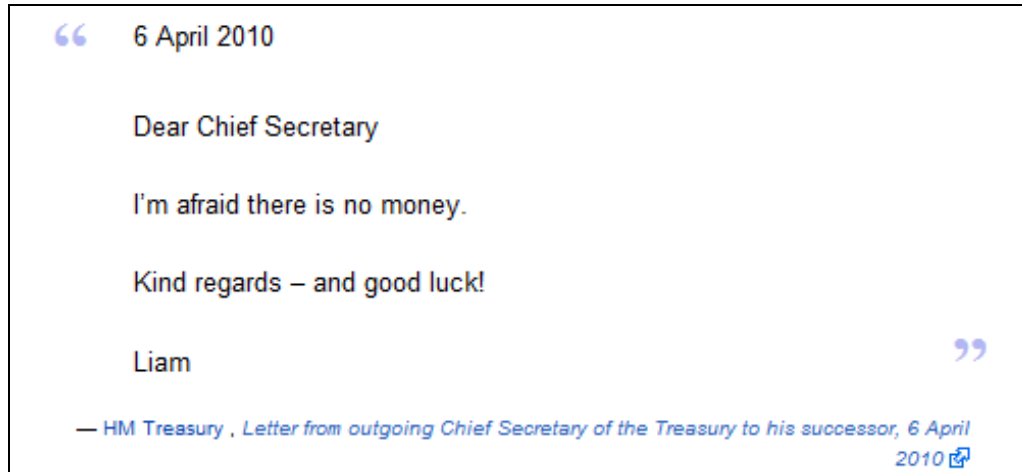


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## There is no money: Government services in a time of austerity

Blue-sky thinking on how Government can use digital to cut cost, and improve front-line services

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## 1 By George, I think he's got it!

2010 was the year the chickens came home to roost for the UK economy. A perfect storm brewed combining a new Government keen to blame its predecessor for profligacy, a global economic recession, an annual deficit of £159.2 billion<sup>1</sup> and a national debt of almost £1 trillion<sup>2</sup> on official figures and increasing exponentially to the tune of £4.8 trillion on unofficial ones<sup>3</sup>. The Institute of Economic Affairs (IEA) has calculated that the national debt is £78,000 for every person in the UK<sup>4</sup>. In short, the country is broke.

With George Osborne talking up an "age of austerity" well before the 2010 election<sup>5</sup> and the Tories well-known philosophical objection to high levels of Government spending<sup>6</sup>, it seemed obvious that when Mr Osborne became Chancellor in May 2010 that his answer to solving Britain's travails would be a combination of 'swingeing' budget cuts and tax increases. Indeed, as Chancellor, Osborne has mandated a massive overhaul of the previous spending habits. The emergency budget released on 22 June 2010 delivered a balance of spending cuts to tax rises of 77% to 23% respectively.<sup>7</sup>

The emergency budget summarised the initial cuts and taxation proposals as follows:

Fiscal measures	Budget and spending measures
<b>2.5% VAT Increase<sup>8</sup></b> From 17.5% to 20.0%	<b>Freeze on child benefits<sup>9</sup></b> For the next three years
<b>Tax credits and public service pensions to rise in line with CPI rather than RPI<sup>10</sup></b> Saving over £6 billion a year by 2015	<b>40% cuts across Whitehall<sup>11</sup></b> An estimated one million jobs lost
<b>3% Corporate tax reduction</b> From 27% to 24%	<b>Pay freeze on all public sector workers<sup>12</sup></b>
<b>28% Capital Gains Tax Rate<sup>13</sup></b> From 18% to 28%	<b>Housing Benefit cuts<sup>14</sup></b> Allotment cut to £400 - expected to save £1.8 billion
<b>Levy on banks<sup>15</sup></b> Raising £2 billion a year	<b>Cancellation of schools re-building programme<sup>16</sup></b> 715 projects will be terminated
<b>£1,000 increase in personal income tax allowance<sup>17</sup></b> 880,000 taken out of income tax bracket	<b>State pension age increase<sup>18</sup></b> New age of 66

In addition to the above, the much-awaited (and somewhat dreaded!) Comprehensive Spending Review (CSR) was announced on 20th October 2010. This had a further series of announcements, focusing on budgetary cuts to government departments and other public-sector bodies. The key points of the CSR were as follows:

Budget and spending measure <sup>19</sup>	Budget and spending measure <sup>20</sup>
About 490,000 public sector jobs likely to be lost	Average 19% four-year cut in departmental budgets
£7 billion in additional welfare budget cuts	Retirement age to rise from 65 to 66 by 2020
NHS budget in England to rise every year until 2015	Structural deficit to be eliminated by 2015
Bank levy to be made permanent	English schools budget protected
Police funding cut by 4% a year	Regulated rail fares to rise 3% above inflation
£2bn extra for social care	192 QUANGOs <sup>21</sup> axed or merged with other bodies <sup>22</sup>

## 2 On the front-line

The combination of these measures means that, in particular, cuts to front-line services by 2014 were estimated to be £81 billion<sup>23</sup> either as a result of by cutting them directly or by indirectly cutting the budget of the Government department that funds the particular service. So what are front-line services and why should anyone care more about them any more than any other type of service?

Front-line services are public services that are provided directly to a typical citizen, business or organisation. So, hospitals, councils, public transport, benefits offices, refuse and recycling pick-ups would all count as prime examples; prisons, departmental back-offices, professional services and IT would not. Examples of the Government's recent commitment to these services (and others) are detailed below:

Service area	Examples	Workforce	Budget/Year (in £m)
Health	<ul style="list-style-type: none"> <li>Nurses</li> <li>Doctors</li> <li>Administrative staff</li> <li>Maintenance staff</li> </ul>	1.7 million <sup>24</sup>	£119,800 <sup>25</sup>
Education	<ul style="list-style-type: none"> <li>Teachers and faculty</li> <li>Administrative staff</li> <li>Maintenance staff</li> </ul>	662,000 <sup>26</sup>	£85,600 <sup>27</sup>
Government departments, NDPBs <sup>28</sup> and QUANGOs <sup>29</sup>	<ul style="list-style-type: none"> <li>Civil servants</li> <li>Census and visa workers</li> </ul>	626,750 <sup>30</sup>	£20,513 <sup>31</sup>
Local Authorities	<ul style="list-style-type: none"> <li>Civil servants</li> </ul>	2 million <sup>32</sup>	£22,000 <sup>33</sup>

	<ul style="list-style-type: none"> <li>Local government officials</li> <li>Community workers</li> <li>Sport centre workers</li> <li>Recycling and rubbish collectors</li> </ul>		
<b>Emergency</b>	<ul style="list-style-type: none"> <li>The Police</li> <li>Ambulance crews</li> <li>Fire departments</li> </ul>	15,700+ ambulance <sup>34</sup> , 143,000 police <sup>35</sup> , 35,000 full-time and 18,000 retained fire fighters <sup>36</sup>	£34,700 <sup>37</sup>
<b>Defence</b>	<ul style="list-style-type: none"> <li>Royal Air Force</li> <li>Royal Navy</li> <li>British Army</li> </ul>	175,000 <sup>38</sup>	£43,900 <sup>39</sup>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>Tube drivers</li> <li>Bus drivers</li> <li>Maintenance workers</li> </ul>	98,500 <sup>40</sup>	£21,500 <sup>41</sup>
<b>Work and Pensions</b>	<ul style="list-style-type: none"> <li>Contact centre workers</li> <li>Administrative staff</li> </ul>	100,000 <sup>42</sup>	£117,200 <sup>43</sup>
<b>Legal Services Commission</b>	<ul style="list-style-type: none"> <li>Legal advisors</li> <li>Community Legal Services</li> </ul>	1,700 <sup>44</sup>	£2,100 <sup>45</sup>

Cuts to these types of service can be a PR disaster for any government, with stories of little old ladies being left on hospital stretchers for days on end or over-worked benefits staff struggling against the odds being splashed over the red-tops. However, if the Tories truly believe that the public sector is inefficient as a whole, there's no reason to suppose that front-line services should be inherently any less inefficient than other types of service and therefore any more sacrosanct.

However, the public just doesn't like to think of its more lowly-paid public employees being hit over the head or that services might just disappear when they might need them. Conceptual cuts are fine; actual cuts that might affect me and my family are an anathema. Indeed, the term 'front line services' conjures an implicit meaning of significance – 'on the front line', 'in the trenches', 'at the coal-face' and so on. The loss of these services might leave the UK as a whole unable to function as effectively. Not only that, but since front-line services are primarily utilised by the poorer social classes, cuts to these services are more likely to be disproportionately felt by more impoverished or needy citizens.<sup>46</sup>

So, being seen to protect front-line services as much as possible may not be the right thing to do economically, but politically it is critical. After all, rightly or wrongly, the Cameron Government does not wish to be seen as a throwback to the Thatcher Government in the 'bad old days' of the 1980s, where society didn't exist and the Tories were seen as being economically effective, but somewhat heartless.

Despite this, the Government is being forced to make some cuts to these areas to maintain some equity to government spending across the board. The proposed budget changes to some of these front-line services include the following:<sup>47</sup>

- *National Health Services (NHS)*: current spending up 1.3%; capital spending down 17%
- *Local Councils*: £1.2 billion cut in June<sup>48</sup>; 7.1% annual fall in council budgets; current spending down 27%; capital spending down 100%.
- *Department for Education*: current spending down 3.4%; capital spending down 60%; direct funding to schools in England protected and budget will rise from £35 billion to £39 billion; £2.5 billion "pupil premium" for disadvantaged pupils confirmed.
- *Department for Business Innovation & Skills (BIS)*: current spending down 25%; capital spending down 52%; administration costs cut by £400m. Train to Gain programme axed; university teaching budget cut by 40%; further education budget cut by 25%; science budget frozen; funding for 75,000 adult apprenticeships a year.
- *Home Office*: current spending down 23%; capital spending down 49%; police budget cut by 4% a year, focused on bureaucracy rather than manpower; UK Border Agency budget to fall 20%. Counter-intelligence budget to fall 10%.
- *Defence*: current spending down 7.5%; capital spending down 7.5%; the RAF and navy will lose 5,000 jobs each, the Army 7,000 and the Ministry of Defence 25,000 civilian staff. Harrier jump jets, the Ark Royal

aircraft carrier and Nimrod spy planes are being axed; key spending decision on Trident to be delayed until 2016.

- *Department for Energy and Climate Change (DECC)*: current spending down 18%; capital spending up 41%; plan for tidal barrage on the Severn estuary scrapped; £200m funding for wind power development; £1bn for green investment bank.
- *Transportation*: current spending down 21%; capital spending down 11%; £30bn set aside for capital spending (including Tyne and Wear Metro, Tees Valley bus network and Crossrail in London); rise in regulated cap on rail fares to 3% above inflation for three years from 2012.
- *Department for Work and Pensions (DWP)*: state pension age to reach 66 by 2020 saving £5 billion a year; reform of public sector pensions to save £1.8bn by 2015; Winter fuel allowance, free bus passes and TV licences for 75-year-olds protected; cuts to child benefit for higher rate taxpayers to generate £2.5bn; £2bn investment in new universal credit; a further £7bn in welfare savings planned on top of £11bn already announced; a new 12-month time limit on the employment and support allowance; proposed 10% cut in council tax benefit budget; under-35s only able to claim housing benefit for a room rather than a whole property.
- *Department for Justice (DoJ)*: current spending down 23%; capital spending down 50%; plan for new 1,500-place prison to be dropped; 3,000 fewer prison places expected by 2015; £1.3bn capital investment in prison estate..

So how is the Government going to make these cuts whilst minimising any damage, both to its own reputation and – more importantly – to the UK public, UK businesses and UK organisations?

### 3 The first cut is the deepest

When a large private sector organisation begins to get into trouble, it will often take action and cut the roles it considers to be the least effective or the most easily expendable. This can often be measured quite dispassionately and decisions about the most effective route forwards can be made quite quickly.

When the same thing happens to the public sector, deciding which front line services are least effective and most easily expendable can be hugely subjective, since not only are front-line services essential for those who depend upon them (and whom, let's not forget, vote), but ministers, being highly political animals, like to maintain their own little fiefdoms as long as possible. They are usually not too happy about cuts to their own departments.

More importantly than the outcomes for individual citizens, organisations or politicians, society as a whole feels the impact of the cuts in a much wider context and for an extremely long time. What price to society can be put on the young man whose benefits are cut who instead turns to drug-dealing, causing misery and health issues for his 'customers' and who ends up in prison?

So, walking that tightrope, the Government has decided to implement a strategy performing rigorous cuts. These will be achieved by utilising different approaches, including cutting the jobs of those providing front-line services, but also in reducing excessive and unnecessary spending:

#### 1. No longer filling roles when people leave their jobs <sup>49</sup>

*"Every year, something like 400,000 jobs become available as people leave [the public sector]...not filling some of those jobs is a very good way of saving money."*

*David Cameron  
9 April 2010 <sup>50</sup>*

The Government believes that some of these jobs could successfully be cut without adversely affecting the economy. They estimate that this will save about £1-2 billion the first year and the loss of up to 40,000 jobs (i.e. only losing 10% of the jobs that become available in a given year).<sup>51</sup>

Three main outcomes from this type of cut are possible:

- a) There is an increase in efficiency and effectiveness, as the reality of the economic situation kicks-in to the public sector consciousness, resulting in more responsibility and output per worker.
- b) There is a decrease in efficiency and effectiveness. Employees can only take on so many responsibilities before productivity is decreased substantially. If this line is breached, then efficiency within the organisation will decrease. This could potentially mean that fewer staff will be able to perform their jobs adequately.<sup>52</sup>
- c) The most likely possibility is that there will be an increase in efficiency and effectiveness initially, but that over time this will decrease. High task responsibility is good for a short amount of time, but after a while, workers get burnt-out (due to an inability to say 'no' to more tasks and the difficulty in delegating these tasks).<sup>53</sup> Having a large amount of a wide variety of tasks to do over the longer term typically saps motivation and morale; this is likely to make it difficult to maintain high productivity levels.

#### 2. Cutting those jobs that are least necessary <sup>54</sup>

This approach will see the role disappear as well as the particular person's employment (i.e. it's about redundancies). If no longer filling roles isn't enough to wake the public sector unions up, this approach surely will be. The question will be can it be done, whilst keeping the public on board and ensuring we don't descend into a wave of 1970s-style strikes and an inability to bury the dead or remove refuse from the streets?

Whilst this is clearly an effective way of saving money straight away, there are some major issues for reducing the strains on the government purse over the long-term:

- a) This approach might very well lead to a steep rise in unemployment. It is estimated that cuts could lead to additional unemployment of 1.3 million over the next five years<sup>55</sup>, including the approximately 490,000

public sector jobs that are likely to be lost.<sup>56</sup> Increasing unemployment rates could create a cyclical effect within the economy, because more unemployed citizens are likely (at least in the short and medium term) to need access to more front-line services that cannot be performed adequately or inexpensively due to the cuts.

- b) In addition, the decreases to the government wage bill would need (at least in part) to be balanced against:
- Increased social security spending (for these ex-public sector employees)
  - Decreased taxation (if these ex-public sector employees now have no income to be taxed)
  - The social problems (health, regional issues, crime etc.) that come from unemployment

### 3. Reducing excessive and unnecessary spending in discretionary areas

Much has been made in light of the MPs' expenses scandal of the unnecessary and extravagant nature of some areas of public spending. As such, the government has promised to reduce spending on areas such as travel costs and consultancy. For example, all MPs and civil servants must now travel in Standard Class as opposed to First Class, which was the norm previously.<sup>57</sup> This is forecasted to save £1.15 billion.<sup>58</sup> Other areas that the government will restrict spending on are as follows:<sup>59</sup>

- a) £95 million through savings on IT spending
- b) £1.7 billion from delaying and stopping contracts and projects, including immediate negotiations to achieve cost reductions from the major suppliers to government
- c) £170 million from reductions in property costs
- d) £600 million from cutting the cost of QUANGOs
- e) £520 million by reducing other lower-value spending (all figures sourced from HM Treasury)

None of these approaches is ideal from a front-line service provision point of view and clearly the Government would prefer for the medicine to be a little less harsh (or at least to be able to offer a spoonful of sugar in the taking of it). What, then, can the Government do to protect the delivery of front-line services as far as possible? And how can digital services provide some of the answer to this?

## 4 2,500 to 1? (well, 205 anyway)

The previous Labour Government launched the 'Transformational Government' agenda in 2005 with the aim of using it as a blueprint vision for the delivery of public services in the 21st century, using the power of new technologies to change the way Government works. It stated:

*"Over the next decade, the principal preferred channels for the delivery of information and transactional services will be the telephone, internet and mobile channels – as well as the increasingly important channels within the digital home. Using customer insight, government will drive take-up of the best new digital channels and exploit mobile technologies"*<sup>60</sup>

It also stated:

*"The web presence of government will be rationalised. For each government organisation the number of different web sites it uses will be reduced and consistency introduced in line with its overall communications strategy. For customer information, self-service transactions and campaign support, services will converge on Directgov and Business Link as the primary on-line entry points; service-specific or stand-alone solutions will be phased out."*<sup>61</sup>

Though the Labour Government was operating over 2,500 websites in 2005<sup>62</sup> steps have already been taken towards a rationalisation of these under 'Transformational Government' and the present total number of government websites stands at 820.<sup>63</sup> The three so-called government 'super sites' Directgov, Business Link and NHS Choices are increasingly the place to find government services (the first two of these supersites have 'consumed' a huge number of the previously existing Government websites through 'convergence' or, at least, a signposting to them where convergence was not appropriate).

However, there is a widespread perception of inefficiencies in the government's approach to commissioning digital services:

- A few government websites have been cited as being very expensive in total (e.g. the NHS Choices site at £21 million and the Business Link site at £35 million per annum)<sup>64</sup>
- A few government websites have been perceived as being very expensive on a per visit basis (e.g. uktradeinvest.gov.uk at £11.78 per visit; businesslink.gov.uk at £2.15 per visit; and research4development.info at 87p per visit)<sup>65</sup> when compared with an average cost per visit for Government websites in 2009-10 of 17p<sup>66</sup>
- Competition between departments has led to money being wasted in a number of cases (e.g. the Department for Energy and Climate Change (DECC) and the Energy Saving Trust (EST) bidding against each other for Google search terms)<sup>67</sup>
- There is a lack of common infrastructure, software and hosting services<sup>68</sup>

Consequently, the new government expects to shut down 75% of the 820 existing sites, leaving just 205 government websites, and to halve the costs of the remainder by things such as moving onto common infrastructure platforms".<sup>69</sup> In addition, Tom Watson, the Labour Government's Parliamentary Secretary to the Cabinet Office said in 2008:

*"Our future thinking must view government more like a giant open source community"*<sup>70</sup>

This will, no doubt, be on the current Government's minds too. Because of the cost savings that open source allows (e.g. obviating the need for expensive software licenses across government) there is no reason to suppose that the new Government is in any way unaligned with that view. A shift from proprietary standards will save the government almost £600 million a year.<sup>71</sup>

Clearly, there is need for government agencies to be able to justify expenditure on digital services to regain both governmental and public trust of their efficacy. This will result in a much greater need to be able to prove effectiveness, not just in terms of digital outputs (e.g. numbers of site visitors; how long these visitors spent on

the site etc.), but also in terms of societal outcomes (i.e. having some kind of 'audit trail', no matter how slight, to positive improvements to - for example - obesity rates, teenage pregnancies, anti-social behaviour and so on).

Agencies will need to be able to mount a charm offensive alongside a robust business case for the services that they are going to be proposing.

