognize the need for those with specialised digital skills - and for the higher

“Set up a dedicated Advanced Analytics Team (AAT) within the Cabinet Office, working closely with BIS, data protection teams, and CTOs to spread innovation, best practice and common standards”
– Large Company

Recommendation 32

Priority: high

Recognise the need for and value of digital specialists by offering appropriate salaries, training opportunities and building career paths to senior grades.

It may be appropriate to use the model of decentralized specialized communities such as the GSS (Government Statistical Service) or GES (Government Economics Service) for both professional development and as a community of common interest. GSS may be the right starting point for a data analysis specialism.

Basic skills: for all of the civil service as well as all of the people

We want to see government bringing basic digital skills to everyone – and the public, voluntary and private sectors all playing a part in this process. We naturally expect the private sector to focus on training up their employees without basic digital skills. Similarly, parts of the public sector will have employees without basic digital skills, and they too must be trained

Government has already committed to providing civil servants with access to the same digital tools as the rest of the population: modern computers, open Internet access and access to social media, for example.

But we should also be providing dedicated training to all public sector staff – from Permanent Secretaries to frontline workers - in basic digital skills, in digital thinking and in approaches to service transformation. The transformational opportunity that we see can only be achieved if the whole sector can take part: everyone needs to be part of the solution to these challenges.

Putting this training in place will help us to deliver on the major challenges of digital transformation; will improve the lives and skills of people in the public sector; and will provide public sector staff with the ability to help the people they interact with outside the public sector to gain those self-same skills. Frontline workers will be some of the best champions to help the UK become an inclusive digital nation.

Recommendation 33

Priority: medium

Provide 5 days of digital training to all civil service staff during the next Parliament and encourage and support frontline workers to become champions for a digital nation

This could be performed by using existing training days and by using updated material produced by GDS for central government digital teams. The material should also be made available to non-central government public sector organisations for their use.

“A single, senior individual as leader would help to co-ordinate policy and raise the profile of the digital agenda across all parts of government. This would also provide a senior challenge to departments on their progress, and a stronger position for securing resources” – Professional body

Open on the inside: breaking down barriers

We have already stated the need for more collaborative working across government. This starts with leadership from the top that breaks down organisational silos so that our best experts can work together to tackle complex problems with high social value. The need to break down silos appears to be well accepted [¹⁷⁵].

Decentralised communities of specialists will also help to break down these silos but there are also hierarchical boundaries within government. This is natural in every large organisation.

To go further, to help ideas surface and be treated equally regardless of which grade they come from we should allow civil servants to anonymously submit ideas and comments on programmes.

Recommendation 34

Priority: medium

Provide civil servants with the ability to anonymously comment on projects and provide ideas for improvements

¹⁷⁵ <https://civilserviceleaders.blog.gov.uk/2014/09/26/more-than-just-websites/>

"Achieving organizational learning requires staff continuity, not allowing Senior Responsible Owners to change at any 'appropriate break' in the life of an ICT project." – Civil Society Organisation

Centres of excellence: delivering projects with high social value

Central government has built a centre of excellence for digital services (GDS – Government Digital Service). It is also in the process of developing centres of excellence for procurement (CCS – Crown Commercial Services) and project delivery (MPA - Major Projects Authority [¹⁷⁶]). Responsibility for delivery still lies with individual departments - but these groups provide governance, principles of best practice and (in some situations) people to assist with delivery.

CSS is relatively new, having only been created in the fourth quarter of 2013. It is too early to tell whether the organisation will be successful or not, although the delay of a number of activities in recent months may indicate that the department is struggling to cope with the demands created by increasing the number and range of government suppliers. These issues appeared to grow during the report and we saw increasing notes of concern from suppliers, trade press and analysis organisations such as Kable. A careful eye should be kept on this situation to determine if the growing pains that every new organisation goes through can be overcome.

MPA has been in existence for more time but is still growing. As well as other major programmes (for example High-Speed 2, HS2) the next government will face major digital delivery challenges which, if delivered incorrectly, could cause both significant cost overruns and impact to people's lives.

These challenges include the need to replace the Airwave emergency network and the opportunity to transform operations within DWP and HMRC due to the expiry of long-running contracts. There are potentially billions of pounds in annual savings to be won if these operations are transformed in line with the evolving best practice.

We have seen no assessment of the government's digital delivery capability and its ability to deliver on these programmes. Does it have sufficient internal capability? How much will it need to rely on external suppliers? And – perhaps above all – are mechanisms in place for honestly assessing, disclosing and learning from both successes and failures in the work of these centres of excellence?

Despite the successes of GDS with many of the digital exemplars, the failures of the Universal Credit programme have amply demonstrated the potential of large complex programmes that are enabled by digital technologies to go massively wrong. This programme has caused significant monetary loss to the government, but it has also disrupted people's lives and delayed policies that may have improved millions of others.

The programme was under MPA oversight but still failed. There has been ample public discussion about the repeated failure to hit delivery targets but little disclosure of why it has been failing. Are lessons being learnt? Would greater transparency have helped avoid the failure?

Similar questions could be asked about the NHS care.data programme. It is also worth observing that the government's Identity Assurance programme will require all UK citizens to create a new online identity and, as we have

¹⁷⁶ <https://www.gov.uk/government/groups/major-projects-authority>

discussed, has already missed a number of delivery targets. Neither of these programmes is within the remit of the MPA.

In none of these cases are we intending to comment on the desired policy outcomes; but it is important to note that our proposed use of social value as a primary measure for prioritising efforts would need to extend to project management and governance.

Rather than focusing our governance and best delivery experts solely on projects where there is significant spend we should be focusing these experts on projects with a high social value. These are major projects. Only then will we be able to align excellence and best practice with real social impact and build a new kind of digital government.

Recommendation 35

Priority: high

Assess delivery capabilities and transparency rules for major digital delivery projects and align Major Project Authority (MPA) guidelines with the need to focus on projects with a high social value

Recommendation Summary

The following table lists all recommendations from the report.

Each recommendation has been assessed to determine where it supports our five desired outcomes. The recommendations have also had a high-level assessment of yearly benefits and implementation cost.

In this assessment of yearly benefits we have focused on the benefits to the Treasury through reduced costs. Some of the recommendations, in particular recommendation four, have a more detailed assessment within the detail of the report including an assessment of the economic benefits to wider society.

For both benefits and costs we have used the simple measure key of: -- = Unquantifiable, 0 = Existing Spend, £ = <£5m, ££ = <£50m, £££ = >£50m. Some of the benefits will go significantly higher than these figures, for example the digital transformation of central government services to modern standards will allow several billion pounds of yearly expenditure to be redirected to other purposes.