In addition to these issues, the government is typically slow to utilise new technologies to best effect. Whilst they have been very gung-ho in commissioning digital services, they have been slow at giving up more expensive 'traditional' alternatives like printed materials, events, direct marketing and PR. For example, whilst it is very difficult to obtain government-wide figures for spending on these areas, we might extrapolate from a couple of suitable proxies:

- The Central Office of Information annual report indicates that the 2009-10 government procurement fee for procuring print publications was £27.9 million, for procuring events was £21.1 million, for procuring direct/relationship marketing was £60.3 million and for procuring PR was £19.4 million.<sup>72</sup>
- The website for transparency of public spending places a figure of £3.8 billion for the fiscal year 2010 on broadcast and publishing services spending by central government and local authorities.<sup>73</sup>

Clearly, the COI figures exclude the actual cost of the media being bought. However, as the COI charges a commission fee of 1.75% to buy media, procure agencies and negotiate contracts, with an average commission rate thought to be of around 10%<sup>74</sup> this equates to an actual Government spend on print through the COI of between £279 million and £1.8 billion. This is a big range, but at whichever end of the scale it is a huge amount and, obviously, the COI by no means procures *all* government services. Combined with this government still continues to spend huge amounts on outdated *digital* technologies, for example, sending CD ROM tax updates to all UK employers<sup>75</sup> regularly throughout the year, a hugely disproportionate cost for the small amount (9%) of UK businesses who do not have access to the internet.<sup>76</sup>

## 5 How can digital help improve front-line service provision?

Government has either already put in place or is putting in place a number of cross-cutting and/or infrastructural initiatives that facilitate digital services. These include the following:

### In place:

- *Accessibility*: developing a set of accepted accessibility standards to ensure that users who have visual, hearing, cognitive or motor impairments are not excluded from public-sector services. Government mandates that all public-sector services are developed to the World Wide Web Consortium's (W3C) AA standard as stated within the Web Content Accessibility Guidelines (WCAG) 1.0 ([www.w3.org/TR/WCAG10/#priorities](http://www.w3.org/TR/WCAG10/#priorities) and [www.w3.org/TR/WCAG20/#intro-layers-guidance](http://www.w3.org/TR/WCAG20/#intro-layers-guidance)).
- *e-Government Interoperability Framework (e-GIF) standards*: a practical approach to separate public-sector content from web-page layout and streamlining the delivery of this content into one unified technology. It allows the public and businesses better access to public services by freeing public sector organisations from any interoperability issues that may arise from the use of disparate technologies.
- *e-Government Metadata Standards*: this defines the metadata requirements that UK government websites are required to follow. It lays down the elements, refinements and encoding schemes to be used when creating metadata for information resources or designing search interfaces for information systems. It helps to ensure maximum consistency of metadata across public sector organisations.
- *Security Policy Framework*: this sets out the security requirements for the procurement and acceptance of e-Government services and their implementation. It describes the approach to assuring the presence and proper operation of the security counter-measures put in place to meet the security requirements. The security requirements expressed in the framework represent a call for general alignment with best e-commerce practice, to which government believes it must itself conform. It includes things like penetration testing to ensure that unwarranted intruders cannot gain access to public-sector systems.
- *Data.gov.uk*: this is a UK Government project to open up almost all non-personal data acquired for official purposes for free re-use.

### In progress:

- *Government Gateway*: the Government Gateway provides centralised IT services for use by the whole of the public sector. These include authentication, authorisation and a transaction engine for secure and reliable data exchange between citizens, the government and many of its agencies.
- *Government Connect*: This is an initiative led by local authorities, the DCLG and the Cabinet Office providing a common infrastructure for secure electronic interaction between local government, central government and citizens.
- *Single Sign-On (SSO), identity verification and authentication*: Government Connect funds the Single Sign On Portal (SSOP) which has been added to the Gateway portfolio. It will allow citizens, businesses and organisations to create an authenticated, secure session with public-sector online services.
- *G-Cloud*: this is a suggested approach from government to have a trusted public-sector brand for cloud computing. It will facilitate shared services including: business services; utility applications; common public sector applications; a development platform for custom applications; infrastructure and service management. The aim of the G-Cloud is to enable cost savings through consolidating buying power, reducing design, procurement and assurance overheads; improved operational efficiency through standardisation and automation; flexibility to scale up and down; sharing infrastructure across departments, enabling high load levels, avoiding purchasing equipment for temporary requirements.
- *G-Digital*: this will establish a series of web services that can be accessed across the public sector across a wide range of government's expected digital needs. The services fall into three broad categories: i) business services (e.g. content management, search, mapping, forms, collaboration, web-based tools etc.); ii) people services (e.g. design, analysis, testing, deployment, support etc.); iii) infrastructure services (e.g. accredited hosting arrangements etc.)
- *Open source*: the Government has a statement of policy on the need to use open standards and open source software wherever possible within government procurement to achieve maximum cost efficiency and savings for the taxpayer.

**Direction of travel:**

- Martha Lane Fox, the UK's Digital Champion was asked by Francis Maude (Secretary of State for the Cabinet Office) to oversee a strategic review of Directgov. Her open letter in response proposed the following recommendations:<sup>77</sup>
  1. Make Directgov the government front-end for all departments' transactional online services to citizens and businesses, with the teeth to mandate cross government solutions, set standards and force departments to improve citizens' experience of key transactions. She identified that shifting 30% of government service delivery contacts to digital channels would deliver gross annual savings of more than £1.3 billion, rising to £2.2 billion if 50% of contacts shifted to digital. Concluding that Directgov should be the "citizens' champion with sharp teeth" for **transactional service delivery**.
  2. Make Directgov a wholesaler as well as the retail shop front for government services & content by mandating the development and **opening up of Application Programme Interfaces (APIs) to third parties**.
  3. Change the model of government online publishing, by putting a **new central team in Cabinet Office in absolute control of the overall user experience across all digital channels, commissioning all government online information from other departments**.
  4. Appoint a **new CEO for Digital** in the Cabinet Office **with absolute authority over the user experience across all government online services (websites and APIs) and the power to direct all government online spending**.

It is likely that some of these measures will be adopted, at least in part.

These initiatives are really helpful to the development of the government and the wider public-sector's interaction with citizens, businesses and organisations. These interactions are typically across one of the two faces to front-line Government service provision (i.e. either via the various departmental 'vertical' silos or 'horizontally' across government). We explain these faces a bit more below.

**Vertical:**

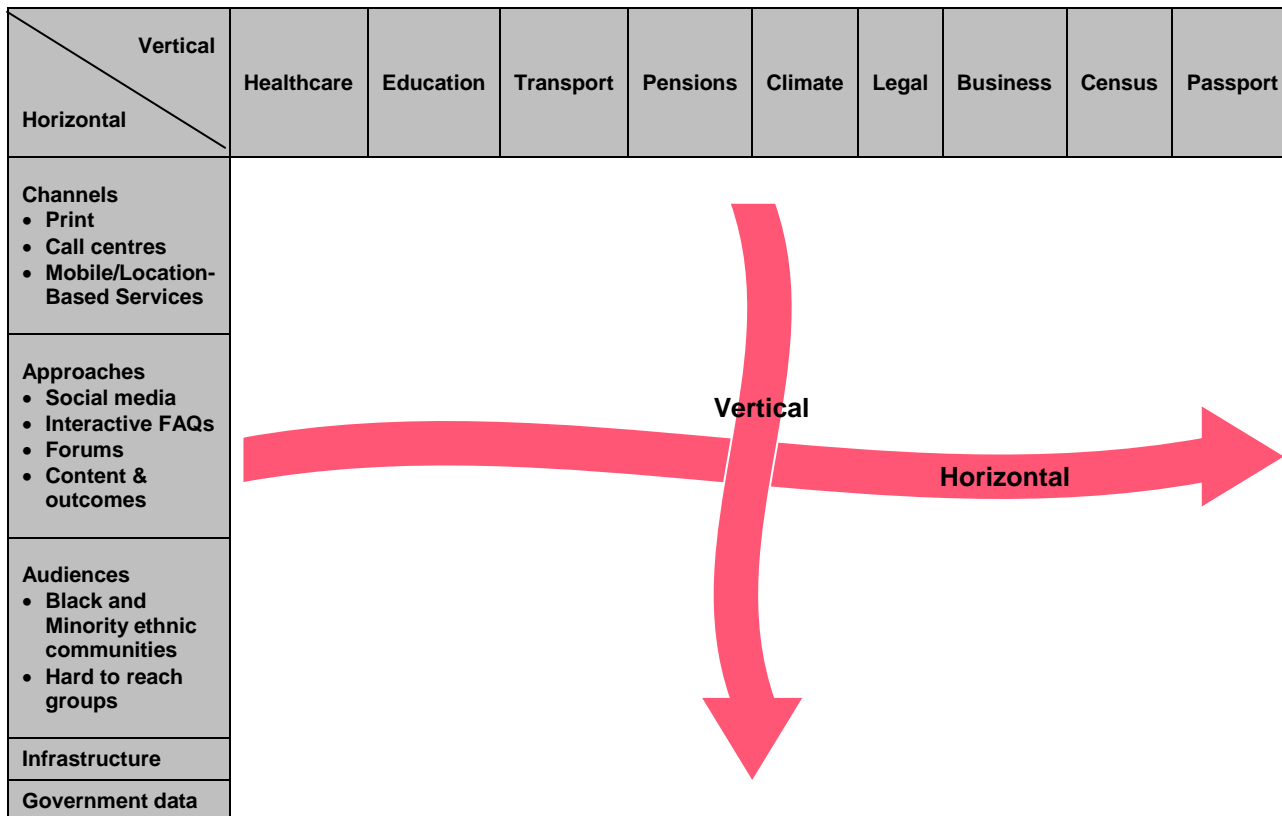
Certain 'vertical' government departments provide (either directly or indirectly through their funding) front-line services to the public:

- Directly (e.g. health services, education, transport, business services, pensions etc.)
- Indirectly (e.g. legal services, the census, passport services etc.)

**Horizontal:**

Similarly, working horizontally across government there are various ways to provide front-line services or groups to focus these services on. These include:

- Particular channels (e.g. printed materials, call centres, face-to-face appointments etc.)
- Particular 'approaches' to service provision (e.g. social media, interactive FAQs, forums etc.)
- Particular audiences (e.g. Black and Minority Ethnic communities, hard-to-reach audiences etc.)
- Common infrastructure: the hardware and services that the front-line services are provided utilising
- Consolidation of data across government



Much more can clearly be done, both at a pan-governmental level and in terms of specific services, whichever 'face' of government these services work across. Digital is able to help with solutions to both these vertical and horizontal approaches to service provision. We look at some of these approaches in a bit more detail below in the sections that follow.

In appropriate cases we look at how these cuts might affect typical British households:



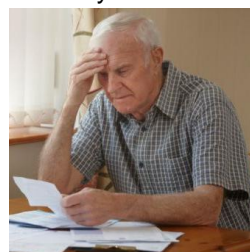
Mr. And Mrs. Prasad, a couple in their forties and their daughter Geeta who is twelve



Ms. Brown, a single mother in her thirties and her son Johnny who is four



Ms. Jones a singleton in her twenties



Mr. Clark, a retired widower in his seventies

We have not let 'the ways things are done now' hamper our thinking. As a result, whilst many ideas that we discuss below are very much grounded in incremental improvement, a number of others are quite fundamentally different approaches to the status quo. There may, therefore, be very many good internal reasons why they may be impracticable at this time, but if we are not able to 'think the unthinkable' now, when will we be able to?

## 6 Vertically challenged

### 6.1 Healthcare

#### 6.1.1 The current healthcare model

The Department of Health is charged with providing the following services across the UK:

- Health care: hospitals, GPs surgeries, medicines and pharmacies, entitlements, personal health budgets, dentistry, eye care services etc.
- Public health: immunisation, management of epidemics, violence against women and children etc.
- Social care

All health-related front-line services are under the jurisdiction of the National Health Services (NHS) which is comprised of the following services:

- Hospitals
- Doctors, nurses and administrative staff
- Walk in centres
- Community health services
- Pharmacies

#### 6.1.2 Plans for cuts to front-line services

The healthcare budget was relatively unscathed in the October Comprehensive Spending Review (CSR):

- *NHS*: £4.35 billion cut announced by the previous government in 2009.<sup>78</sup> The CSR announced that the NHS in England will see its budget rise by 0.4% over the next four years and there will be an extra £2 billion for social care by 2014-15.<sup>79</sup>
- *Nurses*: 10,000 positions cut<sup>80</sup>
- *Doctors*: freeze on recruitment of doctors,<sup>81</sup> NHS Trusts planning to cut 651 hospital doctor jobs in next few years,<sup>82</sup> hospitals across South West intend to remove 280 posts for junior hospital doctors by 2013.<sup>83</sup>

#### 6.1.3 Current example digital initiatives

These include:

- *NHS Direct* ([www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk)): a phone and web-based medical advice service with a triage system for specifying symptoms and gaining health advice
- *NHS Choices* ([www.nhs.uk](http://www.nhs.uk)): the NHS portal site, with links to NHS Direct, but with a lot more general health service information (e.g. finding and choosing NHS services; a Health A-Z; 'Live Well' - topics on healthy living; Carers Direct; Health news etc.)
- *Summary Care Record* (SCR):<sup>84</sup> this emergent system is the first step towards putting patient records online.<sup>85</sup> X-rays and prescriptions, along with medical records, will be viewable via this SCR.
- *Electronic health records*: these recently introduced electronic health records allow patients to add to their personal health records including things such as weight, blood pressure, cholesterol levels, amount of alcohol drunk, medication taken and the date and time of any appointments.

#### 6.1.4 Current issues

One major issue for citizens is not accessibility to information in general, but rather access to their personal health information. The main way currently to get information about your own health is to contact your doctor's surgery and personally pick up a copy of your patient records. Whilst a lot of this might be contained online within the Summary Care Record, one issue with the Summary Care Record system is that not all individuals' records will be viewable by healthcare professionals (as there is an opt-out) and the patient has no direct access to these anyway (the patient has to contact their doctors and pay a fee to gain access to the service). Whilst a step in the right direction, the electronic health records, do not provide the patient with any more information than they already know (as they have to fill it in!).

Another issue with the SCR is that one healthcare professional may write something about a patient's health on a paper record whilst another may use the SCR, so there is no alignment of practice and records may get quickly out of date without due care and attention. As of now, the service is in its Beta phase and has only been utilised by a small number of practitioners.

### **Some potential digital improvements to healthcare services:**

Below we provide some initial thoughts about ways that front-line healthcare services could be improved through the further use of digital technologies:

#### **1. Repeat prescriptions**

Currently the patient, perhaps Mr. Clark, goes to the surgery, waits in line and then has to fill in an order form. After 48 hours the prescriptions are ready, so he then has to go back to the surgery and wait in another queue, collect the prescription and go to the pharmacy (probably waiting in a third queue). Fingers crossed that the pharmacy has the medicines in stock, if not, it's another day or two days wait and more queues!

We envisage a digital solution to this where he logs in to his prescription account and simply orders the repeat prescription online. The surgery receives the order, the GP authorises it with one click and without Mr. Clark having to leave his home (which is great if he's unwell!). At a later phase, the order might now get forwarded straight to the pharmacy, where he (or his proxy if he's really bed-ridden) can collect the medicine(s).

Under this system, everything would take a maximum of a few hours rather than days currently and potentially involves no more than three people. Nothing is printed on paper; there are no queues; and no repeat trips. The saving is not only time and money, but probably also CO2 emissions as well. It might even free up the receptionist's time or obviate the need for quite so many receptionists (saving further money!).

#### **2. Appointments booking**

Currently Mr. Clark has to go to the surgery and wait in (another) queue. After reaching the desk, the receptionist gives him the date of his next appointment, on a professionally printed piece of paper, which he takes home and promptly loses. Next time he arrives, he needs to let them know he is there which might require another queue or using the self check-in touch screens (available in some surgeries). He finally meets the doctor, and the chances are he will end up with a bunch of prescriptions (see idea 1 above).

We envisage a digital solution to this where Mr. Clark logs in to his appointment account. This has the surgery's name and the available doctors. He is able to click to book an appointment and then can see on a calendar which appointment slots are available. Once booked, on the given date, he goes to the surgery, and waits to see his GP. The GP may then prescribe something (see idea 1 above) or provide the patient with a referral (see idea 3 below).

A similar system exists online currently, but solely for hospital appointments, not for GPs:

[www.chooseandbook.nhs.uk/](http://www.chooseandbook.nhs.uk/).

#### **3. Arranging a referral**

Once Mr. Clark has actually managed to see the doctor he may be given a referral. In many cases this means a very large print out of potential referral units for his particular ailment. Often he might then be expected to call each of the various numbers provided to see what appointments might be available. This is invariably done during a lunch hour when half the country is also trying to get through to the main hospital switchboard number (as the numbers provided are never directly to the referral unit). Once the phone has rung a few hundred times someone may decide to pick up - hopefully he's been put through to the correct unit, but there are no guarantees! At this point, he may need to quote the password he's been given, but no doubt mislaid. Once he has finally managed to book a referral, he then has to wait for another few weeks before the referral confirmation comes through, with the time and date of the appointment on.

Instead, we envisage a digital solution where the GP logs in to a pan-NHS referral unit calendar and books the referral for Mr. Clark in a manner similar to that outlined above. No phone calls need to be made, and there is no printed text. Mr. Clark could also stipulate that he doesn't want to receive a mailed-out letter and is happy for an email confirmation - instantaneous, less cost and more patient contact data for NHS marketing (if he opts-in).

#### 4. Emergency medical information

Mr. Clark has had a horrific road traffic accident on holiday in another part of the country and is taken to A&E in an unconscious state. The A&E team need to know lots of emergency information about him as soon as possible. It's touch and go. Unfortunately, Mr. Clark's notes are stored at their GP surgery and his hospital admission record is at his local hospital 500 miles away. It's 2am on a Saturday night, so the GP's office is closed and his local hospital is suffering from Saturday Night-itis, so doesn't pick up the phone when a member of the A&E team tries to get through. The A&E team end up accidentally administering some drugs that he is allergic to. Sadly, Mr. Clark dies.

An alternative scenario might see a variant of the SCR or Mr. Clark's healthcare record stored on his phone in the form of a Smartphone application. This application is able to provide a wealth of information to the A&E team about him to ensure that they realise that he is allergic to penicillin, gets anaphylactic shock with nut-based products or is one of the more than two hundred minor blood groups that can complicate blood transfusions. Perhaps under this scenario an alternative drug is found and Mr. Clark survives.

In this scenario, his phone might be locked and may require a PIN number to gain access to the application. What then? Perhaps the application developers can work with the phone operating system providers to allow patients (particularly with unusual conditions) to be able to opt-in to allow pertinent details to be accessible to anyone who has the phone in their possession in much the same way that emergency numbers are able to be contacted by anyone regardless of whether they are the owner of that phone or not.

Some of these technologies are already in use in isolated practices (e.g. Balham Park Surgery which includes a section for Online Appointment booking and Fast Track Prescription ordering).<sup>86</sup> There is also a system available called 'Healthspace', which is designed as a free secure personal health organiser in a digital format. The website has links to the 'Choose and Book' system<sup>87</sup>, access to one's Summary Care Record and also informational videos and a help section.<sup>88</sup> However, there does not appear to be a wide-scale, joined-up use of these sorts of best practice.

Clearly, there are issues here around the security of patient data, both in the transfer and storage of it. However, these issues are common to many (if not most) government services and the Government Gateway, Single Sign-On (SSO), identity verification and authentication initiatives discussed in [section 6](#) above (within the full version of this white paper), which are attempting to resolve these issues.