Chapter	Ref	Recommendation	Priority	Supporting Desired Outcomes					Benefits and Costs	
				<i>Restore Trust, Ethics and Security</i>	<i>Design Digital for Everyone</i>	<i>Focus on Benefits to Society</i>	<i>Build Delivery Capabilities</i>	<i>Put People In Control</i>	<i>Estimated Yearly Benefits to Treasury</i>	<i>Estimated Implementation Cost</i>
The Prize of Digital Government	1	Retain Cabinet Level leadership for digital transformation but with individual Secretaries of State in key departments (DWP, HMRC, DfE, DEFRA, DCLG, Transport, MoJ, Health) leading in their own areas.	H			✓	✓	✓	--	0
Ensuring Everyone Enjoys the Power of Digital	2	Individual central government departments should complete the digital transformation of the identified transactions by 2020 to best-practice standards under governance of the Government Digital Service (GDS) group	H		✓	✓	✓		£££	£££
	3	Focus the best digital experts on services with the highest value to society.	H		✓	✓			£££	£
	4	Provide digital skills to an additional 4.9million people over the next Parliament. This will improve people's lives and create over £189million in annual savings	H	✓	✓	✓		✓	£££	£££

Chapter	Ref	Recommendation	Priority	Supporting Desired Outcomes					Benefits and Costs	
				<i>Restore Trust, Ethics and Security</i>	<i>Design Digital for Everyone</i>	<i>Focus on Benefits to Society</i>	<i>Build Delivery Capabilities</i>	<i>Put People In Control</i>	<i>Estimated Yearly Benefits to Treasury</i>	<i>Estimated Implementation Cost</i>
	5	Extend the use of social infrastructure, such as libraries and town halls, so it is increasingly fit for use in digital inclusion, assisted digital	M		✓				£££	£££
	6	Direct Ofcom to produce a report on a Universal Service Obligation for Internet access	H		✓	✓			-	£
	7	Define a baseline set of digital capabilities that all people should expect from the public sector and work across the public sector to implement this baseline by 2020.	H		✓			✓	£££	££
Restore Confidence in Open, Shared and Personal Data	8	Improve accountability by releasing public sector performance data as open data	H	✓				✓	-	££
	9	As part of a general move to open up geospatial data the UK should have an open, authoritative and definitive address dataset by 2021. This will increase economic growth, reduce wasted effort and improve access to public and private services by all citizens	H		✓	✓		✓	£££	££
	10	Government should provide a clear, easy to use method for requesting open data and should certify all open datasets to an equivalent level by the end of the next parliament.	M					✓	££	££
	11	Set up a review into Data and Society	H	✓		✓	✓	✓	£££	££
	12	Discover and publish as open data all existing data sharing agreements	M	✓				✓	-	£
	13	Urgently deliver on the Identity Assurance programme	H		✓	✓	✓		£££	££
	14	Create an ethical framework and governance for emerging ethical issues around the interaction of the state, its citizens and corporations via digital technology	H	✓	✓		✓	✓	£££	£
	15	Public sector organisations should publish open roadmaps of service improvement plans and	M	✓			✓	✓	£££	££

Chapter	Ref	Recommendation	Priority	Supporting Desired Outcomes					Benefits and Costs	
				<i>Restore Trust, Ethics and Security</i>	<i>Design Digital for Everyone</i>	<i>Focus on Benefits to Society</i>	<i>Build Delivery Capabilities</i>	<i>Put People In Control</i>	<i>Estimated Yearly Benefits to Treasury</i>	<i>Estimated Implementation Cost</i>
Communities through Digital Services		actively request and listen to feedback on existing services; suggestions for improvement and ideas for new services								
	16	Ensure that open policy processes provide open data and equal opportunity for people and communities across the country to contribute.	L		✓			✓	-	£
	17	Provide ‘digital scaffolding’ to enable communities to quickly form an online presence. Stimulating such communities around public services	M		✓			✓	£	££
	18	Government Digital Service (GDS) should be given the remit to work with local government	H		✓		✓		£££	££
Thinking Local by Energising Cities and Regions	19	Maintain a strong, open evidence base to capture the outcomes, costs and benefits of implementing digital services in local authorities.	M		✓	✓	✓		££	£
	20	Local authorities should recruit strong, capable leadership and delivery teams responsible for both digital activity and culture change	H				✓		££	£
	21	A new national organisation to create ‘local digital factories’ should be set up and run on a fundamentally open, collaborative and not-for-profit basis.	H		✓		✓		£££	££
	22	Use public spaces and open data to stimulate local innovation	L	✓	✓	✓		✓	£	£
	23	Run innovation challenges to help solve real problems	L	✓	✓		✓	✓	£	£
Reducing Cost with an Open Digital Architecture	24	Government should develop a common architectural model and platform based on open standards	H				✓		£££	£££

Chapter	Ref	Recommendation	Priority	Supporting Desired Outcomes					Benefits and Costs	
				<i>Restore Trust, Ethics and Security</i>	<i>Design Digital for Everyone</i>	<i>Focus on Benefits to Society</i>	<i>Build Delivery Capabilities</i>	<i>Put People In Control</i>	<i>Estimated Yearly Benefits to Treasury</i>	<i>Estimated Implementation Cost</i>
Creating Better Outcomes by Building Digital Partnerships	25	Government should build on the G-Cloud framework but needs to increase use of commodity cloud services and actively research and understand needs outside of central government	M				✓		£££	£
	26	CCS should publish a current and desired map of frameworks; working to rationalize and reduce the number of frameworks over time.	M				✓		£££	£
	27	GDS should build on Digital Marketplace to support the search needs of differing buyer groups, to incorporate additional frameworks, and to encourage searches aligned with government policy	M			✓	✓		££	£
	28	Government should experiment with open, online feedback about suppliers	L	✓			✓	✓	££	£
	29	Cabinet Office should develop and publish guidelines for how suppliers are expected to work together when multiple suppliers exist in supply chain.	M				✓		££	£
	30	Government should annually publish a forward-looking procurement strategy to signal its intentions and thereby foster an informed, diverse and flourishing market of suppliers	H				✓		£££	£
A Digital Civil Service for a	31	Complete the update of the civil service competency framework to recognize the need for basic digital skills at all levels and the ability to deliver on or work within transformation programmes at higher levels	M		✓		✓		£	£
	32	Recognise the need for and value of digital specialists by offering appropriate salaries, training opportunities and building career paths to senior grades.	H	✓			✓		-	£

Chapter	Ref	Recommendation	Priority	Supporting Desired Outcomes					Benefits and Costs	
				<i>Restore Trust, Ethics and Security</i>	<i>Design Digital for Everyone</i>	<i>Focus on Benefits to Society</i>	<i>Build Delivery Capabilities</i>	<i>Put People In Control</i>	<i>Estimated Yearly Benefits to Treasury</i>	<i>Estimated Implementation Cost</i>
Better Government	33	Provide 5 days of digital training to all civil service staff during the next Parliament and encourage and support frontline workers to become champions for a digital nation	M		✓		✓		££	£
	34	Provide civil servants with the ability to anonymously comment on projects and provide ideas for improvements	M	✓			✓	✓	£	£
	35	Assess delivery capabilities and transparency rules for major digital delivery projects and align Major Project Authority (MPA) guidelines with the need to focus projects with a high social value	H	✓	✓	✓	✓		£	£

Appendix A – Process

Chi Onwurah MP announced the Digital Government Review in December 2013 [¹⁷⁷]. The review was formally launched in March 2014 [¹⁷⁸].

Volunteers working under the guidance of a non-partisan advisory board staffed the review. The review called on additional external expertise as deemed appropriate.

The review was set an initial and wide ranging terms of reference by Chi Onwurah MP but otherwise operated independently of the Labour party.

Initial Terms of Reference

Labour's Digital Government Review will set out clear goals for a digital agenda that will improve services and empower citizens while being efficient and cost effective. Under the guidance of our Advisory Board and with contributions from a wide range of stakeholders across the country, the review will deliver a framework for transforming digital government together with concrete policy proposals to make digital services work for the many.

Key areas to be explored in the review include:

- Ways in which technology can empower citizens in their relationship with government
- People's awareness, experience, concerns and expectations of how the public and private sector stores and uses information regarding themselves
- Emerging data and information usage models, particularly in the areas of value creation, consent, trust and privacy
- Characteristics of the technology requirements of the public and private sector, including how and where those requirements may vary between sectors
- Differing digital delivery and procurement models and how they are used in both the private and public sector
- Ways in which digital services can improve quality, reduce costs and support the evolution of public services
- Technology enablers that can support rapid and cost-effective deployment or change to public services

The review issued a number of calls for evidence to test certain propositions. These propositions and calls for evidence were developed by the review team and advisory board based on the terms of reference; and an initial assessment of key issues, guiding principles and potential solutions. This initial assessment guided much of our work.

¹⁷⁷ <http://press.labour.org.uk/post/68986428717/labour-launch-digital-government-review-digital>

¹⁷⁸ <http://press.labour.org.uk/post/79362598336/labour-launches-digital-government-review-digital>

All propositions and calls for evidence were published on the review website and communicated out in a number of ways (for example via email, twitter, media and professional associations) [¹⁷⁹].

Access and Skills	Citizens should have access, and the skills they need, to use government digital services.
Information Rights	Citizens should have a right to ensure that information about them held by government is proportionate, fair and accurate; the right to be informed of the uses to which that information is put; and the right to 'opt out'. Citizens should also have a right to have disproportionate, unfair and inaccurate information about them either corrected or taken down.
Supporting Communities	Communities should be encouraged to develop support networks to help one another to develop skills, digital literacy and to use government digital services. NB: no call for evidence went out for this proposition as the responses to other propositions were felt to cover the theme in sufficient detail.
Citizen Needs First	The design and production of government digital services should put the interests, abilities and needs of citizens first.
People-Powered	The development of government digital services will follow a co-production model and be governed by a set of principles designed to ensure that citizen's interests are respected and that services are people-powered.
Continuous Innovation	Embedding a culture of continuous innovation in how government digital services are delivered to citizens offers the potential to dramatically improve the range and quality of services on offer, while also enabling significant reductions in the cost of providing services.
Digital Framework	A framework for Digital Government should provide a direction to transform costly legacy applications; unite individual initiatives to develop government digital services making it easier for citizens to discover and use the services they need, while streamlining the delivery of government digital services, maximising re-use and cutting costs to support the zero-based spending review.
Digital Procurement	Procurement for government digital services needs to change to support value for money and innovation through a healthy competitive market that enables new suppliers to enter the public sector market while reducing costs and aligning with Government's wider procurement policies.
Skills and Culture	The move towards Digital Government requires a culture change and skills refresh at all layers of government.

¹⁷⁹ <http://www.digitalgovernmentreview.org.uk/articles.html>

The review team identified and actively engaged various stakeholder groups when drafting calls for evidence, when circulating calls for evidence, analysing results and forming recommendations. The following table lists the stakeholder groups along with the number of formal submissions received from each group.

Stakeholder Group	Description	Number of Formal Submissions
Individual Citizens	This category and count includes both formal submissions in response to the calls for evidence and responses to two online surveys.	2176
Civil Society Organisations	Groups that campaign on behalf of citizens: for example privacy or consumer rights groups.	5
Community Infrastructure	Groups that form part of the mixed economy that deliver local and community services.	8
Think Tanks	Think tanks are bodies of experts that provide advice, ideas and advocacy on specific problems.	3
Academics	University professors and post-graduate students.	4
Professional Bodies and Specialists	Organisations that represent specific professions	17
Large Companies	Large companies that may or may not supply the public sector.	15
Small Companies	Small companies that may or may not supply the private sector.	10
Trade Unions	Trade unions representing public sector workers	3

Where permission was received all submissions were published on the digital government review website for others to use as they wish.

Some people and organisations helped the review team to organize events on specific subjects: innovation, procurement for small businesses, open data, digital government in 2020, smart cities, digital families, the needs of people attending Citizens Advice Bureaus. No events had an entry fee, no events had limits on type of attendance. All were open to everybody who could make the event.

Following the events a group of volunteers synthesised both the event minutes and the formal responses to the calls for evidence by stakeholder group. This was an important step to minimise bias in the process, it reduces the chance of a group with the most time dominating the process.

The review team also performed their own research to find evidence or information that was not highlighted by these steps. For example more

detailed investigation took place into digital inclusion, local government and smart cities.

The review team then worked with the advisory board to produce the report and recommendations.

Our thanks go to those who helped organize and host events, or who submitted their thoughts, ideas and effort in other ways.

Review Team

Peter Wells led the review team with significant support from John Reiners.

Some of the other review volunteers have chosen to remain anonymous but, whilst the contents of the report remain the responsibility of the core team and advisory board, the following individuals and organisations receive particular praise and thanks for organising events, for assisting with the publication or for other volunteer effort: Adobe, Andrew Gardner, Big Innovation Centre, Bill Wilson, Camden Council, Clara Crivallero, Jenny Perkins, Jonathan Baillie-Strong, Kable, Louis Wigston, Mario Milinovic, Mark Thompson, Mike Martin, Mortimer Spinks, Outsourcery, Sarah Richards, Skyscape Cloud Services, Spend Network, Tech UK, Weber Shandwick.

Peter Wells (@peterkwells) spent 20 years working in the telecommunications industry, normally where technology, business and people intersect.

After gaining a BA in Mathematics from Oxford University Peter's first job was near his hometown in Lancashire where he worked for a predecessor of Virgin Media and despatched technicians to people's houses to fix telephones. He kept asking questions, so the company moved him into the IT department to help answer them. After 5 years answering questions, and asking many more, Peter moved to Convergys Limited where he helped multiple European telecoms companies to launch new services. Peter then spent 10 years at Cartesian Limited where he worked with telecommunications companies; software companies and regulators to transform organisations, launch new services and investigate new technologies.

Over the last year Peter has been working in a voluntary role to organise this independent review. He is also part of a team that are trying to implement one of the review's recommendations by creating an open address dataset. In his spare time Peter reads a lot of books, watches Blackpool FC and asks questions.

John Reiners is a finance manager, management consultant, researcher and writer on technological change. He worked with PwC Consulting and IBM to implement financial management solutions across a range of industries, specialising in performance management. He then went on to manage systems implementation and business transformation programs in the Public Sector, including at the MOD and DWP, where he gained first hand experience of many of the challenges implementing change in government. He has overseen several public sector thought leadership projects for IBM's Institute for Business Value, carrying out primary research and presenting research papers on technology issues affecting public sector organisations globally, including on

Privacy and Identity, Intelligent Transport, Smart Cities and Data Analytics. Still at IBM, he supported their “Smarter Planet” initiative by collecting quantitative evidence of the business benefits of technological change and presenting to clients and colleagues around the world. He carried out detailed public sector studies looking into Social Services and Public Safety and more general studies looking at Cloud computing and Outsourcing, highlighting the potential benefits and looking at case studies from around the world.

John left IBM in 2013, giving himself time to walk the dog and view the world from outside a global IT Supplier. In March he volunteered to join the Digital Government Review team.

In November 2014, John joined Oxford Economics to manage their Thought Leadership projects across Europe. He works with a team of expert economists, using their expertise and models to quantify the impact of technological change across cities, industries and the global economy. There he aims to combine quantitative results with qualitative research from surveys and interviews to create rounded perspectives on some of the most challenging issues facing organisations today.

Advisory Board

Tom Chatfield (@TomChatfield) is a British author and technology theorist. The author of five books exploring digital culture – most recently *How to Thrive in the Digital Age* (Pan Macmillan) and *Netymology* (Quercus) – his work has appeared in over twenty territories and languages. He also creates and designs content for games, apps and interactive media, including the award-winning educational game *The End*. Italian think tank LSDP named him one of its 100 Top Global Thinkers for his work on technology.