## 6.2 Education

### 6.2.1 The current education model

As required by law, all 5 to 15 year olds must go to school, whether it be public or private. Approximately 8.5 million students attend schools in England and Wales and are taught the National Curriculum introduced in 1992.<sup>89</sup> About one third of those students go on to higher educational learning, which is not mandated by the government. Six percent of the total student population goes to either a private school or is home schooled.<sup>90</sup>

### 6.2.2 Plans for cuts to front-line services

- Total educational cuts: £1 billion<sup>91</sup>
- Teachers cuts: two-year pay freeze<sup>92</sup>
- Schools building programme cut: suspension of around 700 school building projects<sup>93</sup>

### 6.2.3 Current example digital initiatives

These include:

- Teachers' TV: a website and former free-to-air television channel, which provides video and support materials for those who work in education in the UK, including teachers, school leaders, governors, teacher trainers, student teachers and support staff. Through engaging videos, practical resources and an active online community, Teachers TV supports the professional development of anyone working in school, enabling them to widen their skills, develop their practice, and connect with others in the field. It is funded by the Department for Education (DfE), but is editorially independent of government.
- Leeds University has introduced digital textbooks for their medical students so that they do not have to carry heavy books around on their hospital visits. An application that incorporates these digital textbooks has been installed onto new iPhones to be given to each student (and returned at the end of the academic year).<sup>94</sup>

### 6.2.4 Current issues

When the new government came into office four big news stories with regards to the educational agenda came to the fore:

- The advent of 'Free Schools' in the UK: allowing teachers, charities and parents to set up new schools – Free Schools – in response to parental demand. Free Schools are to be independent state schools run by teachers rather than bureaucrats or politicians and are accountable to parents. £50 million of funding was re-allocated to provide capital funding for Free Schools up to 31 March 2011.
- The scrapping of the £55 billion 'Building Schools for the Future' programme. This suspended building projects for 715 new schools.<sup>95</sup>
- The additional announcement of the scrapping of many QUANGOs, including the School Food Trust and the Teachers' TV Board.<sup>96</sup>
- The government plans to save £80 million by getting rid of the schools' technology agency Becta, not good news for the advent of digital in schools.

#### Some potential digital improvements to education provision:

Below we provide some initial thoughts about ways that front-line education services could be improved through the further use of digital technologies:

##### 1. Parents' resources

Virtually all of the 'official' DoE educational resources are provided for the educational workforce, but very little is provided as a supporting aid to parents or guardians. As many educational resource materials already exist, and the 'free schools' movement has at its centre the concept of parental power, there's no reason why a lot of the materials on (for example) the teachers TV website, couldn't be presented on a re-skinned 'parents zone' website and marketed directly at parents looking to support little Johnny Brown and Geeta Prasad in their studies.

## 2. Online classrooms

In an environment where the Building Schools for the Future programme has been scrapped there may not be enough habitable classrooms to provide an extended curriculum in a number of the schools affected. This may mean that certain courses, subjects and lessons have to be scrapped, adversely affecting the educational outcomes for little Johnny and little Geeta. In this milieu, there are fantastic opportunities to provide these lessons online from a single school (or other central location) to ensure that no-one misses out. Schools could sign-up Johnny and Geeta for lessons in online classrooms via a scheduled online timetable. A secure two-way video link to the teacher and the other online pupils would enable interaction.

A central pool of interactive pupil resources could also be made available (perhaps, again, re-badging the ones available from Teachers' TV) to provide the necessary classroom materials online. Secure video conferencing solutions for embedding in the website are available from Google, Adobe and others.

Providing the resources centrally provides a number of major benefits from what is, essentially, is a sub-optimal situation (i.e. the lack of new school buildings, due to a lack of money available), these include:

- *Cost savings:* a single teacher could teach hundreds of pupils instead of just thirty or forty pupils, significantly cutting labour costs. In addition, this solution means lower classroom material costs (fewer hardbound books to be bought, as a result of online resources being available), decreased travel costs (no agency teachers or bussing around pupils required) and no local teacher training costs.
- *Time savings:* it's a much quicker solution, enabling Johnny and Geeta's needs immediately when providing a locally-trained teacher in a particular subject may take several months.
- *Helps overcome national shortages:* with this approach Johnny and Geeta may end up having several online classes in specialist subjects (e.g. Mandarin, maths, physics etc.) where there may be a national shortage of specialist teachers.
- *Improved educational outcomes:* children would be able to continue or even adopt courses that would otherwise not be possible. Combined with this, the novelty factor of having some online lessons and being a 'special' pupil are likely to see improved attainment levels (at least initially).
- *Improved teaching standards and monitoring:* as the best centrally available teaching resources in a particular subject can be provided to many more students. The lessons would also easily be able to be monitored to ensure high quality levels.

## 3. Electronic books:

Schools could also provide Johnny and Geeta with their books online through an educational, digital book retailer (Google, Amazon et al). Under this scenario schools would pay licensing fees for the books, though this would be likely to be considerably less than a wholesale or retail hard copy purchase, thus saving considerable sums of money. Clearly, there are some state aid issues around favouring one particular digital book provider over another (i.e. it might be perceived as anti-competitive.<sup>97</sup>), but this could be overcome in a number of ways (e.g. procuring from an array of digital publication companies, or amending the state aid requirement in areas like education where there might be a clear societal benefit in these poor economic times).

## 4. Online Learning Record

Just as there are Summary Care Records (for healthcare professionals) and Electronic Health Records (for patients) in the health sphere, there is no reason why people's learning record could not be put online. This would include all official school-related information, any local authority information, national exam results and gradings and so on. This would provide all the information held about a person's educational career for access either by their parents/guardians or themselves. Parts of this could be made to be public so that (for example) employers could be given access to a page independently verifying a candidate's qualifications. Clearly, there would have to be adequate security around this.

People applying for jobs or university could provide potential employers or the universities with limited access to their qualification record. Perhaps, for verification purposes – as with Companies House – organisations could pay to see this data once the individual had given their permission for access. This approach would mean more efficient processing of the information with all the data in a single database and would also reduce the cost of records access (no more duplicate print-outs of – highly forgeable – exam certificates required).

## 5. Online school libraries

Most schools have a library - 81% of primary schools and 98% of secondary, independent, middle and special schools have a designated library space.<sup>98</sup> Most schools buy books for those libraries (only 1.7% of schools report that there is no budget for the purchase of stock and services<sup>99</sup>) and in fact a significant number (16.5%) are reporting an increase in their stock purchasing budgets.<sup>100</sup> However, there is a problem of children not taking out books from these library facilities and a general dilution of services. The Independent reports that:

*"School libraries are not compulsory and there [is] anecdotal evidence of libraries closing, dwindling budgets for resources and staff who are not connected with the school's teaching team."<sup>101</sup>*

However, the UK population (including children and teenagers<sup>102</sup>) increasingly have smart-phones and/or other devices which are able to access eBooks (for example, 12% of Kindle users and 15% of iPad users are under 18<sup>103</sup>). Thanks to services like Google Books and Project Gutenberg, free books for classrooms are easy to find. With the right eBook reader, those books are easy to get into the hands of students. With that as the background milieu it seems strange that each school is still spending lots of money on library books. A better approach (or, at least, a parallel approach) would be for a local education authority or a group of schools bandying together, to buy online rights to a series of eBooks for online access and download to these types of devices. With this type of technology it is also possible to keep much more of a track as to how much of the texts that little Geeta has actually read (and crucially, where she may have given up). In addition, they would also be reducing paper usage, helping further the U.K. sustainability credentials and targets.

## 6.3 Transportation

### 6.3.1 The current transport model

The Department for Transport (DfT) is the department responsible for transportation in the United Kingdom. The department determines the overall transportation strategy and works in congruence with agencies that help to accomplish this strategy.<sup>104</sup> Together the Department and these executive agencies are responsible for a number of transportation areas, including:

- Statutory regulation of driving instructors and trainers<sup>105</sup>
- Vehicle registration certification<sup>106</sup>
- Vehicle licensing, testing, and enforcement services<sup>107</sup>
- Managing and maintaining motorways and trunk roads<sup>108</sup>
- Improving maritime safety and protecting marine environment<sup>109</sup>
- Regulating privatised rail services<sup>110</sup>
- Adding capacity to Heathrow Airport<sup>111</sup>
- Regulating carbon dioxide emissions from transport<sup>112</sup>

### 6.3.2 Plans for cuts to front-line services

These include:

- Department for Transport: £309 million.<sup>113</sup> The total settlement represents a 15% cut in its £15.9bn budget<sup>114</sup>
- Transport for London cuts: £108 million<sup>115</sup>
- Rail budget cut: £120 million Glasgow Airport Rail Link scrapped by the Scottish parliament<sup>116</sup>
- Airport budget cut: Plans for third runway at Heathrow scrapped<sup>117</sup>
- Road safety budget cut: £37.8 million<sup>118</sup>
- Train tickets: the cost of season tickets go up from 2012 onwards. Ticket prices will increase by 3% above inflation for the next three years<sup>119</sup>

### 6.3.3 Current example digital initiatives

These include:

- Oyster network: online account management service where passengers can update details, view usage and add credit to their Oyster cards.<sup>120</sup>
- Congestion charging: users of the roads within the London congestion zone can now pay their congestion charge online and also manage any outstanding penalty charges as well.<sup>121</sup>
- Vehicle & Operator Service Agency (VOSA): services enabling vehicle users to manage licensing, testing and roadworthiness of vehicles online.<sup>122</sup>
- Department for Transport YouTube channel: information videos and tutorials.<sup>123</sup>

### 6.3.4 Current issues

These include:

- One of the biggest issues faced with transportation is traffic congestion. Transport for London has found that by 2025, the cost of this to England's economy alone will be £22 billion.<sup>124</sup>
- Traffic and parking management are also major issues, as the supply for road space and parking spots is much lower than demand in certain areas (i.e. town centres etc.).
- The Department for Transportation is currently working on transport issues concerning carbon emissions, rail franchising, and personal security on public transport.<sup>125</sup>
- The modernisation of the existing London transport network in time for the London 2012 Olympics remains a cause for concern, as does the impact of other major infrastructure projects that may impact on it (e.g. Crossrail).
- Ticket prices on the rail network are also an issue, with some private rail companies such as South West Trains, set to increase their peak ticket prices by up to 20% in the coming months<sup>126</sup>

- The demand for air travel is increasing and in particular Heathrow airport has issues with overcrowding – it is currently running at nearly 100% capacity, yet plans for expansion have been shelved (see above).

### Some potential digital improvements to transport provision:

Below we provide some initial thoughts about ways that front-line transport services could be improved through the further use of digital technologies:

#### 1. Parking spaces

Parking spaces are difficult to come by throughout almost all parts of the United Kingdom. Finding a space usually involves driving around for town for 15 minutes, getting increasingly irate, before waiting behind a car that some people appear to be approaching, in the vain hope that the car is theirs and that they have had enough of shopping for the day. At this point you find that their children decide to throw themselves prostrate on the floor and refuse to get up as her poor parents, attempt to bundle them into their car seats apologetically. All the time you are hoping that this doesn't hold up all the traffic waiting behind you to road-rage levels.

Some local authorities already have the ability to display the number of spaces in a particular car park on digital signs around their towns. This could easily be taken a stage further, either on a national or local level with a parking space mobile phone application, to assist drivers by alerting them of free spaces depending on their location. Real-time updates get sent to the phone and, where the images are available, CCTV video footage could be streamed to the application to make locating the empty parking spots even easier.

This bares comparison to both the London Cycle Hire scheme where scheme users can see which sites have spare bikes or spaces to drop a bike off via a cross-platform phone application<sup>127</sup> and the BART system in use in San Francisco where transport users have access to real time data on the arrival time of their chosen train, which they can obtain via a downloadable mobile phone application.<sup>128</sup>

#### 2. Tag & Beacon vs. Automatic Number Plate Recognition (ANPR)

The London Congestion Charge is a concept that a number of other large metropolitan areas throughout the UK are looking at also implementing. However, the Automatic Number Plate Recognition (ANPR) system currently in use in London is very expensive (the cost of running ANPR cameras in London is 50 times greater than the 'tag and beacon' system in Singapore, whilst the number of cars is very similar).<sup>129</sup>

If Ms. Brown drives into the congestion charge zone to pick little Johnny up from school, an ANPR system will collect her car's colour, registration number and the date of entering the zone (and store this information for 5 years<sup>130</sup>). However, the ANPR system is unable to actually take payment of the congestion charge from drivers - it can only identify that the vehicle entered the zone on a particular day. Someone at congestion charge HQ then needs to humanly verify this, check to see if the charge has already been paid for that date and apply the penalty process (if not).

A 'tag and beacon' system has a number of advantages over this. It is a simple system that consists of a tag inside the vehicle, and a beacon on the roadside. Once the tagged vehicle passes the beacon, the vehicle information is entered into the database (i.e. MOT details, tax, police records, logbook etc.). The huge advantage of this system is its ability to 'scan' several cars at the same time so it can be used not only to automate the process of charging drivers for entering the toll zone, but also to monitor and improve the flow of the traffic in real time.

Every vehicle registered in the UK has to have a valid tax sticker on their windscreens, which could be adapted so that it was readable by any number of 'tag and beacon' systems around the country. Clearly, Ms. Jones may well be concerned about the potential civil liberties issues about being tagged everywhere she drives, but, then, her data under the current ANPR system is already being kept for five years, so she may not care or may be willing to trade this for the convenience of not having to make a manual payment every time she enters a chargeable zone (as millions of London commuters currently do with their Oyster cards). In any event the vehicle would only be tagged when in a chargeable zone, not in the vast majority of the country that was not being tracked. In any event, the 'trackable' area pretty

much equates to those areas where there is already a huge preponderance of CCTV cameras and where she is already able to be tracked quite easily (albeit manually at present). In addition, another advantage of this system, is that where vehicles do not have a tag (e.g. foreign vehicles, stolen vehicles etc.) this may indicate that the vehicle may need to be stopped and/or appropriately fined.

Scrapping ANPR and introducing 'tag and beacon' would also save a lot in terms of the costs of the staff who currently spend their time watching the pictures taken by the ANPR cameras and who manually apply the fee payment and penalty charge process. 'Tag and beacon' is cheaper in maintenance, and would execute congestion charges more effectively and efficiently. Critics of the current congestion charge system (mainly the West London Residents Association) claim that in using ANPR for the more recent western extension of the congestion zone the government is effectively wasting £166 million as the technology will quickly become outdated and so need to be replaced by the tag and beacon system.<sup>131</sup>

## 6.4 Pensions

### 6.4.1 The current pension model

The state provides basic pension provision intended to prevent poverty in old age. Most modern pension systems in the western world were implemented post-World War Two and, as they had to cater to people about to retire or who were already retired at the point of their implementation, they could not rely on people paying 'into a pot' for themselves or their family. Instead, the tax payers at any point in time pay into a general pot to pay contemporaneously for the pensions of retirees.

The current United Kingdom basic state pension applies to men over the age of 65 and women over the age of 60. It is a 'contribution based' benefit, and depends on an individual's National Insurance contribution history. It is payable for someone with the full number of qualifying years (years in which NI contributions were paid - typically 44 for a man and 39 for a woman). The 2010-11 provision is £97.65 per week for a single person and £156.15 per week for a married couple.<sup>132</sup>

Other aspects of the UK pension system include:

- *State Second Pension*: introduced to provide a more generous pension provision for low and moderate earners
- *Occupational Pensions*: arrangements established by employers to provide pension for their employees
- *Stakeholder Pensions*: particularly aimed at those on low to moderate earnings - low minimum contributions, and flexibility in relation to stopping and starting contributions
- *Group Personal Pensions*: provides employees with access to a pension run by a single provider. Economies of scale mean it is possible to negotiate favourable terms, thus reducing the cost
- *Personal or Individual Pensions*: for example, SIPP's which allow individuals to make their own investment decisions from HMRC approved investments

### 6.4.2 Plans for cuts to front-line services

- There are no proposed cuts to the levels of pensions themselves. However, the state pension age for men and women is to rise to reach 66 by 2020.<sup>133</sup>

### 6.4.3 Current example digital initiatives

These include:

- *Directgov*: contains a mini-site devoted to pensions, including a State Pension Age Calculator tool to try to encourage people to get thinking about their pensions earlier.<sup>134</sup>

### 6.4.4 Current issues

The current United Kingdom pension system was fine when there was a much higher ratio of tax payers to retirees in the late 1940s and 1950s. As life expectancies have extended and the baby-boomers have started to retire en masse the social contract between those in work and those drawing their pensions may need to change. There are now fewer employed people (as a percentage of total population) paying for more retirees,<sup>135</sup> whose life expectancy is greater than ever.<sup>136</sup> Something will have to give.

- *Retirement Age*: The retirement age is currently 65 for men and 60 for women.<sup>137</sup> Both of those numbers are going up; retirement ages for both men and women will rise to 66 by 2020.<sup>138</sup> The previous Labour government's policy was to raise the pension age to 66 in 2024 and gradually to 68 by 2046.<sup>139</sup> The Coalition argues that this should be speeded up and it may well be extended further, to 70 or older in the following decades.<sup>140</sup> The default retirement age (currently 65) - at which workers can be legally axed by employers - may also be axed.<sup>141</sup>
- *People cannot afford to stop working*: with the price of assets that are needed *before* retirement (e.g. houses) increasingly massively over the last few decades,<sup>142</sup> many people believe that they cannot afford to stop working<sup>143</sup> and many people do not contribute to or think about their pensions.<sup>144</sup> To combat this, personal accounts, automatic enrolment and a minimum employer contribution will be new policies from 2012.<sup>145</sup>

- *The death of defined benefit/final salary schemes:* traditionally, a large number of UK employers offered employees defined benefit or final salary occupational pension schemes. In these, the employee was promised a fixed level of pension based on their final salary. Recently, many employers have closed these schemes to new members, and established defined contribution schemes instead. With these, the employer pays into a fund, and the fund is used to buy a pension when the individual retires. The pension is therefore determined by the value of the fund upon retirement, not their salary.

### Some potential digital improvements to pension provision:

Below we provide some initial thoughts about ways that front-line pension services could be improved through the further use of digital technologies:

#### 1. Pension tools and tutorials

To save money over the long term (by encouraging people to save for their retirement from a much younger age) the provision of pension tutorials should be much more widespread and need to start to happen well before retirement (probably these conversations need to start happening as soon as little Johnny and little Geeta start secondary school). Digital technology can help in a number of areas here:

- *Online pension information, tools and calculators:* these would probably be aimed at a wide-spectrum of ages, abilities and earnings. Some of these are already available on the Directgov website, but a widget-based approach to allow these to be plugged-in to as wide a range of third-party sites as possible would be a sensible approach to maximise awareness and 'bang for buck'.
- *Public touch-screen kiosks* (e.g. supermarkets, post offices, libraries, banks, the street etc.): these may or may not be aimed at a wide-spectrum of ages, abilities and earnings, depending on location.
- *Free pension DVDs:* sent to all UK tax-payers with pension information and calculators on for playing on a TV screen or computer. These would be aimed at a wide-spectrum of ages, abilities and earnings.
- *Free pension calculators:* electronic devices sent to all UK tax-payers in the post (these might take the form of an actual calculator and therefore have some re-use value, a pedometer-style single-usage, dedicated device or a game-based mechanism like a tamagotchi). These might well be sufficiently cheap and sufficiently disruptive (particularly as it would come from a trusted and official government source) to get people to use them and start thinking about their pensions at a much younger age.
- *Fostering relationships with high street banks:* to allow government content to be placed onto with banks 'websites' (e.g. when people log into their accounts they are faced with informative pop-up videos explaining pension schemes and encouraging participation and so on).

Where appropriate, these would feature interactive FAQs to help to answer common pension question topics. All of these could be tailored for particular audiences (e.g. a children's version and an adult version) and locations (e.g. bite-size information for supermarket queues versus in-depth information on a DVD).