As a consultant and designer, Tom is interested in improving our experiences of digital technology, and in better understanding its use in policy, education and engagement. Past collaborators include Google, the BBC, Channel 4 Education, Mind Candy, We Are What We Do, Flamingo London, Six to Start, Preloaded, Firefish, Future Lab, Sense Worldwide, SAGE Publications, Sugru, the BMJ, and Allianz.

Recent projects include collaboration with We Are What We Do on a game to improve young people's mental health, awarded funding through Google's global Impact Challenge; research for BMJ Learning on the value of digital pedagogy; and work with SAGE Publications on the nature of excellence in online learning.

Tom speaks and broadcast around the world on technology, the arts and media. Appearances include TED Global and the Cannes Lions Festival; authors@Google; the World Congress on Information Technology; Science Foo Camp; Intelligence Squared; the Houses of Parliament; Aspen Seminars for Leaders; and venues ranging from the Sydney Opera House to the Googleplex.

A launch columnist for the BBC's worldwide technology site, BBC Future, Tom writes and commentates widely in the international media, as well as guest lecturing at universities in the UK and Europe. He has a doctorate from St John's College, Oxford, and is an associate editor at Prospect magazine; a faculty member at London's School of Life; a past guest faculty member at the Said Business School, Oxford; a Master's Committee member at the Economics Research Council; and a senior expert at the Global Governance Institute.

When not working, he plays jazz piano and drinks too much coffee.

Peter Ingram is Managing Director of Touchstone Consulting Limited, his own company, established to provide strategic consulting in telecommunications, media and technology to a range of clients in the UK and around the world, including investors, operators, suppliers and governments/regulators.

He also acts as Programme Director for the Suffolk Better Broadband Programme, and is a member of the UK Government's Broadband Delivery UK (BDUK) Framework Board. Until the end of 2009, Peter Ingram was Chief Technology Officer (CTO) at Ofcom, which is the regulator and competition authority for the UK's converged communications industry, where he played a leading role in Ofcom's Strategic Review of Telecommunications (which led to the functional separation of BT Openreach), Ofcom's strategy for Next Generation Access/Superfast Broadband, and Ofcom's management of the radio spectrum.

Prior to joining Ofcom in 2004, Peter had been Chief Technology Officer (CTO) at BT Retail. Peter had a long and varied career at BT, including working on the strategy and technology developments related to broadband.

Stephen King is a partner at Omidyar Network, Stephen brings exceptional experience in applying media and technology to create positive social impact. Stephen leads the global Government Transparency initiative and a portfolio that includes a broad range of national and global organizations. Many are innovators in the use of technology to help make governments more responsive and aid citizens in holding their governments to account. The portfolio includes: Sunlight Foundation, Global Voices, Fundación Ciudadano Inteligente, mySociety, New Citizen, Janaagraha and Ushahidi, among others.

Prior to Omidyar Network, Stephen served as the chief executive of BBC Media Action, where he led a period of sustained growth that included building programs in more than 40 countries in the developing world. Stephen helped establish the organization's international reputation as one of the largest and most successful organizations using media and communications to improve the lives of the world's poor and promote better governance and transparency worldwide. Prior to the BBC, Stephen held executive positions at several non-profit organizations based in the United Kingdom and the developing world.

Stephen is based in London and is a board member of Ushahidi, Global Voices, and mySociety. He holds an MA in Oriental and African Studies from the University of London.

Piers Linney, Co-CEO of the world-leading Cloud Service Provider Outsourcery plc, is an entrepreneur with a blue chip background in venture capital law, corporate finance and fund management.

Starting at just 13 years old when he cut out his local newsagent by going direct to the wholesaler to start his own paper round, Piers's career has spanned a range of businesses in the technology, media and communications sectors. He is inspired by the disruptive power of technology and the Internet, social business and the need for alternative financing options for growth businesses, and he firmly believes that business can be a force for good.

Outsourcery's reseller partners include large telecommunications companies, systems integrators and value-added-resellers as well as many smaller IT and communications resellers with small and medium-sized business end-

customers. Outsourcery was Microsoft's worldwide Hosting Partner of the Year 2010, Microsoft's worldwide Dynamics CRM Partner of the Year 2011, one of three finalists for the Microsoft worldwide Server Platform of the Year 2013 and recently winner of the UK Cloud Awards Collaboration Product of the Year 2014. Outsourcery provides cloud-based IT and communications solutions for commercial and public sector end-customers and has partnered with Microsoft and Dell to deploy the first Microsoft-validated IL3 accredited platform for the provision of services to central Government in line with its 'cloud-first' and SME procurement policies.

Piers featured on Channel 4's The Secret Millionaire in 2011 and is currently one of the Dragons on the BBC's Dragon's Den. Piers works extensively with charities in his role as a trustee of the Powerlist Foundation and the innovation charity, Nesta.

Cho Oliver - after graduating in engineering from Imperial College, Cho spent the eighties learning the IT trade in investment banking in the City and Wall Street.

Looking for a change in the nineties, she co-founded and grew an innovative software consultancy to several hundred strong across offices in the UK, US and India. She advised blue chip clients across many industries, as well as a couple of UK government departments, on how to realise their business strategies through leveraging emerging technologies and the internet.

Following the dot com bubble, Cho became CIO for European Oil Trading at BP during a time of significant IT investment and change. Wider group roles followed with responsibility for IT methods and best practice.

William Perrin has experience of deploying leading edge digital technologies in deprived and isolated communities and national digital strategy.

Founder of Talk About Local, working with people in their communities across the country to help them find a grass roots voice online that they own and run. TAL's trainers worked in some of Britain's most deprived and isolated communities to help modern digital technologies benefit people's daily lives. In London's Kings Cross, many years before regeneration, William realised that digital technologies could support and even augment traditional local community action and created <http://kingscrossenvironment.com/> as an online voice and organising tool for local activists. This site was based on William's real world experience of working with local people in a tough environment to improve a challenging neighbourhood. William was a founder member of the Local Public Data Panel working with local government, CLG and citizens to open up local government data.

William was a senior civil servant prior to founding Talk About Local with a 15 year career that frequently involved national digital issues. William was technology policy advisor to Prime Minister Blair 2001-2004 and through commissioning and delivering the 2007 Power of Information Review for Ministers was partly responsible for the modern interest in open data. William was instrumental in publishing the Communications White Paper in 2000 that created OFCOM. And in the 1990s did much work on enabling digital TV. While in the Cabinet Office working on transformational government, William was also chair of the OECD expert group on 'e-government'. In 2009 William was appointed to the selection panel for the Independently Financed News Consortia and from 2012-2014 served on the Government Digital Service's Digital Advisory Board. William is a non-executive director of The Tinder

Foundation, which exists to make good things happen with digital technology, with a focus on digital inclusion.

William is a trustee of The Indigo Trust, a grant making foundation that supports people, largely in Sub-Saharan Africa to create or find the information they need to make their lives better

Vicki Shotbolt is the founder and CEO of The Parent Zone which she set up in 2005 with a simple aim: to work with the companies and organisations real parents engage with on a daily basis to create practical approaches to making parenting less stressful. Vicki first became involved in creating parent-friendly initiatives when she joined the Family and Parenting Institute in 1999 having spent several years working for children's charities.

Currently, Vicki serves on the board of Gingerbread, is the chair of FairFun and is on the executive board of the UK Council on Child Internet Safety. She is a regular commentator on a wide range of parenting issues.

Jeni Tennison is the Technical Director of the Open Data Institute. She originally trained as a psychologist and knowledge engineer, gaining a PhD in collaborative ontology development from the University of Nottingham. She went on to work as an independent consultant and practitioner, specialising in open data publishing and consumption, including XML, JSON and linked data APIs, before joining the Open Data Institute in 2012. She was awarded an OBE for services to technology and open data in the 2014 New Year Honours.

Before joining the ODI, Jeni was the technical architect and lead developer for legislation.gov.uk, which pioneered the use of open data APIs within the public sector, set a new standard in the publication of legislation on the web, and formed the basis of The National Archives' strategy for bringing the UK's legislation up to date as open, public data.

Within the wider UK public sector, Jeni worked on the early linked data work on data.gov.uk, helping to engineer new standards for the publication of statistics as linked data; building APIs for geographic, transport and education data; and supporting the publication of public sector organograms as open data. She continues her work within the UK's public sector as a member of the UK Government Linked Data Group, the Open Data User Group, the Crime and Justice Transparency Sector Panel, the Education Data Transparency Group and the Open Standards Board.

Jeni has contributed to several international standards through the W3C, working on XSLT and XPath 2.0 within the XSL Working Group and on XProc within the XML Processing Working Group. She was appointed by Tim Berners-Lee to the W3C's Technical Architecture Group in 2011 and has since chaired the W3C's HTML Data Task Force. In 2014 she started to co-chair the W3C's CSV on the Web Working Group.

Graham Walker was CEO of Go ON UK, responsible for leading the UK's Digital Skills Alliance, which aims to make the UK the most digitally skilled nation in the world.

Graham has previously held the post of Director for Digital Delivery at the Cabinet Office, where he headed up the Government's policy and strategy work on digital delivery in the public sector.

Graham was also a Director at Race Online 2012, supporting the policy and strategy work behind the office of the UK Digital Champion, working to deliver

a 100% networked nation, and has previously been a Managing Partner at Gov3, as well as former Director of Strategy for the Office of e-Envoy at the Cabinet Office.

Appendix B – Funding Digital Inclusion

The government has stated that it believes that just under 10% of the UK population will be left without basic digital skills by 2020.¹⁸⁰ We strongly believe that it is morally wrong that a sizeable percentage of the population, one which is already disadvantaged with more than its share of disability, unemployment and old age, is excluded from the benefits of digital. A new government should feel obliged to do what it can to correct this injustice. However we realise that even moral crusades need to be paid for. This Appendix sets out the economic case for funding digital inclusion.

The Tinder Foundation's report "A leading digital nation by 2020"^[181] sets out a compelling case for investing in digital inclusion. It recommends setting a target of as near as possible to 100% digital inclusion by 2020, defining inclusion as the ability to carry out defined simple online tasks. Near 100% rates of inclusion have already been achieved in countries like Norway (98%). The costs to achieve the inclusion target are calculated as £875 million.

The report recommends that the required funding is split equally between the government, private sector and third sector organisations, £292 million each over the 2015-20 period. Initially this would be likely to be a scale up of existing activity but over time we believe new initiatives will be needed to help the nation reach the goal of digital inclusion.

Once the goal is set, the government contribution is funded and additional activities start then we expect the "halo effect" to bring in additional support from the private and voluntary sector to help the nation reach the goal.

The private sector has a clear interest in getting more people online. The digitally excluded are potential employees, consumers or partners. Based on current private sector contributions to inclusion activities we would expect most support to focus on either access and equipment or companies providing training to their staff.

We would encourage more private sector focus on access and equipment. These are services that the private sector provides to citizens and offering low-price deals to either excluded citizens or to public sector organisations deploying free equipment through social infrastructure, such as libraries, will complement a government focus on skills.

The voluntary sector is already providing valuable support to inclusion activities largely through the efforts of volunteers offering their time and suitable premises to provide basic training in online skills. There are estimated to be as many as 25000 individuals providing their time free of charge through UK Online Centres and 15000 individuals contributing time through Go ON UK's Digital Skills initiatives. Similarly some social housing providers are already working on digital inclusion initiatives. We believe that a high profile and well-

¹⁸⁰ <https://www.gov.uk/government/publications/government-digital-inclusion-strategy/government-digital-inclusion-strategy>

¹⁸¹ A Leading Digital Nation by 2020: Calculating the cost of delivering online skills for all: What is the investment needed to get everyone in the UK using the internet regularly with Basic Online Skills?" Report by Catherine McDonald, for Tinder Foundation and Go ON UK, February 2014

publicised national campaign to tackle digital inclusion would encourage even more third sector organisations and individuals to volunteer.

Options for funding government's contribution

We considered four ways to fund government's contribution while remaining within the boundaries of Labour's zero-based spending review ^[182] and without looking for additional funding from outside government.

For each option we estimated quantifiable benefits due to increased digital inclusion along with the advantages and disadvantages of using as a funding source.

Option	Quantifiable Benefits	Disadvantages
1. Savings from digital service delivery	Surplus of £188m by 2020 Further ongoing savings of £189m per annum	
2. Benefits from increased and higher-paid employment	£120m per annum	Difficult to causally attribute to digital inclusion
3. Benefits across the wider economy	Estimates as high as £6.6bn per annum	Difficult to causally attribute to digital inclusion
4. General savings in ICT expenditure	n/a	Benefits are not due to inclusion

We recommend that option 1 is used to fund the investment and track the benefits.

The analysis shows that option 1 by itself fully funds the government's £292m investment by year 4. Providing a surplus of £188 million by 2020 and further ongoing savings of £189 million a year thereafter. This is our recommended option. It is clear and simple.

But it is important to note that the benefits of all options do accrue to individuals, communities, businesses and society as a whole. The projected benefits show clearly that digital inclusion is worth pursuing. The benefits are spread widely across society and greatly exceed the cost of implementation.

1. Savings from digital service delivery

Moving the digitally excluded online and using digital government services would directly save the costs of using more expensive service delivery.

This is the essence of the current Government's Digital-by-Default strategy. The Government's own estimate from the Cabinet Office's Digital Efficiency report ^[183] is that the savings in direct government expenditure will reach £1.7 billion per annum. It estimated that it was on target to achieve £1.2 Billion savings for the period 2010-15 ^[184]. Savings are spread across those departments converting to online transactions.

¹⁸² http://www.yourbritain.org.uk/uploads/editor/files/Zero_Based_Review.pdf

¹⁸³ "Digital Efficiency Report", Cabinet Office, November 2012, at:

<https://www.gov.uk/government/publications/digital-efficiency-report/digital-efficiency-report>

¹⁸⁴ <https://www.gov.uk/government/news/new-digital-public-services-will-help-britain-win-the-global-race>

To calculate incremental benefits from inclusion we assumed that the 10% who would otherwise be digitally excluded by 2020 move online progressively throughout the 2015-20 period. We recognize that the pace of inclusion slows at the end as the remaining segments will be the hardest to provide both skills and encouragement to.

The government will be able to realise the savings from online service delivery at the same rate as they are achieving savings from the digitally enabled. The savings for the digitally enabled are stated in the Digital Efficiency Report. We have assumed that government is on track to reach this target by 2020 and have assumed a flat continued increase in these savings with the previously digitally excluded using these services at the same rate as the digitally included. These are new savings that will not be accounted for in existing departmental spending plans.

All figures in £ Millions										
	2015 -16	2016 -17	2017 -18	2018 -19	2019 -20	2020 -21	2021 -22	2022 -23	2023 -24	2024 -25
Spend										
Funding (evenly split over 5 years)	-58	-58	-58	-58	-58	0	0	0	0	0
Benefits										
Percentage of population forecast to have digital skills	79%	82%	85%	87%	90%	90%	90%	90%	90%	90%
Additional population with digital skills due to extra funding	2%	5%	7%	9%	10%	10%	10%	10%	10%	10%
Total percentage of population with skills	81%	87%	92%	96%	100%	100%	100%	100%	100%	100%
Forecast savings under existing strategy	600	800	1000	1400	1700	1700	1700	1700	1700	1700
Incremental savings through inclusion	15	49	82	145	189	189	189	189	189	189
Net	-43	-10	24	86	130	189	189	189	189	189

The assumption that the digitally excluded will use government services when they gain skills is backed up by anecdotal evidence from inclusion initiatives. These have found that once someone knows how to get online they very quickly apply their new skills to access government services. The digitally excluded are amongst the most excluded in society, they tend to be those who use more government services than others.