#### 2. 'Save More Tomorrow'

The book 'Nudge: Improving Decisions about Health, Wealth, and Happiness' by Richard Thaler and Cass Sunstein draws on research in psychology and behavioural economics to posit libertarian paternalism and the active engineering of choice architecture. One area they look at in the book is the creation of better default pension plans for employees. Ms. Jones as a typical twenty-something has a lot of inertia in thinking about and dealing with long-term decisions like pensions and yet can expect a number of future pay rises as her career progresses. How then to 'nudge' her in the right direction to make her retirement more comfortable? Thaler and Sunstein recommend engineering default packages to ensure her take-up and a commitment from her to increase her contributions when she has future pay rises. This is known as the 'Save More Tomorrow' (SMT) plan. It asks Ms. Jones to commit, in advance, to allocate a portion of her future salary increases toward her retirement savings. Thaler and Sunstein's research to date suggests that:<sup>146</sup>

- Most people (78%) who were offered the SMT plan elected to use it
- Virtually everyone (98%) who joined the plan remained in it over the course of two pay rises, and the vast majority (80%) remained in it over the course of three pay rises
- The average saving rates for SMT plan participants increased from 3.5% to 11.6% over the course of 28 months

With such self-service improvements to pension provision on the part of the individual themselves it would seem sensible for government to facilitate an SMT commitment as early as possible for as many citizens as possible in order to save on future pension pay-outs by the state. To this end, we would recommend the build of an SMT service that:

- Stressed the benefits of the SMT approach to Ms. Jones
- Had a series of tools and calculators that allowed her to assess the numerical benefits that would accrue
- Provided her with a mechanism to make the commitment and inform her employer of it
- Provided her employer with details of what they need to do to facilitate her request
- Reminded all parties periodically to renew the commitment

### 3. Ministerial podcasts

A series of ministerial podcasts of open sessions moderated by a trade body (e.g. the National Association of Pension Funds) to encourage employers to undertake the changes necessary to adopt any new pension requirements. These could be free to access, but potentially chargeable for third-party or corporate usage (i.e. embedding on third-party corporate websites and so on).

## 6.5 Climate change

### 6.5.1 The current climate change landscape in Government

The Department of Energy and Climate Change (DECC) was created in 2008 to focus on energy policy and climate change mitigation policy.<sup>147</sup> DECC focuses on four goals:<sup>148</sup>

- Save energy
- Deliver secure energy
- Drive action
- Manage energy legacy

While DECC focuses on emission regulation, the Department of Food and Rural Affairs (Defra) focuses on:<sup>149</sup>

- Environmental protection
- Creating an environmentally sustainable economy
- Improving quality of life and well-being in rural communities
- Food production and standards
- Agriculture and fisheries

As climate change is in many ways related to habitat protection, the two departments work hand in hand on a number of areas (for example, around the EU Renewable Energy Directive.<sup>150</sup>)

### 6.5.2 Plans for cuts to services that affect climate change

These include:

- Department of Energy and Climate Change (DECC) cuts: current spending down 18%; plan for tidal barrage on the Severn estuary scrapped<sup>151</sup>
- Department of Food and Rural Affairs (Defra) cuts: current spending down 29%; capital spending down 34%<sup>152</sup>

### 6.5.3 Current example digital initiatives

There appears to be a limited amount of digital initiatives from government here, but climate change initiatives from other bodies include:

- Oxfam's digital 'Here and Now' campaign, an entirely online advertising campaign aimed at promoting awareness of climate change.<sup>153</sup>
- 'Do the Green Thing' ([www.dothegreenthing.com](http://www.dothegreenthing.com)): a not-for-profit public service community site that is meant to inspire people to lead a greener life. It uses videos and inspiring stories from community members around the world. It seeks to focus on practical change ('seven things you can do').

### 6.5.4 Current issues

- At the citizen level, auditing, accountability and enforcement are very big issues with regards to climate change (particularly in relation to individual/household waste and recycling). It is difficult to enforce people to comply without unintended side effects (for example, fly-tipping).
- Even practitioners in the field realise that to the average person the climate change agenda is esoteric, complex and can be a little dull:

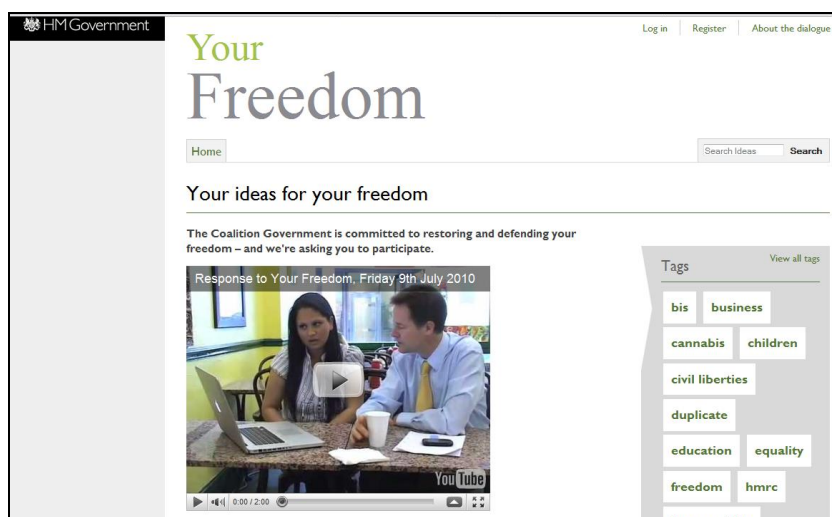
"Books on climate change are the literary equivalent of a nil-nil draw in a lower division on a wet day - unlikely to attract much of a crowd. Few books on climate change are readable or enjoyable, despite it being an extremely important topic. So I scrapped what I had written and started trying to find a way of making the book more entertaining. Partly through putting dialogue and humour in it, and partly through introducing the parallel of a more interesting subject."

*Dr Ian Curtis,*

*Oxford University (currently being funded to work with football teams on climate change).*

The lesson to any digital initiative directly talking to climate change is to make it salient, relevant and to understand what your audience are actually interested in.

- Anecdotal evidence from Nesta<sup>154</sup> suggests that:
  - The majority of people are really not interested in tracking their carbon reduction. Therefore initiatives should not focus on carbon reduction as the 'hook' for engagement. Carbon calculators or anything that measures CO2 and tracks this online have been done many, many times before and are not particularly successful.
  - Knowledge-based approaches do not necessarily change behaviour (we all know of psychologists who are mad as spiders or, alternatively, obese doctors). Simply having the knowledge of what is good for you does not tend to stimulate change. Anything that tries to communicate the facts of climate change will have very limited impact. Therefore pointing to the destination is a better approach (e.g. a sustainable life being better than the one you have now; not focusing on giving up things, but, rather 'taking up' their corollary). 'Do the Green Thing' ([www.dothegreenthing.com](http://www.dothegreenthing.com)) does this quite well.
  - Focusing on the advantages of taking action (i.e. financial benefits such as feed-in-tariffs) has considerable resonance with the mass market.
  - Competition always tends to drive change. Whether this is real (i.e. to win something) or psychological (i.e. the individual will be seen as a leader amongst their peers)
  - Focusing on the mass market consumer, rather than those already engaged, is a good idea. A successful series of digital initiatives should seek non-obvious media partners (e.g. Heat, the tabloids, Grazia, Metro etc.) to stimulate and drive demand. 'Global Cool' ([www.globalcool.org](http://www.globalcool.org)) has a good take on this approach: focusing solely on 'conspicuous consumers' and attempting to understand what motivates them and then playing to these drivers.
  - Seeking to build habits is a good way to make long-term and sustained behavioural change. Tools should attempt to stimulate habit-forming. Doctors recommending going to the gym may be less successful than doctors who recommend buying a bike, because riding a bike can be integrated into the things you do anyway (like going to work) whereas a gym will always be an additional 'ask'.
  - Gaming may help to drive behaviour change. This has been quite successful in the past, notably with children in remission from leukaemia who tend to be very bad at taking their medication once discharged from hospital, even in the knowledge that they are 80% more likely to get cancer again if they don't take it. Gaming techniques have proven successful in turning this around.
- Recent Government crowd-sourcing/slicing consultation mechanisms such as '[Your Freedom](#)' and '[Spending Challenge](#)' have been very successful: over 100,000 suggestions, including more than 44,000 ideas from the public.<sup>155</sup>



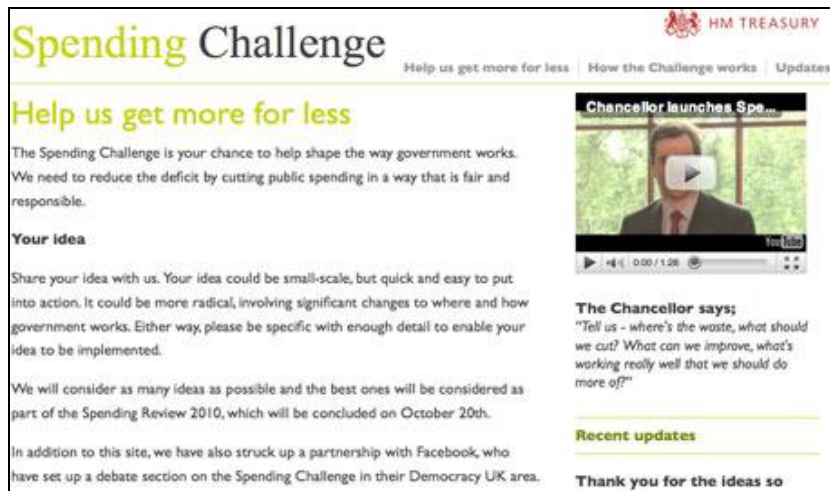


Figure 1: The Government's recent consultation mechanisms

### Some potential digital improvements to the services that effect climate change:

Below we provide some initial thoughts about ways that services that effect climate change could be improved through the further use of digital technologies:

#### 1. Climate-change consultation

Some of the main tenets for reducing the impact of climate change have been to focus on three major concepts:

- i) Reducing consumption
- ii) Reusing things
- iii) Recycling as much as possible

The ability to suggest and share best practice and innovative ideas around these areas and then distil these into a platform for radical policy initiatives would be a very powerful tool. A digital climate-change consultation platform could also aid in spreading awareness and encouraging mechanisms for local accountability (getting rid of fly-tipping and at the same time overcoming some of the more 'Big Brother' approaches, like RFID tags in bins, currently in operation etc.). Some of the Nesta findings above would seem to indicate that Mr. and Mrs. Prasad are unlikely to get involved in this unless they already feel passionately about climate change (perhaps under pressure from what little Geeta has learnt at school!), but the experience of the '[Your Freedom](#)' and '[Spending Challenge](#)' consultation mechanisms has been that, given a chance to put the world to rights, many people like to shout about their ideas. And, as Nesta suggest, letting them know that these platforms are there through mass market media may well be the best way to generate the most ideas and to get more people involved.

Properties like the Energy Savings Trust's 'Britain Unplugged' tool have a lot of aspects to them which encourage more mass market participation, by providing:

- Direct appeals to a more mainstream audiences with a hub and spoke' approach (a central website and various outlying social media spaces: YouTube, Flickr and Facebook et al) to go to where these audiences already are
- Behavioural economics best practice to 'nudge' people to change their behaviours (i.e. a challenges-based approach, with the audience responded to challenges by uploading video, picture or text descriptions of what they are doing)
- Social media to create opportunities for community development and an ongoing community manager to curate the service
- A collective and emergent approach, allowing participants to see progress (e.g. the 'Britain Unplugged' map)
- Bite-size bits of best practice and 'top tips'
- A human face of the organisation (e.g. by involving Energy Saving Trust staff acting as rolling guest web editors to share their own personal view and approach to tackling climate change).

These approaches are likely to win over both the Mr. and Mrs. Prasads of the world, who may not be that engaged with climate change, as well as the Ms. Browns of the world who may already be.

There is no reason why this type of consultation mechanism might not be white-labelled and be rolled-out across government for use in many different areas. Alternatively, having a single consultation platform with multiple policy strands hanging off it might also work. However, given the one-track mind that many people have, it is more likely that having a 'single ask' or a focus on a particular topic for a limited period is most likely to generate the most ideas. Ongoing engagement with the Ms. Browns of the world, who are already interested in the topic, might need to be dealt with by a separate digital property.

## 2. 'Big Society' emissions reduction competition

As part of the EU's requirement to meet its Kyoto commitments, in December 2002, it created an Emissions Trading System (ETS) in an effort to meet the targets. This included fines for member nations who failed to meet their obligations, starting at €40/ton of carbon dioxide in 2005, and rising to €100/ton in 2008.<sup>156</sup> Not meeting the UK's targets might therefore be very expensive to the UK and undertaking initiatives that actively help to reduce it are likely to save expenditure from the public purse as a result.

An online competition to encourage a healthy competition between local areas in order to affect positive behavioural change and to reduce local emissions would be one such example. Everybody likes to win and the social proof of winning and recognition is a great way to affirm positive behavioural change. A community space of individuals, local councils, charities and NGOs with a compelling online competition could be a lot of fun and induce a lot of efforts towards reducing emissions on an individual and local level (and hence to contribute towards national targets). An auditing mechanism would need to be introduced (possibly via an academically rigorous, internationally-approved emissions accounting body) to understand the emergent performance of all of the various local areas and who was 'winning'. Mini-competitions could be included at sub-levels within the national framework (e.g. pitching households, streets, local areas, individual councils, counties, regions against each other). Windsor and Maidenhead council has come up with the concept of "big society reward points" to help encourage citizens to volunteer. It is anticipated that these might be redeemable in supermarkets, high street shops and restaurants in return for volunteering activities. Awarding these on a national scale for the winning entries in the online competition at each geographical level would both stimulate ideas and incentivise entrants.

This online competition could also take the best practice aspects of something like the Energy Savings Trust's 'Britain Unplugged' property forward to a more national level, with community forums to allow people to compare their efforts towards helping climate change, share best practice and so on.

## 3. Big Green Brother

An eye-catching extension of this idea would be to wrap the whole thing in a 'Big Brother' style format. This could be on a broadcast platform, but certainly would work online too. Individuals would be placed in a confined space as per 'Big Brother' proper, with cameras surrounding them. After the first 24 hours, all on-demand energy or water supply would cease and they must then co-ordinate and collaborate to generate both by:

- Pumping water from a well
- Riding bikes (etc.) to charge a battery for power
- Construct and install basic solar cells
- Construct a mini-bio digester to generate gas
- Design a rationing/privilege system

They would be given lots of prompts and resources (e.g. an open fire, a meconthus garden, insulation/energy saving products etc.). It would be a kind of 'Big Brother' meets 'The Great Egg Race'. Instead of tasks (they probably would have enough!) there might be 'climate changers' who would derail their efforts if they become too successful. All other resources such as loo roll, food and so on, would be rationed.

## 4. Green investment bank submissions

The UK has internationally binding commitments to meet its 2020 environmental goals for a 34% reduction in greenhouse gas emissions and for 15% of energy to be from renewable sources. To this

end, the Comprehensive Spending Review provided up to £1 billion of funding in a green investment bank for green initiatives. No doubt a number of these initiatives, particularly the larger infrastructure type projects, already have funding ear-marked from this pot. However, there should be a mechanism for smaller projects and ideas to bid for pots of this money to support innovative green ideas. As Ms. Brown works for a social enterprise that has just come up with an idea to improve renewable energy take-up, she should be able to submit this idea and apply for funding online to realise her ambition.

#### 5. gBay – Government auction site

The government, the police, local authorities (et al) upgrade their equipment, supplies, fixtures and fittings on a regular basis and millions of pounds worth of items are disposed of. Sometimes these are simply thrown away, but in other cases they are offloaded to dealers and auctioneers around the country. As a result, these public-sector bodies are either not necessarily realising any monies for these second-hand items (where they are simply disposed of) or not realising the best prices that they might (where they are restricted to a small pool of buyers at a local auctioneers or forced to accept what a local scrap merchant might be prepared to offer). Consequently, a government service to auction these items nationally (or even internationally) is a good idea and one that has been suggested via the '[Your Freedom](#)' and '[Spending Challenge](#)' websites. Merely facilitating these sales via an existing private-sector service like eBay, whilst attractive as a proposition (people are familiar with it, have existing accounts and frequent it already) may present State Aid competition issues. For that reason we believe a separate, government-focused service, is the way to go.

## 6.6 Legal and law enforcement services

### 6.6.1 Current legal and law enforcement services provision

The Department of Justice is responsible for:

- Criminal, civil and family justice
- Courts, prisons, probation services, attendance centres and tribunals
- Reducing reoffending rates
- Making new laws
- Strengthening democracy, modernising the constitution and safeguarding human rights

The provision of legal services and law enforcement in the UK is overseen by several different bodies:

- The various police forces throughout the UK
- The Tribunals Service
- The Probation Service
- Her Majesty's Courts Service, which deal with civil, family, and criminal courts
- The National Offender Management Service, who provide correctional administration
- Her Majesty's Prison Service

### 6.6.2 Plans for cuts to front-line services

These include cuts to:

- Legal services: £500 million <sup>157</sup>
- Her Majesty's Courts Service: 103 magistrates and 54 county courts <sup>158</sup>
- Her Majesty's Prison Service: plan for new 1,500-place prison to be dropped; 3,000 fewer prison places expected by 2015 <sup>159</sup>
- Policing: central government contributions to the police budget down 20%; police spending down 14% <sup>160</sup>

### 6.6.3 Current example digital initiatives

These include:

- *Community Legal Advice* ([www.communitylegaladvice.org](http://www.communitylegaladvice.org)): this is the main citizen-focused online hub for legal related information. There is a tab for advice, where viewers can look for relevant information pertaining to their specific situation. A digital interactive TV service (available on Sky, Virgin and Freeview) for advice and information is available that provides legal advice for those who do not have easy access to the Internet.
- *Metropolitan Police website* (<https://online.met.police.uk/report.php>): this contains sections where one can report a crime and divulge information on criminals and terrorist activity in an anonymous and safe digital environment
- *Money Claim Online (MCOL)* ([www.moneyclaim.gov.uk/web/mcol/welcome](http://www.moneyclaim.gov.uk/web/mcol/welcome)): is Her Majesty's Courts Service Internet based service for claimants and defendants. Akin to a 'small claims court' mechanism online, it provides an online way of making or responding to a money claim on the internet.
- Various international crime-mapping initiatives exist for example:
  - *WikiCrimes* ([www.wikicrimes.org/main.html](http://www.wikicrimes.org/main.html)): this is a Brazilian user generated crime map created by Professor Vasco Furtado from the University of Fortaleza in northern Brazil. Users find a worldwide location and can find crime details for that location. The system allows anyone to import or export crime data into a worldwide centralised database.
  - *The Real Time Crime Center (RTCC)*: a centralised technology centre for the New York Police Department (NYPD) and Houston Police Department which gives field officers and detectives real-time information to help identify patterns and stop emerging crime. The NYPD system overlays more than: 5 million New York State criminal records, parole and probation files; 20 million New York City criminal complaints, arrests, 911/311 calls and summonses over five years; 31 million national crime records; and 33 billion public records

- *CompStat*: a multi-layered dynamic approach to crime reduction, quality of life improvement, and personnel and resource management. It maps crime and identifies problems and helps police departments across the U.S. devise strategies and tactics to solve problems, reduce crime, and ultimately improve quality of life in their area.

#### 6.6.4 Current issues

These include:

- *Time-consuming to find relevant information and information overload*: it is currently very time-consuming to find information/advice related to your particular legal concern. The Community Legal Advice website has an incredible amount of information, which is a problem for those with very specific questions. Although the information exists, it may not be as accessible and easy to find as it should be. Although legal advice is broken down into categories and can be searched for quite quickly, the time spent performing different searches to find the exact information required can be extremely long since there is so much information to sift through.
- *Perception of complexity*: people often think that legal issues are complex and time-consuming and therefore often put off putting in place preventative measures or dealing with the issues once they have happened. Consequently, the situation often becomes much worse before they start to engage with the problem.

#### Some potential digital improvements to legal services provision:

Below we provide some initial thoughts about ways that front-line legal advice could be improved through the further use of digital technologies:

##### 1. Intelligent agents

One specific way to deal with information overload on the part of the user is to utilise an intelligent agent 'virtual expert' to help users find the information relevant to them as quickly as possible. These types of system allow users to interrogate vast swathes of data in an intelligent way to find and present the information that is going to be helpful in a specific, potentially complex, individual case. Essentially, this works much like a live representative taking questions and guiding to information, but it is entirely automated (which, in many cases, may be infinitely preferable!).

A good current example of this type of software in action is Continental Airline's 'Alex' virtual expert.<sup>161</sup> 'She' has language-recognition and context-awareness technologies built-in, which enable 'her' to interact with customers much like a human would, understanding the true intent of questions people ask using everyday language. On her first 'birthday', Alex had answered nearly 9.5 million questions, with a record of 100,692 questions asked on a single day.<sup>162</sup> This is probably a few lifetimes more customer service than could be answered articulately by many of the people-to-people systems currently in operation.