There will therefore only be a short lag between the investment, increased uptake in digital service use and recognising the savings. This, along with the proposed enhanced digital inclusion evidence base, will enable government to monitor the effectiveness of the strategy tailoring the tactics as required.

There are potentially significantly greater savings if we were to include savings in departments that the Digital Efficiency Report did not cover, for example Local Government, Health and Police. We have made no effort to estimate these savings here.

2. Benefits to individuals

Individuals and society benefit in a number of ways from gaining digital skills: increased self-esteem; increased propensity to volunteer; access to online services; increased employment prospects ^[185]. The latter is particularly helpful when looking to justify funding.

The linkage between online skills and employment prospects is well known. As the previously digitally excluded take up a job they stop receiving benefits and

¹⁸⁵ An increasing number of jobs are only advertised online.

start contributing tax revenues. Others will become more productive and move to higher paid jobs as their skills increase.

The Tinder report estimates that their recommendations would equip 6.2 million currently digitally excluded adults with basic online skills by 2020, of which 2 million are of working age. This is 5% of the total working age population [¹⁸⁶].

We assume that the digitally excluded have a similar unemployment rate as the general population, 6.5%. We can estimate that 5% move into a job as a result of gaining online skills and that this job pays the average wage. This allows us to estimate a combination of benefits savings and increased tax income of £120m per annum. This is calculated as follows:

Reduced benefit payments

Total benefit bill (£Millions)	33600	
%age of working age population digitally excluded	5%	
x %age improvement in employment	5%	X
Total savings (£Millions)	84	

Increased tax income

Working age excluded	2000000	
Unemployment rate	6.5%	
%age improvement in employment	5%	
Number of excluded employed	6500	X
Tax and NI on average wage (£)	5525	X
Total revenue increase (£Millions)	36	

We have not attempted to determine the quantitative impact of the increase in productivity and salaries of the already employed.

Although the sums are significant it will be difficult to identify these benefits as being directly caused by digital inclusion. This will make it difficult to track the benefits being created by the inclusion funding rather than by other benefits. It may be appropriate to implement such evaluation methods in the future but we did not take this analysis further at this time.

3. Benefits to the wider economy

The nature of the Internet as a “public good” is widely recognized, with a wide range of benefits accruing to those accessing the Internet including cheaper shopping, better job prospects and increased opportunities to engage in online communities for social reasons. A PwC report [¹⁸⁷] estimated the benefits per person from online shopping at £560 per annum.

¹⁸⁶ These figures will need to be updated at the time that any future programme is due to start

¹⁸⁷ “Champion for Digital Inclusion - The Economic Case for Digital Inclusion,” Price Waterhouse Coopers, Oct 2009

The BT report, “Valuing Digital Inclusion” calculates the wider benefits of getting online as £1064 pa for a new user gaining basic online skills.

Multiplying the BT figure by the 6.2 million who would otherwise be digitally excluded leads to benefits of £6.6 Billion per annum.

Of course there will also be benefits to employers, particularly smaller employers and charities. A 2014 survey estimated that a third of SMEs and charities do not have basic online skills” and that only half had a website^[188]. Digital inclusion would offer employers much needed digital skills and increasingly productive staff. We have not accounted for this benefit here.

A Booz & Co, Go-ON UK and Martha Lane Fox report ^[189] report quotes the potential benefits to the UK economy of £63 Billion pa to Gross Domestic Product (GDP) if the UK achieved Digital Leadership by 2011. Providing basic digital skills to everyone is essential to unlock all of these benefits.

These benefits would be widely welcomed and show that the greatest beneficiaries of increasing digital inclusion are individuals and the wider economy. Though these benefits are difficult to quantify and track to justify the funding of the government’s share, they are useful for all stakeholders to understand what is at stake. Increasing the skills of the 10% of the population that are forecast to be digitally excluded provides significant benefits to the wider economy.

4. General savings in ICT expenditure across government

We discounted option 4 because, although there are potentially large savings that would more than cover the costs, we cannot associate the savings directly with the benefits of increasing digital inclusion. These savings are likely to be accounted for within existing departmental spending plans.

¹⁸⁸ “Lloyds Bank 2014 UK Digital Business Index”, Lloyds Bank in association with Accenture and Go-On UK, 2014 available at <http://resources.lloydsbank.com/economic-research/uk-business-digital-index-2014/>

¹⁸⁹ “This is for Everyone: The Case for Universal Digitisation”, Go On UK & Booz & Co ,2012

Appendix C – Local Government and Digital

As with central government the old ways of building and buying ICT and digital services has dominated in local government for many years. Significant investment had occurred but spend has primarily been with large suppliers and on proprietary solutions; often on long contracts. Typically these solutions have been customized to particular local authorities needs and processes, decisions have been (and often still are) made by delivery verticals rather than by IT departments. Local authorities are frequently structured around these verticals, or silos as some would call them

A number of organisations whether membership-based, such as Socitm [¹⁹⁰] and the LGA [¹⁹¹]; voluntary organisations, such as LocalGovDigital [¹⁹²]; or loose coalitions of local authorities, for example Camden and Bristol with the Open Systems Alliance [¹⁹³], have taken some steps into the leadership gap that has been left. Some local authorities have also been inspired by central government organisations, such as Government Digital Services (GDS), or by the digital changes they have seen occurring in the private sector.

Despite everyone's best efforts we are in a situation with pockets of greatness but a vastly disparate set of solutions and services. Even where solutions are bought from the same suppliers, and some suppliers do dominate parts of the market [¹⁹⁴], they are customized for each authority. This customization negates much of the advantages that should be obtainable by buying solutions from suppliers.

To some extent this is understandable, each local authority started at a different point and many were locked into long-term contracts, but the lack of consistent progress towards better and cheaper digital services is disappointing. It is the lack of progress that we can expect to result from an overarching policy direction that leaves each authority to their own devices.

Many local government practitioners will simply nod along with the above statements. Others will ask for evidence of the scale of the problem.

There are various existing pieces of research that highlight the scale of the problem:

- Fewer than 10% of councils received 4 stars in Socitm's Better Connected 2014 survey with only 31% passing standards for mobile access [¹⁹⁵]
- Socitm briefed out 23 case studies with potential for reuse in a report in December 2013, the councils involved have seen little takeup

¹⁹⁰ <https://www.socitm.net>

¹⁹¹ <http://www.local.gov.uk>

¹⁹² <http://localgovdigital.info>

¹⁹³ <https://joinup.ec.europa.eu/community/osor/news/uk-cities-start-alliance-sharing-and-re-use>

¹⁹⁴ <http://www.computerworlduk.com/news/public-sector/3543150/councils-spend-more-with-capita-on-back-office-than-with-all-smes-combined/>

¹⁹⁵ <http://www.socitm.net/research/socitm-insight/better-connected/better-connected-2014>

- No authorities have reused the GOV.UK publishing platform, local authorities are not benefitting from the community and government investment into what could be a reusable component
- Few authorities have reused the Open311 component developed in the US [¹⁹⁶], we are not benefitting from the community around that component