Similarly, the Royal Mail's 'Ask Sarah' service enables their 4.5 million monthly web visitors to receive immediate answers to their questions online. From June to August 2008, 'Sarah' had reduced overall email queries by 50% and by 96% in some areas. The number of routine calls to the contact centre also significantly reduced.<sup>163</sup>

Clearly, the throughput of applications like this is extremely high and can lead to a much more informed and happy user. Not only that, but it is a much more cost efficient method of supporting users, with the costs of such a system typically paid for over the course of a few months of operation, when compared with a call centre. Additionally, this sort of software:

- Gives a personality to the company
- Can be much more accurate in responding to enquires
- Is much more time efficient (one-to-many concurrency rather than one-to-one with a call centre representative)
- Frees-up staff to spend time answering more complex queries and thereby increasing their job satisfaction

One area where this might be applied is in case law and legal precedence, where an open-source

approach might be utilised to put legal precedence on data.gov.uk and allow the intelligent interrogation of this body of information via intelligent diagnostic tools.

## 2. Video conferencing prison visits

Her Majesty's Prison Service provides an Assisted Prison Visits Scheme (APVS) to help towards the travel costs for relatives and dependents of prisoners who earn less than £17,474 p.a. It provides for the following:<sup>164</sup>

- 13p per mile for car or motorbike travel
- A light refreshment allowance of up to £5.10 per person
- Overnight allowances of up to £34
- Car hire of up to £40 per day
- Child-minding at £3.75 per hour
- Volunteer drivers at up to 43p per mile
- An escort for up to £27 per visit

In total the budget for this comes to nearly £2 million per year.<sup>165</sup> A much simpler and cheaper way for many families (not only those on less than £17,474 p.a.) might be to provide online video conferencing facilities. An independently hosted (i.e. non-Government and therefore more trusted by the families of those serving sentences) secure two-way video link between the prisoner and family member would enable interaction and would mostly be a one-off cost (with some annual bandwidth and maintenance charges). Secure video conferencing solutions for embedding in a website are available from Google, Adobe and others. Providing this centrally via a 'prisoner-friendly' website would provide a number of major benefits, these include:

- *Cost savings:* if Ms. Brown wants to visit her ex-partner – Ken – in prison it's an expensive business. Not only does she have to drive there, but also arrange for child-minding for little Johnny. All of which would be a cost to taxpayers under the AVPS. This approach would save this cost and would also mean that little Johnny could speak to his Dad without having to go through the trauma of a prison visit.
- *Time savings:* Ms. Brown doesn't have to take time off work (with the subsequent drain to the economy of this) to visit the prison which might be hundreds of mile away
- *Improved PR:* the cost of the APVS is a gift for the tabloid newspapers that are typically not sympathetic to this sort of cost to the taxpayer. This approach would help to reduce any negative PR from the APVS scheme.

## 3. Re-training online

Prison education and training costs £124 million a year.<sup>166</sup> As with formal schooling, a lot of the best trainers are not always available at the local level (i.e. at the prison that Ken is at). In an environment where budgets are being cut almost across the board, prisoners' re-training may be seen as something which is quite low down the pecking order. This may therefore have an adverse effect on prisoner outcomes - that is, on Ken. In this milieu, there are fantastic opportunities to provide some re-training online. Prisons could sign Ken up for re-training sessions via a scheduled online timetable. A secure two-way video link to the trainer and other online prisoners would enable interaction.

Providing the resources centrally provides a number of major benefits, these include:

- *Cost savings:* a single trainer could train a much greater number of prisoners, significantly cutting labour costs.
- *Time savings:* it's a much quicker solution, enabling Ken to undertake training a short period into his prison term rather than waiting several months until he's institutionalised.
- *Helps overcome national shortages:* with this approach Ken can get centralised, specialist training in areas where there may be a national shortage of good trainers.
- *Improved educational outcomes:* prisoners would be able to continue or even adopt courses that would otherwise not be possible. Combined with this, the novelty factor of having some online training and being seen as 'special' are likely to see improved attainment levels (at least initially).
- *Improved training standards and monitoring:* as the best centrally available training resources in a particular subject can be provided to many more prisoners. The sessions would also easily be able to be monitored to ensure high quality levels.

All of these benefits are likely to help criminal justice rehabilitation rates and prisoners outcomes once outside.

## 6.7 Business services

### 6.7.1 Current business services provision

The following bodies provide official government-to-business services in the UK:

- *The Department for Business, Innovation, and Skills (BIS)*
- *The British Chambers of Commerce (BCC)*: works with Government to shape policy affecting businesses, and focuses on key areas of activity including International Trade, Skills Development and Business Services.
- *Smallbusiness.co.uk*: provides useful resources, products and services for small business owners and start-ups.
- *Business Link*: a national free business advice and support service
- *The Federation of Small Businesses (FSB)*: a large campaigning pressure group promoting the interests of the self-employed and owners of small firms.

### 6.7.2 Plans for cuts to front-line services

These include:

- Cuts to BIS: current spending down 25%; capital spending down 52% <sup>167</sup>
- Cuts to Business Link: regional Business Link services to be abolished <sup>168</sup>

### 6.7.3 Current example digital initiatives

These include:

- *Business Link*: one of the so-called government 'super-sites', Business Link is the official government website for businesses of all sizes. It provides free business advice and support service. It is available online at [www.businesslink.gov.uk](http://www.businesslink.gov.uk) and via a national helpline number (0845 600 9 006). It is designed not only to help businesses in general by providing advice about typical business issues (e.g. business start-up tasks, grants, loans, expertise and advice eligibility, vacancy advertising via Jobcentre Plus; business performance tools, employee contract tools etc.), but also helps businesses to find the information they need from government about how to comply with regulations and submit key transactions (e.g. file VAT returns, file PAYE returns etc.).
- *UK Trade & Investment (UKTI)*: provides trade advice and practical support to UK-based companies wishing to grow their business overseas. They offer a range of services (e.g. participation at trade fairs, outward missions, bespoke market intelligence etc.) some of which is facilitated by their main corporate [www.ukti.gov.uk](http://www.ukti.gov.uk) website.

### 6.7.4 Current issues

These include:

- The Regional Development Agencies (RDAs) have been abolished. This is a worry to small businesses, particularly in the North East, with some council insiders estimating (even before the additional emergency budget cuts had been announced) that more than £50 million will be wiped off the face of the North East economy.<sup>169</sup> The government aims to replace these abolished services with Local Enterprise Partnerships by March 2012.
- Additionally, regional Business Links will be shut down, along with the face-to-face advice service that these currently provide. The government has demonstrated its intent to go digital in these areas by stating that these services will be replaced by a "state-funded online platform plus greater use of the private sector and services already offered by organisations such as chambers of commerce. As well as being available via desktops, the new Internet offering will be accessible on mobile phones and supported by a call centre."<sup>170</sup>

#### Some potential digital improvements to business services provision:

Below we provide some initial thoughts about ways that front-line business services could be improved through the further use of digital technologies:

## 1. A mentoring matching system

Start-up businesses have a very high failure rate in this country with as many as 1 in 3 failing in their first three years.<sup>171</sup> The direct cost to the government of businesses failing is very high - 850,000 companies in the UK pay both Corporation Tax and VAT and (for example) in a recent year (2006) the amount owed to HMRC as a result of Corporation Tax was £1.2 billion and VAT and Excise was £5.5 billion.<sup>172</sup> If businesses fail, then the government may fail to get a significant amount of that revenue.

One of the reasons that new entrepreneurs often fail is that they do not have access to good business advice from other people who have 'been there and done that'. People who can help them out (or, at least, point them in the correct direction), with practical and workable business advice when they are in trouble. In some research by accountancy firm UHY Hacker Young in 2007 key reasons for business failure were stated as "difficulty in raising second round financing and poor market research and financial planning" – all areas where seasoned entrepreneurs acting as mentors might help.<sup>173</sup> This is just the kind of advice that Mr. Prasad might need for his expanding engineering business.

The National Apprenticeships Service (NAS) has created the 'Apprenticeships Vacancies Matching System' (AVMS) which matches potential apprentices, with suitable employers offering apprenticeships in the sector and region. A similar entrepreneurial matching system would allow small business owners to have access to experienced business mentors in a related sector. This type of scheme would help to ensure that current start-ups have a higher probability of success by learning from the successes and failures of those who have been in their shoes. The system would match mentors and mentees based on robust criteria.

If Mr. Prasad required a mentor for his business he would pay a fee to belong to the mentoring service, which would cover the mentors' fees and additionally pay for the service (perhaps even generating a surplus). To avoid competitive issues, mentors would probably need to come from the ranks of those seeking portfolio careers, recent retirees or those moving into different fields, but anyone would be free to provide their services.

There are various levels of service that the government (or public-sector agencies) could provide here. With the AVMS mentioned above, NAS actually facilitates the signing-up of both potential apprentices and employers who might employ these apprentices onto the system and then also facilitates the matchmaking of these two groups. It is unlikely that in the case of a mentoring matching system the government might want to go that far. It would, no doubt, see the financial benefits to UK PLC of initially funding the build of such a service, but they may want to allow private-sector companies, entrepreneurs and mentors to sign-up and utilise the matching mechanism for themselves.

## 2. Funding access portal

Another area where businesses like Mr. Prasad's typically need help is in the area of funding. Particularly access to the right kind of funding and knowledge of the various funding opportunities that might be out there. This includes access to and knowledge of both funding of an investment nature and criteria-based funding that businesses meeting those criteria might be able to apply for. It would be helpful if these funding types could be cut by various criteria (e.g. type, size, stipulation, sector, maturity etc.). It would also be helpful to know historic information about the number of applicants and their typical type for each funding stream.

As per the above, it is unlikely that the government might want to explicitly 'match-make' businesses to potential funding opportunities, but there would undoubtedly be financial benefits to UK PLC by making this funding process much more transparent and efficient, particularly in this current climate where bank funding is quite difficult to come by. The government might wish to pump-prime such a mechanism, but then allow companies like Mr. Prasad's, start-up entrepreneurs and funders to sign-up and facilitate matches for themselves.

## 6.8 Census

### 6.8.1 The current census model

The census was introduced in 1801 and had been in operation every 10 years since (apart from during the Second World War). The current census model, which will be used in the 2011 census, stipulates that each UK household (there are over 22 million households in the UK <sup>174</sup>) will receive a printed questionnaire to be filled out and sent back to the Office of National Statistics (ONS). The ONS then digitises the 40 multiple choice question responses from all these households using a barcode system and additionally digitises any free-form written answers that were completed by the census participant.

### 6.8.2 Plans for cuts to front-line services

- Although the 2011 census will continue on as planned (as over £300 million has already been spent on the project and will cost £482 million once it is completed <sup>175</sup>), the census will cease after the 2011 iteration is completed. <sup>176</sup> Instead, a new approach will be adopted, utilising credit checking firms, the Royal Mail, as well as council and Government sources. This new approach will abolish the questionnaire response methodology entirely. <sup>177</sup>

### 6.8.3 Current example digital initiatives

- The 2001 census had the option to fill in your household's census online instead of by filling in the paper form, but it was not particularly pushed as a channel. <sup>178</sup>

### 6.8.4 Current issues

The census is considered an expensive and inaccurate way of measuring the number of people in Britain. The information it provides is often inaccurate and out of date: <sup>179</sup>

- The print-based aspect to the forms adds massively to cost (all forms have to be both printed and distributed to all UK households)
- Another huge obstacle that the census must always deal with is response rate, which in 2001 was 94%, <sup>180</sup> but this still left about 1.5 million households failing to fill in their forms. <sup>181</sup>
- The information from the 2011 Census will not be published until the middle of the following year, at the earliest. By that time, many of the people whom the Census has counted would have moved or died.
- None of the data is in anything like real-time
- It is often quite intrusive (e.g. questions for next year include the name, sex and date of birth of any visitors staying overnight) which discourages accuracy

#### Some potential digital improvements to service provision:

Below we provide some initial thoughts about ways that the census could be improved through the further use of digital technologies:

##### 1. Capturing the mass of UK households online

If the ONS is hoping to overcome the issues outlined above, then new methods must be used to reach and motivate not only the 6% of the population not responding, but also the rest of the population who may respond, but who may not do so accurately or fully. The census could see a drastic face lift by focusing on utilising the internet to solicit responses. As of 2009, 70% of UK citizens have access to the internet. <sup>182</sup> This is a huge portion of the population, accounting for approximately 15.4 million households. Many of these people will now be more than familiar and entirely comfortable with filling-in official forms online. Consequently, the ONS could adopt a new online census approach to reduce cost and encourage responses. Instead of printing a questionnaire for every household, the web could be used to reach those UK citizens 70% already online. A small amount of the savings from this approach could then be used to target the other 30% more effectively through traditional paper methods.

As well as cost savings and nearer real-time data, this approach is also likely to deliver the following

additional benefits:

- *Increased accuracy:* although it has been shown that there is no significant response rate difference between using digital or print surveys, there is a positive correlation between the utilisation of digital and accuracy rates.<sup>183</sup>
- *Breaking language barriers:* an online questionnaire could be translated into several languages at a much cheaper cost than a paper-based system. This might even be automated (please see section [7.6 Audiences: targeting hard to reach groups](#) within the full version of this white paper).
- *Personalisation opportunities:* instead of having 40 fixed questions, the questionnaire could have 15-20 fixed questions and then 'learn' about the respondent enough to ask 20 more pertinent, relevant questions based on their previous responses.

Initially, there may be issues with getting working email addresses for all UK citizens, but just as with a physical address this might be something which is mandated as essential data to be collected on the electoral role. No doubt there will 'digital divide' issues around this, but we do not believe these to be insurmountable. Relatedly, there are also issues around the security of citizen data, both in the transfer and storage of it. However, these issues are common to many (if not most) government services and the Government Gateway, Single Sign-On (SSO), identity verification and authentication initiatives discussed in [section 6](#) above (within the full version of this white paper), which are attempting to resolve these issues.

## 2. Improved access to the information the census collects

Currently all information gathered by the census is collated by the Office of National Statistics (ONS) and accessed via their website. However, this is a lengthy process and it is quite difficult to locate the desired statistics. A suggestion would be to either create a micro-site solely for access to Census information that is better designed and easier to navigate or to provide all the information via data.gov.uk with the appropriate interrogative interfaces and functionality on top. This could then become a hub for all population-based statistical searches and potentially save information gatherers much time and money, as it would be a more efficient system for finding needed information. If this was integrated with an online collection of census data as outlined above it could then provide the government and private sector alike with up-to-date statistical information that could be implemented in both more accurate policy making and more appropriate business models. Revenues could be generated by this type of service by charging for early access to the data. For example, allowing commercial organisations to pay a fee to get early access to the data for 6 months or a year before the free release of the data to the general public (to enable them to build products and services from the data during this time period).

## 6.9 Passport services

### 6.9.1 Current passport provision

Passport services are currently provided by the Home Office through the Identity and Passport Services (IPS) division.<sup>184</sup> The method for passport attainment currently involves completing an application by way of post, sending the application to the IPS, and waiting to complete an interview with an IPS representative (to prevent identity fraud). New passports contain biometric data to identify the individual and to comply with the requirements of the International Civil Aviation Authority (ICAO).

### 6.9.2 Plans for cuts to front-line services

These include:

- *IPS budget cuts*: following the decision to axe ID cards as soon as possible, the Home Office has announced the termination of 60 workers' contracts at Durham's Passport Office.<sup>185</sup>

### 6.9.3 Current example digital initiatives

These include:

- *An online application process for passports*: available via the DirectGov passport mini-site, this service enables people to avoid having to go into a passport office to get the necessary forms by allowing them to fill them in online. Unfortunately this process is not totally digital as it is compulsory for all passport applicants to physically sign their application forms. The current online system prints the information entered online onto a paper form and has it sent out to the applicant to sign, date and return.<sup>186</sup>

### 6.9.4 Current issues

These include:

- *Identity theft and fraud*: new passport designs have been revealed in a bid to further prevent identity theft and fraud,<sup>187</sup> but fake passports remain a security threat.

#### Some potential digital improvements to service provision:

Below we provide some initial thoughts about ways that passport services could be improved through the further use of digital technologies:

##### 1. Virtual interviewing offices

There are significant costs associated not only with supplying interviewers to interview passport applicants, but also in providing buildings to interview them in. The IPS has over 60 different interview stations across the country, employing over 4,000 people to interview and complete other paperwork. As a result, individually interviewing Ms. Brown or Mr. And Mrs. Prasad when they need a new passport is not only expensive, but also inefficient.

While the interview is a necessary requirement to fulfil the passport specifications, it needs to be done in a cost effective, yet secure way. Once the required security was put in place, there is no obvious reason why an applicant could not be interviewed in a virtual 'office' online, removing the necessity of having so many national interview stations. The virtual office could have two-way voice communication via VOIP and two-way text/documentation facilities provided via a chat application. Clearly, security and identity verification would be big issues to be surmounted in this interview format, but, once done, the switch to the digital realm could save significant ongoing costs.<sup>188 189</sup>

##### 2. Full online passport applications

When British citizens currently apply for a passport they have to fill-in an application form and send it back to the IPS in the post alongside a series of authorised (for example, by a GP) photos of themselves (this is more complicated if – like Mr. Prasad – you were not born in the UK, as he would then also need to send a naturalisation certificate issued by the UK Visa Bureau (which could take months to obtain).

He would also need to pass a test and provide a £700 application fee). Currently, whilst some of the application form can be completed online, the IPS still has to print it out and send it back to you (so that the quality of the printed form is sufficiently good for their machines to be able to machine-read them once it is sent back to them again). Once Mr. Prasad has completed all this and the forms have been accepted, he will have to attend an interview to minimise the risk of identity theft and confirm his identity. To book the interview, he needs to have a letter from the IPS, with a reference number on it and then phone them up to make an appointment at one of the interview stations. After successfully completing the Q&A session, his application is then ready to be processed, and the passport will be issued within a few weeks. The whole process of applying for a new adult passport from start to finish takes at least six weeks.<sup>190</sup>

Instead the system should reside fully online. Once completed, Mr. Prasad would then create his own online account, becoming the centre of all his passport/identity related matters and allowing him to apply for a passport fully online. If this was his first UK passport, he would need to upload a photo of himself and have this authorised online by (for example) his GP's electronic signature. He would then fill-in the online application form. This would never now need to be printed out (after all, if it's going to be digitalised ultimately, why print it out in first place?). Instead, he would use a digital signature to verify his identity. This digital signature would be created through the online application form (this is similar to the public key infrastructure that Adobe offers<sup>191</sup>). Mr Prasad's typed name or other signature would be encrypted and then given a digital key. Once received by the IPS they could then tell if anyone had tampered with or altered his signature since he had submitted it.<sup>192</sup> Or, if perhaps he doesn't have an electronic signature he could just print a single page – the receipt that contains his application's reference number – sign this, and then send that only to the IPS. The system should also allow him to book his online-interview online too.

As well as the cost savings of such a system (saving on electricity, print cartridges, administrators' salaries, envelopes, paper, postage, interviewers' salaries, interview stations and their maintenance etc.), another advantage would be a fully organised and updated list of British passport holders in a single database.

Clearly, there are big identity assurance issues here around the security of citizen data, both in the transfer and storage of it. However, these issues are common to many (if not most) government services and the Government Gateway, Single Sign-On (SSO), identity verification and authentication initiatives discussed in [section 6](#) above (within the full version of this white paper), which are attempting to resolve these issues.

### 3. A lost or stolen passport

If Mr. Prasad loses his passport he currently has to order an LS01 form (to cancel his existing passport), print it out after he's received it in the post, fill it in and then send it back to the IPS. Once he's done this, he's cancelled his existing passport, but still then needs to apply for a new one (which still entails the rigmarole outlined above!).

Instead, he should just complete the form online and either electronically sign it or print the signature receipt to be physically sent to the IPS. The whole process should only involve two people – Mr. Prasad and the IPS administrator. This would be much cheaper, faster, more efficient and more eco-friendly. In this vision, the integration between the lost passport notification and the new passport application could be semi-automated to streamline what is currently a cumbersome and costly two-stage process.

### 4. An approved Government identification system

As we have seen above, one of the key problems in the 'new passport application' chain is identity verification. Getting photos that meet IPS guidelines and are a true likeness of an individual is currently a cumbersome, manual step. Each time you need a new passport, you need a new set of photos and each time these need to be manually verified. Instead, we envisage a situation where Mr. Prasad only needs to get a single set of adult pictures verified manually, with all renewal photos being derived from this initial likeness via auto-aging software. At the point at which he needs to apply for his new passport an auto-aged image is automatically generated by the IPS based on his initial likeness which will be stored by the IPS anyway. Mr. Prasad then has to confirm online that this is a true likeness of him at that point in time. If it isn't he runs the risk of not being let on the next international flight he needs to take, so it is in his interests to get Mrs. Prasad's second opinion! If it isn't a true likeness, he would obviously need to update the photo manually again with the IPS. However, in the vast majority of cases this type of

software would remove one of the manual time-delaying and management-intensive steps from the new passport application process. Basic software like Aging Booth allows for this functionality quite inexpensively already and there are even better solutions available where accuracy might be more important, as it would be the case here.

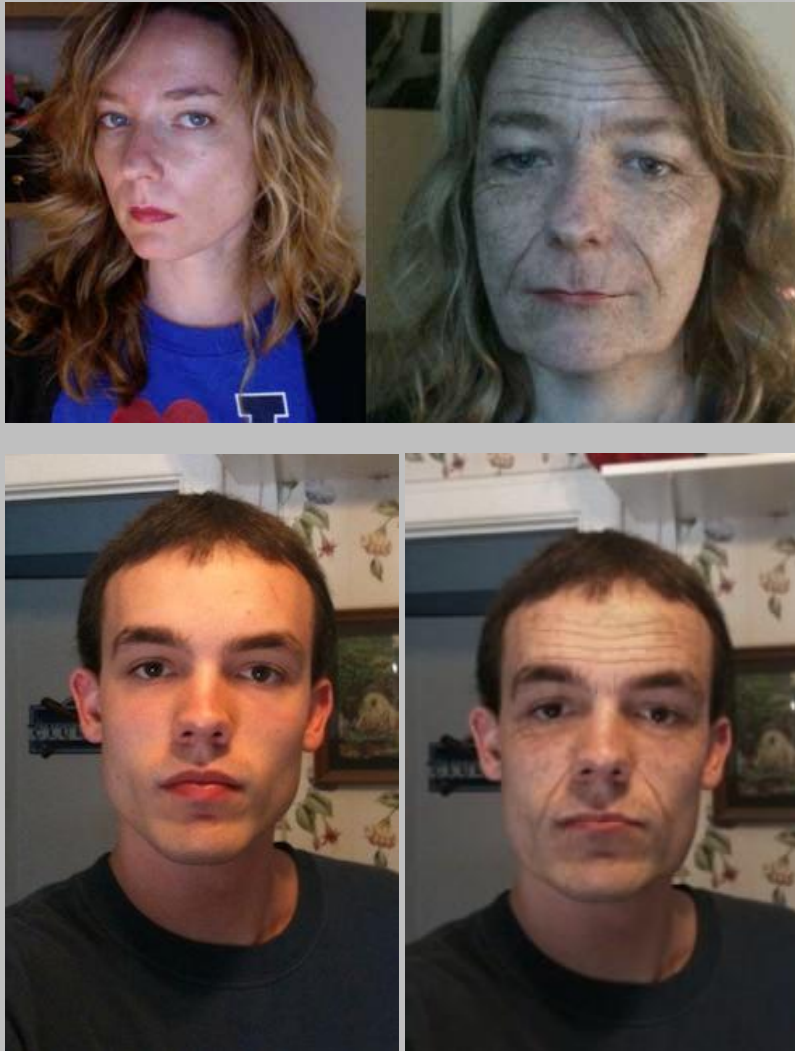


Figure 2: example results of the auto-aging software Aging Booth

## 7 Horizontally challenged

The second face to front-line service provision is in 'horizontal' cross-cutting approaches and initiatives across government. For example, there are various 'horizontal' ways in which front-line services can be provided or particular audience groups to target these services towards. These include:

- By channel (e.g. printed materials, call centres, face-to-face appointments etc.)
- By approach (i.e. particular 'approaches' to service provision e.g. social media, interactive FAQs, forums etc.)
- By audience (e.g. Black and Minority ethnic communities, hard to reach audiences etc.)
- Around common infrastructure: the hardware and services that the front-line services are provided utilising
- Around common Government data

These horizontal approaches are utilised across government departments and between local authorities or non-departmental public bodies. There may or may not be commonality in the way a particular approach is executed in each case and many organisations will utilise them very differently, but there are themes that work across government as well as common needs and requirements to deliver in particular ways to particular groups.

Digital initiatives might very well be able to help with solutions to some of the challenges of these horizontal approaches to service provision. We look at some of these approaches in a bit more detail below.

### 7.1 Channels: print media

#### 7.1.1 The current model

As we have seen above, it is not a straightforward to calculate how much government in total spends on printed materials, but that it spends an awful lot on it (as the proxies [discussed in section 5 above](#) show) is beyond doubt. One further example of how much print work is commissioned within government comes from the Department for Work and Pensions, which alone spent £400 million in 2007 on a printing contract with the Xerox group.<sup>193</sup>

#### 7.1.2 Plans for cuts to front-line services

- Nothing has been explicitly stated about a drive to cut public-sector print costs within either the Emergency Budget in June or the Comprehensive Spending Review in October, but as a potential corollary the Central Office of Information (COI) has announced that it will increasingly turn to digital channels following the end of the increasingly profligate public sector budgets of the past decade.

#### 7.1.3 Current example digital initiatives

- Almost all (if not all) government departments, public bodies and local authorities have websites.

#### 7.1.4 Current issues

Printed materials:

- Are out-of-date once they have been printed
- Require physical storage
- Require physical distribution / delivery
- Do not have a single, centralised editing and updating mechanism
- Require additional costs each time a new print run is required
- Do not have masters and-back-ups available in a single, easily accessible place
- Are insecure - anyone can read a physical copy, but digital copies can be password-protected
- Increase the UK's carbon emissions compared with digital documentation
- Do not unlimited digital distribution 'for free'
- Do not provide an easy audit trail for updates/changes (etc.) that need to be made

### Some potential digital improvements to service provision:

Below we provide some initial thoughts about how digital could improve upon printed materials:

#### 1. A blanket ban on printing any materials that might not be better placed online

There are a number of items that, as things stand, it is cheaper to print than not print, for example, agendas/attendee details for government-run events, pamphlets targeting hard-to-reach audiences and so on. However, there is also a huge swathe of materials that would be much better put online, for example, almost any annual report, strategy paper or policy document (not to mention the Transformational Government brochure, for which many printed copies exist!).

In the way that the Transformational Government agenda has mandated the convergence of public sector websites to the three so-called 'super-sites', Transformational Government 2.0 could mandate a blanket ban on the approval of any printed materials that might not be better placed online. As we have seen above, almost all (if not all) government departments, public bodies and local authorities already have websites. The move from printed materials to online materials need not be a complex or massively expensive operation, especially as the materials to be printed need to exist in a digital format prior to printing in any event. In addition, Mr. Clark can scale digital documents to adjust for his 'bad eyes', whereas printed materials are typically printed in too small a font-size for him to read and, additionally, he doesn't want any more money to be spent on producing a large-type printed versions.

It is also not beyond the realms of possibility, particularly as smart-phone penetration increases throughout the UK (it is currently around 28%<sup>194</sup>), that most public-sector documentation could be provided in a digital format only. Shared digital services to 'push' pamphlets, agendas/attendee details (etc.) to people's smart-phones could also be in place via a computer at the relevant physical location.

#### 2. A single storage mechanism for re-using content across the public-sector

At present printed materials for many government departments and public-sector agencies either:

- *Require duplication of time and effort:* agencies unwittingly re-create the same kinds of content that is already available elsewhere across the public sector (e.g. organisations like the Food Standards Agency have talked about content being duplicated between central government departments and public-sector agencies and there are many other examples)
- *Require manual editing:* agencies create services that utilise content from elsewhere in government, but do not add these as feeds, so that they quickly become out-of-date and have to be manually amended each time there is a change

Clearly, both of these are sub-optimal.

Instead, we envisage a pan-governmental extranet mechanism that allows government and other public-sector content to be stored in a single location, with appropriate security, permissions, diagnostic tools, search and browse functionality to ensure that those who need a particular piece of content can easily check to see whether something good already exists. Robust feeds would ensure that content could be made available to this single database either remotely (i.e. provided as an inbound feed that was edited and managed elsewhere) or from the central database (i.e. provided as an outbound feed to ensure that third-party services did not need to manage the content locally). It should also be possible to create new content versions if the sourced content did not exactly match the requirements of a particular body. A standardised taxonomy and nomenclature would aid indexing and searching.

#### 3. Dynamic PDFs to reduce wastage and increase relevancy

A huge number of government documents are cumbersome, wordy and overly long. In many cases an average user might only require one page within a much larger document. This leads to unnecessary paper wastage as the whole document gets printed in an effort to have a copy of that one page.

Instead, we see a situation where PDFs across the public-sector are able to be dynamically generated using consistent functionality (hosted via a pan-governmental remotely available website service). Users would be able to choose to receive individual pages or specific sections only (as well as whether they wanted to include cover pages, tables of contents, executive summaries and so on). This would not only save paper, but would allow users to create documents that were more relevant and accessible to their needs. Each article or section page would have a PDF button which would create a form to allow the user to specify the pages to generate into the PDF.

## 7.2 Channels: advice provision

### 7.2.1 The current advice provision model

The government currently funds, either directly or indirectly, a wide range of advice provision services. Most of these are face-to-face or person-to-person over the phone, but a number also have an online element to them. Government advice provision is delivered via a spectrum of services to the public, provided through an extensive range of provision mechanisms (including non-governmental providers). This spectrum incorporates advice on the more involved side, through educational and self-help tools, to informational materials on the less involved side. In most cases it is appropriate to consider these services as an integrated suite, rather than as discreet options. Many people will need different combinations of these services at different times. These services incorporate a wide range of media and delivery channels, including:

- Print (e.g. leaflets, flyers, billboard and other adverts etc.)
- Audio-visual (e.g. TV, DVDs etc.)
- Call centres and taped information
- Seminars and workshops
- Formal training sessions
- Informal informational announcements (e.g. messages at bingo nights)
- Self-help 'kits' (e.g. diagnostic tools, quizzes and checklists etc.)
- Interactive learning (e.g. DVDs, distance-learning software, interactive online tools etc.)
- Informational websites
- Performance (e.g. educational theatre, plots for soap operas etc.)
- Youth-engagement exercises (e.g. youth novels, outward-bounds courses etc.)
- Oral tradition (e.g. community 'elders' imparting knowledge about national and custom laws)

### 7.2.2 Plans for cuts to front-line services

- There appears to be no announcement in either the emergency budget in June or the Comprehensive Spending Review in October that call centre size or expense would be looked at.

### 7.2.3 Current example digital initiatives

This is a major area of government service provision. Example advice provision services from government include:

- *Department of Work & Pensions (DWP)*: deals with benefits related issues. BT, the company charged with delivering the DWP's call centres had already rolled out nearly 22,000 seats for the virtual contact centre by February 2010, and this was scheduled to increase to 30,000 by the end of 2010. In total, the DWP's contact centre programme will see the creation of one of the largest hosted contact centres in the world - covering 31,000 agents, 190 contact centres and 10 DWP agencies<sup>195</sup> and it is already one of the biggest in Europe.<sup>196</sup>
- *Her Majesty's Revenue & Customs (HMRC)*: deals mainly with tax credit and self-assessment related issues. The contact centre receives 40,000 calls a day during normal times of year, but peaks in call volumes related to deadlines for tax credits and self assessment mean the centres can receive as many as 250,000 calls a day.<sup>197</sup> In 2008-2009 these contact centres employed 10,500 staff at a cost of £233 million.<sup>198</sup> The HMRC contact centre operation is one of the biggest in Europe.<sup>199</sup>
- *NHS Direct*: the health advice and information service provided by the NHS for residents and visitors in England (corresponding services exist in Scotland and Wales), with advice offered through telephone contact and multi-channel digital service 24 x 7 x 365. The service is diagnostic in nature, with users asked questions about their symptoms or problem. Common problems are often given simple self-care advice, thereby potentially avoiding an expensive visit to a health care professional. More complex problems are assessed by a nurse and can then be given treatment advice or referred on to another service within the NHS.
- *Local authorities*: there are more than a thousand contact centres in England alone<sup>200</sup>

- *Money made clear*: a face-to-face debt advisory service established by the Financial Services Authority (FSA) providing sessions with independent financial experts (and also including a telephone helpline and website). The £130m project has been funded primarily from the Treasury's Financial Inclusion Fund, and delivered locally by Citizens Advice and other third sector organisations. Since 2006 it has helped service close to 300,000 people<sup>201</sup>
- *Community Legal Advice*: this is a government-funded advice service, set up by the Legal Services Commission which aims to help people England and Wales deal with civil legal problems. It comprises a telephone helpline, website, advice centres and a series of advice leaflets.
- *Care Direct*: a regional telephone advice service in the west of England aiming to make life easier for older people by making information and help available when they need it. For example: Care and Support, benefits claims, house alterations, how to keep well and so on.
- *Citizen's Advice Bureau*: a network of independent charities throughout the UK that give free, confidential information and advice to help people with their money, legal, consumer and other problems. The twin aims of the Citizens Advice service are: To provide the advice people need for the problems they face; to improve the policies and principles that affect people's lives. Trained advisers help write letters, make phone calls, negotiate with creditors and represent clients at tribunals and courts. Although independent of government, they are partially funded by BIS through its funding of the umbrella bodies: Citizens Advice (CitA) in England and Wales and Citizens Advice Scotland (CAS) on behalf of all Government departments.
- *'Warm Homes, Greener Homes: a strategy for household energy management'*: this a strategy paper from the Department for Energy and Climate Change who are going to set-up a universal advice service to help people make informed decisions about energy management in their homes, understand the potential impact of measures and compare different offers. This will be supported by providing access to more tailored advice through Home Energy Advice packages.

Most of these advice services already have a web-based element to them.

#### 7.2.4 Current issues

These include:

- *Hard-to-reach and vulnerable users*: many of the heavy consumers of advice services will be hard-to-reach and vulnerable groups, as, typically, the more problems an individual has, the more likely they are to suffer further problems (the longer matters are left unresolved, the more this vicious cycle persists, and the harder it is to break<sup>202</sup>). It is also highly likely that these groups will be less likely to have access to and to consume digital services.<sup>203</sup>
- *Expense*: advice provision is expensive: call centres typically cost around £3 per call (for a basic service),<sup>204</sup> up to £21.20 per call (for an out of hours type service)<sup>205</sup> up to and £70 per call (for a specialist service).<sup>206</sup> In comparison a postal transaction costs around £5 per mail out.<sup>207</sup> Face-to-face advice provision is even more expensive. For example, BIS's debt advice service cost £311 per person between April 2006 and September 2009. Similarly, The Guardian reports that call centres cost £51 per case and that face-to-face advice costs an average of £265 per case.<sup>208</sup>
- *Lack of clarity and brevity*: there is often too much information or too many options on advice websites (for example, there are over 70 links on the 'Community Legal Advice' website homepage [www.communitylegaladvice.org.uk](http://www.communitylegaladvice.org.uk) and over 100 links on the 'Money made clear' website homepage [www.moneymadeclear.org.uk](http://www.moneymadeclear.org.uk)). As a result, navigating them to find the answers to your specific needs can be very difficult. Also, in attempting to be 'all things to all people' they often fall foul of not being targeted enough and not providing clear calls to action for different audience types (for example, the 'Money made clear' website [www.moneymadeclear.org.uk](http://www.moneymadeclear.org.uk) has no clear audience-specific calls to action)
- *Contact centre inefficiency*: the HMRC contact centre receives between 40,000 and 250,000 calls a day. In 2008-2009 it employed 10,500 staff (though, clearly, some of these staff will be administrative and not operatives). On crude analysis this would seem to indicate that on average each of these operatives dealt with between 4 and 25 calls a day. The majority of the usage peaks are around tax credit and self-assessment deadlines, meaning that for much of the year they appear to be significantly under-utilised.

#### Some potential digital improvements to advice provision:

Below we provide some initial thoughts about how digital could improve advice provision:

## 1. Intelligent interactive FAQs and the use of diagnostic tools

In many cases, what is required is a re-orientating of the expensive provision of face-to-face or person-to-person (if over the phone etc.) advice provision to a greater percentage of self-serve information provision through intelligent interactive FAQs and diagnostic tools (etc.). We discuss the idea of intelligent agents in the section on '[Legal and law enforcement services](#)' above. These styles of interaction can also apply to FAQs as well as 'agents'. An intelligent FAQ system allows the users' question to be interrogated against a constantly growing database of questions and answers. That database also grows and becomes richer as a result of their particular question. When Mrs. Prasad is trying to understand the inner complexities of the taxation system or of whether or not she is still eligible for child benefit, she wants to get to that information without having to wade through lots of other potentially confusing information first. This type of system has the following benefits:

- The throughput is extremely high and can lead to a much more informed and happy user because it is so much quicker
- It is a much more cost efficient method of supporting users, with the costs of such a system typically paid for over the course of a few months of operation, when compared with a call centre. SOCITM estimates that the cost per transaction for an automated online solution such as the Royal Mail's 'Ask Sarah' service (which, depending on the service, might comfortably answer 80% of commonly requested issues) is only £0.27 per transaction when compared with a call centre at £3.21 per transaction or offline provision at £6.55 per transaction.<sup>209</sup>
- It can be much more accurate in responding to enquires
- It is much more time efficient (one-to-many concurrency rather than one-to-one with a call centre representative)

Additionally, the use of diagnostic tools should be a fundamental part of what government does online. Diagnostic, triage-type systems should present the user with a set of tailored questions that, once answered, created a much smaller subset of potential support information and guidance. Some government services do already use this approach (e.g. something like NHS Direct), but the vast majority do not. A highly interactive triage system can incorporate broadband applications, video, audio and rich graphics to support the provision of increasingly customised advice and should develop into a 'smart application' – 'smart' because it reacts to Mrs. Prasad's inputs by providing information increasingly tailored to her needs. We all know how frustrating it is to speak to a customer service agent who has no idea of your particular issue or needs and attempts to fob you off with a standard answer, so there is tremendous demand for information to be clear, simple, and directly relevant to a users' personal situation and there is little patience in searching for information if it is not readily available. In this regard smart applications delivering on-demand and targeted information score particularly highly.

There is a clear need for 'collateral support', that is, explaining *in context* the information an individual needs to achieve a satisfactory outcome. Until the direct and immediate relevance of a particular solution or approach has been explained to a user, they are likely to have limited interest. Once it has been explained they are likely to want to absorb the knowledge there and then. Even if the smart application does not lead to their preferred outcome, it should provide them with enough information to feel confident of their next steps. It shouldn't leave the user without any options, but rather empower them, offering relevant links, advice or contact details. This type of approach would significantly reduce Mrs. Prasad's time to search, help her to find the required information, thereby increasing her knowledge and helping to make sure that she is an informed citizen, rather than a bamboozled one.

## 7.3 Channels: mobile and location-based services

### 7.3.1 Current mobile service provision

When a specific website is accessed by a mobile phone or other small-screened mobile internet device, the page can either render exactly as it would if the page had been accessed on a desktop/laptop machine or, if there is a mobile functioning site developed, then users will access a mobile version of the service. Most government and other public sector services do not currently explicitly cater to mobile phones or utilise phone-specific technologies (e.g. location-based services, geo-tagging etc.), so users are left with a big-screen, non-specific location experience on a small screen.

### 7.3.2 Plans for front-line services

- There appears to be no announcement in either the emergency budget in June or the Comprehensive Spending Review in October of a move towards mobile and/or location-based services.