During the review we wanted to investigate the problem more deeply. So we sent a Freedom of Information (FOI) request to each local authority to determine the number and type of applications in use. The results were as feared:








- Several councils responded to the wrong email address but, luckily, to the right domain name. As we controlled that domain we could pick up the response but this speaks to an environment of manual processes and staff retyping email addresses rather than having an automated and common response handling system to handle inbound questions to the council
- 40% of authorities did not respond at all, maybe they mistyped our email address that badly that we never received it?
- One council had over 100 different web browsers installed on its computers. Some simple research confirmed that many of the older versions had security threats [¹⁹⁷]
- Fourteen authorities said that the cost of responding to our request was too high. We would expect every authority to have an ICT asset register, it allows authorities both to look for security vulnerabilities and to check if all items that are being paid for are actually being used, this can be a simple source of savings
- Several authorities reported that they could not respond as elements of their ICT had been outsourced. Even with outsourcing local authorities should retain overall architectural control of their ICT assets and be able to respond to FOI requests like this. This is imperative to understand the threats to which they and their citizens are exposed
- One authority reported to us that it operated over 1300 websites, our checks reduced this to a small handful as this authority was reporting webpages/URLs as websites
- We explored linking the data to Spend Networks [¹⁹⁸] open data on local ICT spend, this was an arduous task due to the lack of standardization and hence ability to link between the datasets. A shame as it may have yielded some interesting and empirical insights on the value for money of the approaches of different authorities

¹⁹⁶ West Berkshire, https://knowledgehub.local.gov.uk/web/prumens/blog/-/blogs/7263979/maximized?p_p_auth=yyVzj3au&p_l_id=794740&_33_redirect=%2Fgroup%2Fguest%2Fsearch%2F-%2Fresults%2Fopen311. Open311 creates open standards for handling inbound requests from people in a number of formats

¹⁹⁷ We would expect many other authorities to be in a similar position and would recommend a security review of IT asset registers for out-of-date desktop applications before a breach occurs.

¹⁹⁸ <https://spendnetwork.com/>

Finally, we come to the meat of our investigation. How many different applications are in existence in local authorities?

Authority Type	Apps						Total estimated applications
	Number of councils with data	Average number	Maximum number of apps	Minimum	Total no councils		
County	12 	382	789	91	28	10689	
District	120 	81	709	5	227	18302	
London Borough	15 	263	677	48	33	8683	
Metropolitan Borough	11 	258	553	23	36	9291	
Other	1 	19	19	19	1	19	
Unitary	44 	230	998	7	109	25053	
Overall	203 	154	998	5	434	66648	

It is worth highlighting the total number of estimated applications, 66,648 [¹⁹⁹].

Now it is important not to take these figures at face value. We certainly don't. The data is tricky to compare and some of these applications will be identical but the large variations in maximums and minimums tell the story. This is yet more confirmation that the vast majority of local authorities are running extremely different ICT architectures and solutions. There are few, if any, standards.

As explored elsewhere in the review this proliferation of architectures and applications coupled with the lack of standards inhibits collaboration and reuse and creates unnecessary costs.

¹⁹⁹ We removed some of the most outrageous high numbers (several councils reported figures in the 1000s) as, on detailed inspection, these turn out to be local authorities reporting small applications such as desktop drivers or applications to handle smartphones.

Appendix D – Smart Cities

There are a number of reasons why any government needs to consider how digital technology and services can enhance the performance of cities and regions:

- A large percentage of our population live, work and visit cities. 80% of the UK population live in cities, with over 30% in the 10 largest²⁰⁰. The global trend for increasing urbanization applies equally to the UK, with particularly strong growth rates in economically dynamic cities²⁰¹.
- Most of our economic activity occurs in cities, where different skills and professions, customers and suppliers are within close proximity. To thrive, all these enterprises, whether large corporations, SME or social enterprises need reliable infrastructure and services.

This concept of the digital, connected and integrated city has been discussed for some time now using terms such as smart cities, smarter cities, connected councils, connected communities, smarter communities and future cities.

The common thread through all of these terms is the belief that new and emerging digital technologies and techniques can be used to improve our towns and cities. To make them better places to meet, to work, to innovate and to live. These are technologies that are beyond moving forms online or integrating delivery organisations and services such as health and social care. Smart city technologies typically include new hardware such as a smart sensor that monitors car parking spaces.

Governments and cities around the world are working to develop these capabilities. The US has some of the more mature examples (e.g. Boston and Chicago) and a growing evidence base of the potential benefits to encourage more cities to invest. Other countries have created new cities virtually from scratch (for example Masdar City in Abu Dhabi or Songdo in South Korea). European cities present different challenges, with ancient architecture and infrastructure, yet many cities (for example Stockholm, Berlin and Barcelona) are using innovative digital technologies to deliver improved services.

²⁰⁰ "Smart Cities: Background Paper": Department of Business Innovation and Skills, October 2013

²⁰¹ See: <http://www.centreforcities.org/blog/2014/06/20/population-growth-and-migration-in-uk-cities/>

Case Study – The Chicago story

Chicago has invested significantly in the Smart Cities concept, following the vision of its forceful mayor Rahm Emmanuel. They are now seen as one of the leading examples of a Smart City, both in the US and internationally.

Chicago recognized that a smart city will not be built in a single political cycle. So the responsibilities and expectation for both digital service development and the release of data has been embedded into the cities organisational structure. Different political parties may have differing priorities for service development but the underlying need for digital to enable these services remains constant.

A key theme in their approach to Smart Cities has been to identify and address problems of digital access and actively engage with the population. They are targeting areas of deprivation and providing Wifi and broadband access. The administration release large amounts of data as open data. They regard the data as the people's data, rather than owned by city departments or politicians.

Citizens are consulted and involved in various ways. For the "Chicago: City of Big Data" exhibition they used a room sized 3D model of the city as an interactive platform to display open data. Large digital screens display the "Chicago Dashboard", described as an open, civic resource to display updated information about the city for areas such as housing, employment, transport, environment and planning.

Citizens are actively engaged in service design and development. A number of regional community groups around the city are engaged when building, designing and testing new services, with more than 500 volunteer testers available in Civic User Testing Groups across the city to test services in development.

Progress creating Future Cities in the UK

The Government has recently stated the importance to the UK of investing in smart city technologies, to ensure that UK cities remain competitive in a global economy and to gain a share of the new business opportunities. Government has set a target of 10% of the 2020 Smart Cities market (\$4 Billion) [²⁰²]. The UK Government's strategy is set out in a series of papers from BIS in late 2013 [²⁰³] which brand the UK's approach as Future Cities.

Key elements of this strategy are:

- The creation of a Future Cities group under the guidance of BIS
- The establishment of a Future Cities Catapult, to provide funding, spread best practice and support cities in their efforts to implement Future City projects
- Funding for a number of Future City pilot projects. The bulk of this funding (£33m) was awarded to Glasgow to develop a Future City demonstrator, where concepts can be trialed at scale. Further projects are underway in Bristol, Milton Keynes and Peterborough [²⁰⁴].

²⁰² BIS, *ibid*

²⁰³ See also: Global Innovators: International Case studies on Smart Cities" – BIS, research paper 135, October 2013 and "the Smart City Market: Opportunities for the UK": BIS research paper 136, October 2013.