### 7.3.3 Current mobile initiatives

- The government has produced at least six mobile apps, some of them are available already and others are still in development. They include:<sup>210</sup>
  - *Department of Health*: a quit smoking app; a drinks tracker which monitors your alcohol consumption; a Football Fan Fitness Challenge.<sup>211</sup>
  - *Foreign Office*: a travel advice app
  - *DVLA*: developing an app called Motoring Masterclass (demonstrating how to change a wheel, charge spark plugs and other motoring advice). It is costing £40,000 to develop.<sup>212</sup>
  - *Department for Work and Pensions*: Jobcentre Plus job search for both iPhone and Android phones, developed at a cost of £32,775 plus VAT. The DWP says this had been downloaded more than 50,000 times after 10 weeks on Apple's App Store.<sup>213</sup> If the app is more instrumental in getting even a small number of these people off benefits and into work it will have paid for itself many times over.
  - *Leicester City Council*: piloting a program to give 50 of its employee's iPads.<sup>214</sup>
  - *Direct.gov and NHS Choices*: have developed mobile versions of their websites. These push functionality to the forefront, rather than information. The mobile sites are customised for the smaller screen and do not require a high powered processor to be accessed.

### 7.3.4 Current issues

These include:

- *Shifting user expectations*: devices like the iPad, Kindle, Galaxy Tab, Advent Vega, net-book, other e-readers and smart-phones have begun to shift the users' expectations of where they can access online services and how slick these services should be.
- *The rise of eBooks*: Amazon has announced that, for the first time, they have sold more digital copies of publications than hard copy print books (i.e. excluding paperbacks).<sup>215</sup>
- *The rise of smart-phones*: smart-phone penetration is currently around 28% in the UK<sup>216</sup> and is expected to reach just over 38% by 2013.<sup>217</sup> Most people would agree that they would like services to be accessible to them in a format that they use most regularly and have with them all the time, namely their phones.<sup>218</sup>
- *Lack of mobile versions*: most public sector government websites have yet to create a mobile version of their online services. This saves money at the cost of accessibility. For example, HM Revenues and Customs (HMRC) has over 447 million website page requests annually, yet they do not have a mobile site.<sup>219</sup> As the smart-phone market increases substantially every year, it will be increasingly important for these sites to cater to users who want to access via that platform.

- *Lack of Location-Based Services (LBS) services:* LBS and geo-tagging offer lots of opportunities for public-sector interaction, but they are not being embraced as they should be. Government websites and public services could become far more local and personalised if location were taken into account. This is only going to get more important; already, various location-based services such as Foursquare, Gowalla, Google Latitude and Facebook Places are available and these are predicted to get more sophisticated and more widely used. Apple, for example, is recently applied for a patent for location-based advertising.<sup>220</sup> Mobile location-based service revenues in Europe are forecasted to grow at a compound annual growth rate of 12% to reach €420 million by 2015.<sup>221</sup>
- *Too many platforms:* there are currently a lot of mobile platforms out there (e.g. iPhone, Blackberry, Android and Symbian OS etc.) and developing for multiple (and quite different) platforms is expensive.

### Some potential digital improvements to mobile/location service provision:

Below we provide some initial thoughts about the possibilities for front-line mobile/location services:

#### 1. Local authority location-based reporting services

It would be sensible for all local authorities to have some capability for residents like Ms. Jones to report issues utilising location-based services. This should include the ability for her mobile smart-phone to be able to report issues with traffic lights, street lights, fly-tipping, pavement/potholes/works-related issues and nuisances so on). She wants to live in a nice neighbourhood, after all. These would provide access to SMS/MMS numbers and email addresses for various local authority departments. The residents' location would be automatically detected and sent along with the problem details via the devices' GPS or WiFi capability. This is likely to significantly reduce the amount of time for contractors to find the location of things that needed to be fixed.

#### 2. Better targeting of hard-to-reach groups through mobile services to make earlier interventions

A number of hard to reach groups either have a greater mobile penetration rate than the population as a whole<sup>222</sup> or are less likely to use a desktop/laptop machine than the average:<sup>223</sup>

- *Black and minority ethnic groups:* 3G mobile phones are more prevalent among minority ethnic groups, with consequent higher levels of spend, and awareness of content control systems.<sup>224</sup>
- *Young people:* a national study conducted by Nestlé Social Research Programme, examined the importance of mobile phone and internet technology for young people between the ages of 11-21. The report found that 97% of females, and 92% of males, in a national sample of 11-21 year olds have access to a mobile phone. More than four fifths of females, and seven out of ten males, 'could not bear to be without' their mobile phone. Three quarters use their mobiles to speak to friends at least daily, and one in six do so more than five times a day. However, texting is the most frequent form of communicating; nine out of ten text at least daily, and over half (54%) do so more than five times a day.

Reaching hard-to-reach groups is a disproportionate cost for government<sup>225</sup> and, clearly, based on the insights above, utilising mobile is likely to be a much more effective way of reaching some of the audiences outlined above.

#### 3. Common government mobile infrastructure

At the moment a lot of mobile development is focused on the early market leader (i.e. the iPhone). Building mobile applications for a single operating system is somewhat commercially restrictive. A better approach would be for central government to provide a grant for a government mobile middleware platform to be built that would easily allow developers to develop a single application that can work across multiple platforms. This would need to be open source and would need to aim to overcome the current difficulties of there being too many mobile platforms. For example, in the way that government is explicit about which browsers their services will be able to work on effectively (in particular, it costs a lot to develop for the idiosyncrasies of IE6, as well as more exotic browsers like Safari), government also needs to be explicit about those mobile platforms which it will support. Which platforms are required will depend on the audience a particular service is targeting, but these will probably be some combination of iPhone, Blackberry, Android and Symbian OS.

This would allow public-sector bodies to be able to commission mobile services utilising this platform to ensure as wide an audience as possible and allow for new platform entrants. This common infrastructure

would increase the economy of scale for agencies to build onto and could feature elements such as:

- Analytics and mobile measurement
- Location-based services and geo-tagging
- The potential for premium paid-for services (unlike TV or print)

This would also allow for the following:

- i. Web-based apps to use open standards so that anyone can access from any browser
- ii. The provision of Open Data Interfaces (e.g. open data streams like <http://data.gov.uk/> and <http://innovate.direct.gov.uk/> etc.) so independent platform developers can develop to standardised formats as appropriate.

This type of approach is probably a few years off due to the current highly non-standard nature of each of the platforms and their lack of commonality respectively. However, it would greatly reduce the average cost of app development per citizen reached and would also stimulate the mobile economy. It is also far less costly in the long-term to develop a strategy to deflect people from call centres or person-to-person appointments and allow them to self-serve instead. As we have seen [in the 'Channels: advice provision' section above](#), it can cost anything between £3 - £71 to handle a single enquiry over the phone with a call centre agent. In comparison, an App developed for £40,000 which 'only' gets 50,000 downloads with one use, deflects 50,000 enquiries from a call centre operative or other member of staff. That would equate to 80p to process the contact via the app, already representing a large saving on the call centre costs.

## 7.4 Approaches: social media

### 7.4.1 The current social media provision

Social media has completely revolutionised the way communities interact with each other. Facebook, MySpace, Flickr, Twitter, and an array of other platforms have allowed people to do the things they have always done, but online and instantly i.e. they can:

1. Communicate (on- or offline)
2. Express themselves
3. Define and construct their identities
4. Meet people like themselves or with similar interests
5. Have the ability to create, influence, and be in control (i.e. be empowered)
6. Keep in touch and keep up with the 'Joneses'

Web communities fall into two categories:

1. *Those that are pre-existing*: social networking services that serve to replicate an offline social circle (e.g. Facebook and MySpace). These act as a 'hanging out' space that is more or less interchangeable with time spent with friends offline. Interactions online re-enforce interactions that take place offline.
2. *Those that are formed online*: many strong communities arise from interest-based message boards, which are often sub-sections of larger services (e.g. Fodors.com for people interested in travel advice; ThePrincetonReview.com for people applying to college, law school; a band's website etc.). People form their identities via conversations more than through user profiles. Such sites have led to subsequent offline bonds.

### 7.4.2 Plans for front-line services

- There appears to be no announcement in either the emergency budget in June or the Comprehensive Spending Review in October of a move towards social media or community services online.

### 7.4.3 Current example digital initiatives

Many public sector organisations have already taken advantage of social media already and there are several current examples of central government utilising social media:

- *UK Prime Minister's office*: has a Twitter feed<sup>226</sup> and Flickr presence<sup>227</sup>
- *Ministry of Defence*: has social media blog links to several social gathering websites<sup>228</sup>
- *Cabinet Office*: has a digital engagement blog<sup>229</sup>
- *UK Trade and Investment (UKTI)*: has a LinkedIn Group<sup>230</sup>
- *IDeA's social media platform 'Communities of Practice'* ([www.communities.idea.gov.uk](http://www.communities.idea.gov.uk)): has over 20,000 local government registrants
- *The Foreign and Commonwealth Office (FCO)*: is active on Facebook (in multiple languages), has numerous Twitter accounts, shares photos on Flickr and uses YouTube, with many of Britain's embassies around the world each having their own accounts too. In addition, a recent development has seen the department encouraging developers to use its RRS feeds in creative ways.
- *Directgov*: is on Twitter and in April 2009 launched Moneyspeak to help find explanations for confusing terms around financial jargon then points users to content on Directgov which could help them. Essentially it takes the Directgov services into other online spaces to reach target audiences.
- *NHS Direct*: has Twitter and Facebook channels

LGEO Research (a blog reporting on public sector social media, web 2.0, e-learning and digital engagement matters) reports that there were:

- 133 local council Twitter accounts as of 7 October 2010<sup>231</sup>
- 60 local council YouTube accounts as of 14 October 2009<sup>232</sup>
- 35 local council Flickr accounts as of 19 February 2010<sup>233</sup>
- 49 local council Facebook accounts as of 7 October 2010<sup>234</sup>

Although many public sector bodies have started to open up in this way, many still need to do a better job of updating information and responding to queries. In addition, other public sector organisations need to learn from the successes of their fellow services and follow suit. For example, Business Link appears to be yet to have a social media presence.

#### 7.4.4 Current issues

These include:

- *Concerns over privacy and social networks*: concerns over a lack of privacy online are becoming increasingly important. Social networks like Facebook have a vested interest in helping people find each other, which means they want to make more information public so that it's searchable. This might help to explain why the default settings for Facebook profiles have moved much more to the public sphere. Many people are happily updating their profiles and statuses without giving too much thought to the potential downsides of doing so. All of this information is massively valuable to marketers. The more they know about people, the more they can target products and services based on their location, age group, income bracket, occupation, social category, sexual orientation or a myriad of other demographics. In August 2010 a 2.5GB database file containing Facebook users' personal data was put up on the torrent downloading site Bit Torrent. Numerous IP addresses discovered to have individuals downloading the file included more than 65 major companies, including Coke, Pepsi, Motorola, Apple. Another scare story comes from the possibilities of nefarious mash-ups based on user profiles in different social networking sites. For example, using APIs, someone could create a service that would combine updates of people's locations ([Foursquare](#)) with updates of what people have bought ([Blippy](#)) with updates of what people are doing ([Twitter](#) or [Facebook](#)) to create a really good service for internet-savvy criminals. As it is, services like [Please Rob Me](#) (a mash-up that combines Foursquare and Twitter to highlight when people have let the social media world know that they are not home) are quite scary enough! People need to think much more about what they are broadcasting and who has access to this information.

#### Some potential digital improvements to social media provision:

Below we provide some initial thoughts about ways that front-line social media services could be improved:

##### 1. Adopt best practice to get the greatest value for money

Most approaches by government and the public-sector to create social and community services do not adopt best practice. Best practice social media is about having a *destination* and *dissemination*, that is, adopting a 'hub and spoke' approach, with a central website acting as the hub collating the data, feeds and users from the remote 'spoke' social networks (e.g. Facebook, Flickr, YouTube, MySpace etc.) as well as that generated at the 'hub' itself. Both the hub and spokes should update automatically as one of the other properties is updated. The hub should also provide coherence and make it feel like a concrete community programme. Ms. Jones does not want to feel that government is not joined up or that the 'left hand doesn't know what the right hand is doing'. Social media services from the public sector need to feel that they are integrated and working towards helping to deliver the big picture outcomes that the citizen expects of that organisation. In fact Ms. Jones, quite reasonably, wants that of any public sector service on any platform, not just the social media ones!

Another best practice approach is to deploy 'social features' onto a website. For example, these might allow Ms. Jones to share the site URL on MySpace, become of a fan of the Facebook homepage (which is then published on their Facebook newsfeed encouraging her friends to join), follow the organisation/campaign on Twitter and so on. In addition, it is a good idea to produce content that she can share wherever she is (i.e. widgets).

There are a variety of other best practice approaches to optimise social and community spaces:

- Social media needs a creative engine which is best driven by a combination of both editorial content and User Generated Content (UGC)
- Social apps need tending: ongoing community management is essential for the thing to have 'legs'
- Participation needs to be easy: you need to provide Ms. Jones with the means (tools) to participate and reasons to do so
- Work with people's motivations: self-expression, being seen to be the first, recognition and internet

fame. In short, you have got to make it easy for people to look good.

- Ms. Jones is just a click away from sharing her opinion, so it's no longer about telling her your organisation is good, it's about showing her. Ensuring your communication approach is about participation, openness, conversation, community, is authentic and not overly-commercial, will mean that she believes that you are good and will help to make her an advocate to tell others so too!
- Build on Ms. Jones' feedback and engagement and include it. Showing that others are interested in your offering will make others wonder what they are missing out on.
- Leverage existing platforms, rather than creating new ones. Go to where Ms. Jones already is and has an account, rather than presuming that she will come to you. Don't forget that this is also where her friends are too.
- Produce content that is relevant to her in each respective space/network
- Seed the service with advocates and existing supporters to 'get the ball rolling' and creating a groundswell prior to launch
- Any launch needs to be heavily promoted, otherwise you risk owning a 'tumbleweed' service
- Activity needs to be monitored, then optimised yet open to opportunistic emergent phenomena. Perhaps Ms. Jones doesn't use the service in ways that you anticipated
- Celebrate success by providing social proof ('X members joined this week', 'X people are watching this' etc.) to encourage others to take part (her boyfriend, Nathan, for example).

## 2. A 'Big Society' social portal

How can the government encourage the take-up of the 'Big Society' in a pretty sceptical milieu? The book 'Nudge: Improving Decisions about Health, Wealth, and Happiness' by Richard Thaler and Cass Sunstein points to a potential approach to achieve this. The book draws on research in psychology and behavioural economics to posit libertarian paternalism and the active engineering of choice architecture. In designing choices, some features of human psychology can be used. One of these psychological features is social proof (i.e. that most people prefer to do what they think everyone else is doing and are, therefore, more likely to embark upon a course of action that other people are already doing).

In parallel, a number of local councils, particularly Tory local councils, are embracing the 'Big Society' concept and are trying to create initiatives that speak to it and to develop packages that support it. For example, Windsor and Maidenhead council has come up with the concept of "big society reward points" to help encourage citizens to volunteer, with points that are redeemable in supermarkets, high street shops and restaurants in return for volunteering activities. There will, no doubt, be more of these initiatives as central government funding dries up and as councils seek to earn 'brownie points' with the Treasury and the P.M.'s office.

So if Ms. Jones wants to find out about these sorts of initiative or even to set one up herself how would she know where to start? Tying the thoughts above together all of the 'Big Society' initiatives should be available to search for, find out about and get involved with under a 'Big Society' portal site. This portal should allow Ms. Jones to:

- Find out about 'Big Society' initiatives throughout the country
- Take an audience-specific approach and have prominent calls to action 'Want to volunteer in your local area?', 'Find out about Big Society points', 'Redeem your points now' etc.
- Facilitate her getting involved
- Allow her to come together with others to form their own initiatives
- Share best practice

Savings could be made by the overall facilitation and encouragement of the 'Big Society' concept, which in turn, should hopefully allow some services to be provided or maintained without central government funding. In addition, revenues could potentially be accrued by allowing the portal to become an advertising mechanism for those organisations offering redemption of the 'Big Society' reward points (e.g. supermarkets etc.).

## 7.5 Approaches: content and evaluation

### 7.5.1 The current model

All websites need content, this is the life-blood of online and mobile services and it is what keeps people coming back. Content is a generic term which applies to copy, images, video, animations, audio and so on. Clearly, it needs to be appropriate to the service in terms of tone of voice, format, saliency, relevancy and volume and so keeping content up-to-date is a constant process either of refreshing existing content or adding new content.

Evaluation is often highly focused on the *outputs* from the digital service (e.g. the number of service visitors, click-through rates, dwell times etc.), rather than the organisational/societal *outcomes* that a particular public-sector organisation is attempting to reach.

### 7.5.2 Plans for front-line services

- There appears to be no announcement in either the emergency budget in June or the Comprehensive Spending Review in October of a move towards more funding of content or more thorough service evaluation approaches.

### 7.5.3 Current issues

- In general, there is an insatiable desire to consume more and more content and, because content is expensive to produce, there has been a move towards User Generated Content (UGC) to allow the burden for content creation to fall more on individual service users. The advent of UGC creates (or, at any rate, provides the tools to create) a wealth of user-to-user, user-to-organisation and organisation-to-user communications and content. This is a great boon for many service owners as the engagement and interest that UGC generates, creates the conditions for users to become more involved, service advocates. The main issue with UGC is the moderation and editing of users' content, which can become highly burdensome. Some services (the BBC and many newspapers, for example) have moved to a model where users also perform the moderation function with 'Complain about this comment' type functionality, but this might be 'shutting the stable door after the horse has bolted' for some (particularly sensitive) government services.
- UGC issues:
  - Where UGC is facilitated there is generally no standardisation of responses in terms of things like spelling and grammar. This often has the unfortunate effect of some decision-makers discounting good ideas that might have spelling errors or slang in them.
  - There can also be a 'green ink' effect whereby those people (individually or collectively) who shout loudest or longest get to set, or at least influence, the agenda, with other contributions being marginalised.
- Content of all types can exist in multiple places (i.e. there is significant duplication of content across the public-sector) and this leads, in turn, to significant repetition in terms of UGC responses.
- In particular, for public-sector websites content is often thought of last. Agencies rightly believe that the expertise for the generation, editing and ongoing management of content typically resides with the commissioners of the digital services (or their associated policy teams). For this reason they generally suggest that the client team perform content creation, collation and editing tasks in relation to a particular service. Content is a particularly involved issue and the client team often under-estimate the time needed to audit, sift, generate and manage the content required for a digital service. This can lead to large delays in service launches, as well as, a lot of additional cost as extra resource is drafted in to support the process.

- Digital services are generally only one small part of the marketing and communications mix. Increasingly, users use multiple channels and platforms to interact with a service or organisation. Each of these interactions builds on the others. Eventually, at the culmination of this process, the user may decide to 'transact' that is to buy something, register with a service, book an appointment, call a helpline, submit a form and so on (depending on the service). Many of these transactions occur offline and even when they do occur online there may have been a large amount of offline interactions to facilitate the online transaction. For that reason it is often very difficult to directly attribute a transaction (e.g. booking an appointment, calling a helpline etc.) to the digital sphere alone or even to attribute what impact the digital sphere has had on the user and how it might have contributed to them 'transacting'. Even more than this, it is even more difficult to say how far these transactions, even in the aggregate, contribute to positive societal 'outcomes' (e.g. reducing smoking rates, increasing healthy eating, encouraging the use of public transport etc.). Consequently, most digital agencies concentrate on solely measuring digital 'outputs' that are directly within their control and are able to be much more easily and directly measured and evaluated against. These outputs typically include things such as the number of service visitors, click-through rates, dwell times, funnel analysis (seeing how many users completed particular paths/routes through the service) and so on. However, these are not always particularly helpful to the public-sector organisation as they do nothing to create positive societal outcomes on things like teenage pregnancy, obesity, child poverty or smoking rates and so on.
- Right now, there is clearly a particular issue with budgets both for the creation, curation and management of content as well as for the evaluation of digital services.