²⁰⁴ "Smart Cities: Background Paper": Department of Business Innovation and Skills, October 2013
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246019/bis-13-1209-smart-cities-background-paper-digital.pdf

- Continuing research into Future City related areas, using established Research Centres of Excellence like Imperial College and Birmingham University.
- A commitment to work with UK, European and International Standards bodies, to ensure interoperability of emerging solutions, for example the recent £1.6m funding of work with IT suppliers to develop standards for the Internet of Things (IoT) [²⁰⁵]
- A commitment to engage with European and other International Smart City programmes and to keep abreast with emerging best practices

There are also a large number of other programmes in related areas. DCMS has committed to equip 22 Super Connected Cities and provide super fast broadband to all Enterprise zones by 2015. Other government departments are encouraging research into digital innovation of related services; for example the Department of Transport is working on establishing open standards for Intelligent Transport Systems and the Energy Technology Institute is a public /private partnership researching Smart Energy solutions for the UK [²⁰⁶].

Some UK Cities are working with established IT suppliers to develop Future City visions and specific initiatives. Manchester is working with Microsoft, Glasgow with IBM and Norwich with HP. These cities hope to benefit from the global scale and experience of these companies, who are also offering their services at much lower rates, as they are keen themselves to pilot approaches and develop high quality reference sites. Care will be needed however to ensure that the solutions being developed do not lead to vendor lock in or prevent an open and competitive market for both current and future service needs.

Despite the Government's ambitions on Future Cities progress has not been as fast as hoped.

The UK is not generally regarded internationally as a leader in Smart Cities. For example, a recent league table of Top Smart Cities²⁰⁷, had London at number 2, but no other UK cities in the Top 10. Other European countries are probably further ahead, with Spain (e.g. Barcelona), France (e.g. Paris, Lyon), Germany (e.g. Berlin) and Italy (e.g. Milan) all making steady progress with public backing. Looking further afield, the US, Japan, Singapore, Australia and South Korea are all promoting and investing in Smarter Cities with encouraging results.

There are a number of reasons why progress in the UK has been slow. Above all the period from 2010 has been one of "austerity" in Town Halls, where there have been very limited funds for new initiatives and an unproven concept. Future City solutions are not yet mature enough to have the sort of compelling business case with quick pay back that could encourage investment. We lack a common architecture based on standards that would mean that a solution built in one city can be reused in another. There has also been little enthusiasm or push from city populations, most of the active promotion of the concept appears to come from the large suppliers who have most to benefit financially or central government departments that are looking to build new businesses, rather than looking to improve services.

²⁰⁵ See: http://www.theregister.co.uk/2014/08/20/uk_gov_hypercat_funding/

²⁰⁶ BIS, *ibid*

²⁰⁷ IESE Cities in Motion Index 2014 at: http://ieseeinsight.com/doc.aspx?id=1582&ar=15&_ga=1.145551858.779718704.1405696049

To drive through a Future City vision and programme requires a particular type of digitally aware leadership that is in extremely short supply. This leadership needs to come from both the political sphere and from within the delivery teams in the organisation. Usually council leaders have to work together and with a complex ecosystem of competing public, private and third sector suppliers.

There have been successes in terms of driving innovation in some of our cities. Tech City is establishing London as a global force in the growing tech sector in particular Financial Technology, far behind San Francisco and New York²⁰⁸, but well ahead of all European competitors in terms of new business creation. Other UK cities are also growing promising tech clusters, for example Cambridge, Bristol, Brighton, Manchester, Newcastle and Liverpool.

Long term, creating vibrant digital businesses will depend on more than creating fertile conditions for startups. Most startups fail to make it long term and we risk most of the startup activity benefitting a small technocratic elite. Longer term it is essential to engage the broader population, to increase the pool of talent that will be needed to drive forward startups into viable businesses and to transform existing businesses with new digital capabilities.

Overall our progress is behind other countries and the progress is uneven across the country. There are many towns, cities and regions that fear being left behind, with industries under threat and facing a damaging cycle of decline with persistent unemployment, a declining working age population and increasing demand for services for an ageing population.

The future city revolution risks leaving some cities behind and excluding the people and communities that live and work in them.

The Governments' approach to Future Cities has been to provide financial support to a small selection of authorities, where they will carry out demonstrator projects, which can then be deployed elsewhere. The danger of this approach is that the country will be divided into a very few digital leaders with a large number of digital followers, with a few stragglers making hardly any progress at the back.

There is also a tendency among some to see the development of future cities as a race for investment and talent. Some cities will thrive as companies invest and a talented, young workforce moves to take advantage of the job opportunities and vibrant atmosphere, sucking resources away from traditional cities reliant on old and dying industries.

Rather than cities competing for limited resources, we want to see future cities collaborating and the overall pool of resources growing in response to demand. Investment funding will grow as new, profitable opportunities emerge. New investments in turn, will drive increasing demand and the supply of a digitally skilled workforce.

All cities should have an equal opportunity to become future cities and should be encouraged to do so. Cities and regions will have different needs and will develop at different paces but we fully expect all to make progress in the period to 2020. The leading, innovative cities will encourage demand through the supply chain to neighbouring cities, providing new business opportunities.

²⁰⁸ See Reuters report 16 June 2014 at: <http://uk.reuters.com/article/2014/06/16/uk-britain-tech-growth-idUKKBN0ER00520140616>

However we will need to ensure no city or region is left languishing without the opportunity and support needed to modernise.

In practice that will mean communicating the benefits of future cities more widely and effectively throughout the UK, it will mean co-ordination between the BIS responsibilities for Future Cities and the DCLG responsibilities for local authorities. It will also mean having a more comprehensive network in place to provide the commercial and technical support that may be needed, to deliver the business case and then provide the guidance so that cities can build on best practices elsewhere in an efficient way, avoiding costly reinvention and duplication.

Although the UK has not got off to the fastest start, we have the capabilities to be among the leading innovators of digital services to cities. This is a target worth striving for. Partly for the chance to take a share of the large and growing market for high value added and high skilled products and services. More importantly though it is because cities with properly designed and implemented digital services offer substantial benefits to its citizens – cheaper and better public services but also safer, cleaner and healthier places to live, work and spend their leisure time in.

We shouldn't be seeing smart cities as something unique and special, smart city technologies are simply another tool in the digital toolbox that can be used to build public services.

Looking forward to 2020, city digital services will evolve and the support that government needs to provide will need to change accordingly. Although it may not develop as rapidly as predicted a few years ago, we still expect the quality of digital city solutions to mature significantly, particularly as networks of sensors become more intelligent and integrated (the IoT) and as costs drop as volumes grow. In the UK and in particular internationally the evidence of successful digital services and the associated benefits to cities and regions will rapidly increase. Here in the UK the case for cities and regions to invest in digital services will be increasingly compelling. So the focus from 2015 should gradually shift from running small scale pilots, to supporting more widespread implementation.

However as our cities design how they will deploy digital technology to make their cities more attractive, this is our one chance to ensure that it is done the correct way. Our cities must be inclusive and designed to meet the needs of all their population, rather than a technological concept to optimise business performance.

At the extreme we can imagine 2 fictional future cities:

- City One uses proprietary technology designed by an alliance of a major supplier and public officials. The major supplier has built several models of this city in different countries around the world. The city authority collects information on its citizens through smart meters, pervasive CCTV, number plate recognition and in-car systems. Digital enclaves provide superior Internet access and digital services to those people and businesses that can pay for it; while other areas are poorly served and become no go areas for the privileged. The city makes choices for the citizen, encouraging them to act the way it wants. It is in control.
- City Two develops digital services through co-production with its people, communities, charities, universities and private sector to create greater opportunities for all. The services are right for its people. It has not simply

copied what exists elsewhere, it has understood and adapted them. The city has pervasive broadband access, effective integrated transport systems and pleasant public spaces where people can meet to work, shop, socialize, educate or entertain themselves. Everyone can choose to participate.

We need to ensure that our cities look more like the latter.