### Some potential digital improvements to content provision and evaluation methodologies:

Below we provide some initial thoughts about ways that front-line content provision and service evaluation could be improved:

#### 1. A totally outsourced web solution

Current provision of website services to the public-sector has some key problems that mean that public-service digital delivery invariably suffers from delays and poor service. These include:

- Departmental attention to the critical issue of content provision and ongoing content updates
- Evaluation and measurement often being considered late in the process resulting in a small budget allocation and a focus on weaker output measures being as proxies for success

What is required instead is a public sector service delivery model that responds to today's needs as well as the wealth of recent press coverage around the need to reduce central and local government web delivery costs. As government looks to make cuts to expenditure across the public sector, new models need to be considered across all areas of provision in order to deliver improved service at reduced cost. Mr. Clark is not particularly happy about potentially giving up his free TV licence if he sees that the government is spending £100 million on a website.

An outsourced approach would, instead, deliver an end-to-end solution to website delivery with outcome based measures at its core. It would deliver a turn-key website solution including strategy, development, content provision, maintenance and evaluation. Clearly, this model varies significantly from the current approach where content provision and evaluation are delivered within the departments resulting in large overhead cost structures and at times, misaligned evaluation to business need.

This type of solution would define output and outcome measures at contract stage, ensuring remuneration is matched to business needs and deliverables. Equally strict service delivery measures would be set so as to ensure a public service delivery that meets/exceeds private sector provision. This approach would deliver a wide range of cost reduction and service delivery benefits, including alignment with recent government strategy, cost reductions, improved service levels, whilst maintaining knowledge levels. All in all it's an approach whose time has come and which allows Mr. Clark to feel much more comfortable that government money is being spent wisely.

#### 2. Pan-government analytics

The government has already developed citizen identification and authentication mechanisms in the guise of the 'Government Gateway', 'Government Connect' and 'Single Sign-On' (SSO) initiatives (discussed in [section 6](#) above within the full version of this white paper). These all help when identifying

a particular citizen and helping to track that citizen's usage of online government services across the plethora of public-sector websites, mobile services, call centres (etc.). However, little is being done across government in terms of tracking unauthenticated individual users usage of government services or users in the aggregate.

It is highly likely that individual websites will have individual tracking solutions and analytics packages associated with them, but these will not be configured to work *across* public-sector services. They will also be bounded by the usage of a particular service and will probably not talk to each other (e.g. if one service utilises WebTrends, another Google Analytics and a third a bespoke package based on a particular Content Management System).

Instead, we envisage a pan-governmental analytics solution that can track usage across all public-sector online services for authenticated users, unauthenticated users, users in the aggregate. This would help to:

- Identify the totality of online behavioural patterns across government
- Build a much richer understanding of individuals and specific audience types
- Develop a taxonomy of pan-public sector user journeys and user personas
- Identify trends by audience type over time
- Create a much richer picture of cluster issues
- Understand 'blockages' in the system

As dunnhumby has revolutionised Tesco's use of data and utilised it to best effect,<sup>235, 236</sup> so that Tesco is now the pre-eminent retailer in the U.K. and one of the largest worldwide, we believe that government could similarly:

1. Collect data on all government online services
2. Tie data all this together
3. Use private sector best practice in data collection, warehousing and analysis to improve public-sector services and make them much more 'outcome' focused

### 3. A single storage mechanism for re-using content across the public-sector

At present printed materials for many government departments and public-sector agencies either:

- *Require duplication of time and effort:* agencies unwittingly re-create the same kinds of content that is already available elsewhere across the public sector (e.g. organisations like the Food Standards Agency have talked about content being duplicated between central government departments and public-sector agencies and there are many other examples)
- *Require manual editing:* agencies create services that utilise content from elsewhere in government, but do not add these as feeds, so that they quickly become out-of-date and have to be manually amended each time there is a change

Clearly, both of these are sub-optimal.

Instead, we envisage a pan-governmental extranet mechanism that allows government and other public-sector content to be stored in a single location, with appropriate security, permissions, diagnostic tools, search and browse functionality to ensure that those who need a particular piece of content can easily check to see whether something good already exists. Robust feeds would ensure that content could be made available to this single database either remotely (i.e. provided as an inbound feed that was edited and managed elsewhere) or from the central database (i.e. provided as an outbound feed to ensure that third-party services did not need to manage the content locally). It should also be possible to create new content versions if the sourced content did not exactly match the requirements of a particular body. A standardised taxonomy and nomenclature would aid indexing and searching.

## 7.6 Audiences: targeting hard to reach groups

### 7.6.1 The current model to targeting hard to reach groups

'Hard to reach' groups are those communities, demographic groups or communities of interest that government (or, indeed, any) service providers find particularly difficult to communicate with. This might be for a variety of reasons:

- *Black and Minority Ethnic (BME) communities*: different cultural preferences about communication channel usage and consumption of services
- *Socially excluded groups* (e.g. offenders, homeless people): unlikely to have stable access to communication channels
- *Vulnerable groups* (e.g. the elderly, young people, care leavers, mentally ill, learning disabled): non-standard consumption of services

Public-sector services that specifically target BME communities include:

- *National Youth Homeless Scheme*: specifically helps homelessness organisations to become more available to young BMEs (helping with BME community lodgings and so on)<sup>237</sup>
- *Black and Minority Ethnic Community Services (BMECS)*: support, relief, and provision of community services for BME groups<sup>238</sup>
- *Black and Minority Ethnic Disability Services*: helps identify BME adults with disabilities and offers help, information, and support<sup>239</sup>

Public-sector initiatives specifically targeting socially excluded groups include:

- Darlington council's 'Social Inclusion Strategy' maps deprivation data and data on unemployment, poor educational attainment, ill health and the number of people over 85. An extensive face-to-face consultation exercise was undertaken over a period of nine months. This led to the development of a social inclusion strategy with unambiguous goals and the clear identification of organisations or individuals responsible for achieving these goals.<sup>240</sup>
- In a telephone poll, 63% of 78 local authorities in a telephone poll had developed an authority-wide strategy to overcome social exclusion in their local areas. These strategies are frequently supported by traditional initiatives such as the New Deal for Communities, Sure Start for Children in Disadvantaged Areas, Health and Education Action Zones, and Single Regeneration Budget and Neighbourhood Renewal projects that focus on the needs of socially excluded groups or neighbourhoods.<sup>241</sup>

Public-sector initiatives specifically targeting vulnerable groups include:

- St Helens Children's Partnership's 'Children at Risk Register' works with key partners (the council, health trust and NSPCC) to develop a £200,000 pilot project to share information that might indicate a change in a child's wellbeing (i.e. information from local schools, primary care trusts, Merseyside Police, the council's social services and education & leisure services departments, and other partners). Each of these groups can only access the data they input, but each week a small multi-agency team of childcare professionals meets to look at the complete database and examine all changes that might indicate a child is moving towards 'at risk' status.<sup>242</sup>
- Middlesbrough Council's 'Active Intelligence Mapping' project seeks to: map crime by geographical area and type of crime; profile the characteristics of crime areas; identify the perpetrators of crimes and their patterns; target responses and deploy patrols; monitor and evaluate targeted actions<sup>243</sup>

### 7.6.2 Plans for cuts to front-line services

- There appears to be no announcement in either the emergency budget in June or the Comprehensive Spending Review in October of a move towards more audience-specific services targeting hard to reach groups.

### 7.6.3 Current example digital initiatives

These are currently very much a mixed bag.

- Example projects for BME communities include:

- BMESpark ([www.bmespark.org.uk](http://www.bmespark.org.uk)): a site that helps organisations to support vulnerable black and minority ethnic people.
- Leeds BME Network ([www.leedsbmenetwork.org](http://www.leedsbmenetwork.org)): a network of BME voluntary and community groups in Leeds focusing on enabling and promoting BME representation at all levels in the city. Its objectives are to: establish a BME Network where communities can work together on issues of common interest; build representation and influence of BME communities as a strategic and policy making level; address issues of future independence and sustainability of the network.
- Socially excluded groups:
  - In their September 2005 'eGovernment: Reaching socially excluded groups?' report the IdeA states that "Socially excluded groups are currently very poorly served by the eGovernment agenda. If they are to benefit more from digital transformation, social inclusion needs to become a priority in the future development of eGovernment."<sup>244</sup>
  - Leicestershire Council's Youth Portal: brings together all relevant information for young people, in line with the Leicestershire LSP strategic objective
- Example projects for vulnerable groups include:
  - Leicestershire Council's CareOnLine:<sup>245</sup> to bring together all information for vulnerable adults and their carers
  - Care Matters ([www.carematterspartnership.co.uk](http://www.carematterspartnership.co.uk)): a programme to support looked after children with their education

#### 7.6.4 Current issues with hard-to-reach groups

##### BME communities:

- BME communities lack confidence when it comes to searching for content online<sup>246</sup> and are even more worried when it comes to receiving government related information via the web.<sup>247</sup>
- Even for young BME respondents with English as a first language, explaining processes and issues in plain English, avoiding jargon and terms or pictures that appear too complicated is critical. For BMEs for whom English was a second language, this is self-evident. Any unfamiliar or technical terms unnerve respondents, can be confusing and may make them feel that the subject matter is beyond them and therefore 'give up'<sup>248</sup>
- Certain BME communities are keener on translation into their own language – in particular Bengali and Pakistani groups<sup>249</sup>
- Minority ethnic groups use the internet more frequently (14.5 hours per week compared to 9.9 for the UK overall)<sup>250</sup>
- 3G mobile phones are more prevalent among minority ethnic groups, with consequent higher levels of spend, and awareness of content control systems<sup>251</sup>

##### Young people:

- Young people actively *prefer* the internet to other information and advice sources, from print (less surprising) to face to face and telephony (perhaps more surprising) especially for sensitive issues where anonymity is preferred<sup>252</sup>
- 16-25 year olds are much more comfortable with media choice; the more the better. They have grown up with it and are more adept at filtering than older people. Whether it is an Electronic Programme Guide or Google, they know how to navigate and to find what they're looking for quickly and easily.<sup>253</sup>
- 94% of 16-25 year olds have a mobile phone and half of all text messages are sent by 16-25 year olds (the UK sends 11 million text messages an hour, 265 million a day and 96.8 billion a year in 2009)<sup>254</sup>
- 50% of 8-17 year olds have a profile on a social networking site<sup>255</sup>

##### Elderly people:

- The over 65s are in general less savvy about new media platforms than the population overall. They generally use the internet for information and email purposes only and are less likely to use the internet for entertainment.<sup>256</sup>
- Older people remain much lower users of mobile phones than the general population<sup>257</sup>

##### Socially excluded people:

- 13% of the general UK population (6 million people) are both socially and digitally excluded<sup>258</sup>

- Particularly for the 10% most economically deprived, research by the government shows that there is a high correlation with social housing and lack of internet access<sup>259</sup>
- There are smaller groups for whom the sources of digital exclusion are multiple and serious (e.g. offenders, people with mental health issues, unemployed people, early school leavers and those with literacy and numeracy skills needs)<sup>260</sup>
- They are expensive to reach. Typically, because socially excluded people do not have as much access to personal computers or mobile devices, kiosks are used as a 'catch all' to reach them. Many local authorities supplement access to the internet at public internet access points and libraries by providing internet kiosks in council offices, community and leisure centres, shopping centres and on main roads; usually adjacent to bus stops. However, the kiosks themselves are very expensive to procure (more than £5,000 plus an annual rental and maintenance fee for a kiosk at an indoor location and over £18,000 for an external location) and developing bespoke applications for kiosks is probably half as much again if not more.<sup>261</sup>

### Some potential digital improvements to digital provision:

Below we provide some initial thoughts about ways that front-line services targeting hard to reach groups could be improved through the further use of digital technologies:

#### 1. Language support for BMEs

The major hub for citizen-focused government services, Directgov, does not contain any language assistance (other than Welsh, which is a legal requirement). As is demonstrated by the evidence above, many BME communities would feel more comfortable searching a site (or at least key priority pages) that is in their first language.

When BME communities currently want to access face-to-face services, particularly from local authorities, they are generally able to book a translator to meet with them so that they can understand the face-to-face session with a local authority representative that they require. So if Mrs. Prasad felt that, as someone with English as a second language, that she needed some assistance with a particularly complex enquiry, she might wish to book a Hindi translator to turn up in person for the appointment to help explain things to the council representative and vice versa. Currently, a big problem with this approach is that either the translator or the person requiring the session fail to turn up, massively adding to the costs of these types of service (and therefore negatively impacting their perceived return on investment).<sup>262</sup> In the current milieu, there are fantastic opportunities to provide translation services online from wherever a translator is available to hugely reduce costs. These translation services would be booked online at the point of booking the required face-to-face session and a secure two-way video link to translator and the other required parties. There would be no need for individual local authorities or other public services to have their own team of translators.

- *Cost savings*: a single translator could translate for many more people if travel time was removed, significantly cutting costs.
- *Time savings*: it's a much quicker solution, potentially facilitating Mrs. Prasad's needs immediately if a translator is readily available at that time and therefore meaning that she does not have to come back a second time (again reducing servicing costs for the local authority).

#### 2. Plain English 'Crystal' marks

Indian, Pakistani, Black Caribbean and Black African people are less confident at finding information online (69–83 per cent, compared to 91 per cent of the UK population as a whole). These ethnic groups are also less likely than the UK population as a whole to shop or bank online (19–29 per cent, compared to 41 per cent).<sup>263</sup> It seems likely that when dealing with the complex, sometimes technical, procedural issues that interactions with public services typically bring up, this is even more likely to be a concern. For this reason, it is imperative that public services online avoid jargon and terms or pictures that appear too complicated. Any unfamiliar or technical terms unnerve respondents, can be confusing and may make them feel that the subject matter is beyond them and therefore 'give up'. Content needs to be clear and simple with explanations of difficult to understand terms (perhaps with glossary rollovers on technical terms or acronyms). Services should ensure that they have been checked for 'plain English' and have a suitable reading age. Where possible, services should strive for plain English 'Crystal' marks (see [www.plainenglish.co.uk/](http://www.plainenglish.co.uk/)). If these sorts of approaches are undertaken, then BME communities are much more likely to be able to self-serve via the web (at, or near to, the levels of the indigenous

population), which, in turn, will massively reduce the need for face-to-face translation services and the costs associated with these.

### 3. 'Natural reader' type services

A lot of socially excluded people have literacy issues. eGovMonitor reports that:

*"Readability – how easy a website is to understand – is a concern because of low literacy levels among socially excluded groups. According to a 2003 survey by [the] DfES, 24 per cent of people aged 16 to 65 and receiving means-tested benefits lacked basic literacy skills, and the same was true for 37 per cent of people with poor or very poor health."<sup>264</sup>*

In addition, many elderly people like Mr. Clark have trouble reading.<sup>265</sup> As a result, providing written public-sector information is not always something that these groups of people can easily consume. Consequently, they may not get the help they need and this, in turn, may lead to problems for society as a whole. After all, what price depression in old age? Or continued drug addiction for a homeless person? Or debt problems for a vulnerable young mum?

Software like NaturalReader and BrowseAloud are solutions that can be plugged into a website to perform 'Text to Speech' to read aloud written content. In addition to web-pages they also work with MS Word documents, PDF files, emails and so on which is obviously beneficial as a lot of public-sector information resides in these formats. Written files can then be converted into commonly used audio files like MP3 or WAV for playing on a CD player or iPod. The software is free to the end user, but website owners would pay a yearly charge to BrowseAloud to enable their site. The challenge would be for socially excluded people or elderly people to use these types of services, but they could be demonstrated in out-reach centres or libraries (as just two examples) to encourage use, even if that meant them being hand-held through their initial (or, potentially, even their later) usage.

In addition, to further save societal costs, government should work with Google to utilise software like Google's Translate (<http://translate.google.com/#fr|en>) which translates one written piece of text into another language (either as another written piece of text or as a 'Text to Speech' file) to enable documentation and web-pages to be translated into a variety of other languages. This type of solution could be licensed to reduce the need for translation costs and the basic engine could even be used for English only 'Text to Speech' as required. Clearly, there are some state aid issues around favouring one particular auto-translation provider over another (i.e. it might be perceived as anti-competitive.<sup>266</sup>), but this could be overcome in a number of ways (e.g. procuring from an array of digital publication companies, or amending the state aid requirement in areas like helping the social excluded and vulnerable groups and black and minority ethnic communities where there might be a clear societal benefit in these poor economic times).

## 7.7 Infrastructure

### 7.7.1 The current model

Most government departments and other public-sector organisations continue to host infrastructure in the traditional manner, which revolves around holding files, applications, and online resources on external servers and other devices provided by hosting providers (e.g. Rackspace, BT, NetBenefit, Adapt, EasyNet et al) on an individual basis. A large number of these solutions will require a more expensive 'dedicated' hosting solution (i.e. where the hosted service has its own dedicated server) for data security reasons, rather than a 'shared' solution (i.e. where the hosted service shares a server with other organisations).

### 7.7.2 Plans for front-line services

- There appears to be no announcement in either the emergency budget in June or the Comprehensive Spending Review in October of a move towards explicitly reducing public-sector hosting costs (though, clearly, in cutting a number of government services and QUANGOs, there will be a reduced public-sector hosting bill overall).

### 7.7.3 Current example digital initiatives

These include:

- *G-Cloud*: this is a suggested approach from government to have a trusted public-sector brand for cloud computing. It will facilitate shared services including: business services; utility applications; common public sector applications; a development platform for custom applications; infrastructure and service management. The aim of the G-Cloud is to enable cost savings through consolidating buying power, reducing design, procurement and assurance overheads; improved operational efficiency through standardisation and automation; flexibility to scale up and down; sharing infrastructure across departments, enabling high load levels, avoiding purchasing equipment for temporary requirements.
- *G-Digital*: this will establish a series of web services that can be accessed across the public sector across a wide range of government's expected digital needs. The services fall into three broad categories: i) business services (e.g. content management, search, mapping, forms, collaboration, web-based tools etc.); ii) people services (e.g. design, analysis, testing, deployment, support etc.); iii) infrastructure services (e.g. accredited hosting arrangements etc.)
- *Government Gateway*: the Government Gateway provides centralised IT services for use by the whole of the public sector. These include authentication, authorisation and a transaction engine for secure and reliable data exchange between citizens, the government and many of its agencies.
- *Government Connect*: This is an initiative led by local authorities, the DCLG and the Cabinet Office providing a common infrastructure for secure electronic interaction between local government, central government and citizens.
- *Single Sign-On (SSO), identity verification and authentication*: Government Connect funds the Single Sign On Portal (SSOP) which has been added to the Gateway portfolio. It will allow citizens, businesses and organisations to create an authenticated, secure session with public-sector online services.

### 7.7.4 Current issues

- Dedicated solutions are inherently more expensive and typically, each web project being undertaken by government will require a hosting solution to be in place. Government and the wider public sector spends a £16 billion on infrastructure services each year.<sup>267</sup>

#### Some potential digital improvements to current provision:

Here are our thoughts about how front-line services will be improved as a result of the proposed digital infrastructural changes:

#### 1. Moving to G-Digital and the G-Cloud

We had independently arrived at the same conclusion as to the need for a pan-government/public-sector

cloud-based hosting solution and, as a result, whole-heartedly support the G-Cloud initiative.

A cloud-based model provides the same level of hosting service, but instead of an individual project's data being held on only one server, the information is spread throughout the entire network of servers. Most government sites are currently not cloud-based, including the 'super-sites' (i.e. [businesslink.gov.uk](http://businesslink.gov.uk), [communities.gov.uk](http://communities.gov.uk), and [nhs.uk](http://nhs.uk)).<sup>268</sup> A cloud-based infrastructure would work by public service companies essentially renting space on a network of servers rather than an individual server.

Additionally, the open-source preference inherent in G-Digital is also to be commended, saving approximately £3.2 billion a year on licensed software alternatives.<sup>269</sup> Mr. Clark is worried that government is frittering money away. He has to work on a tight budget, so why shouldn't government? He and his friends all approve whole-heartedly of these sorts of 'no brainer' savings. They just wish that the government had started on this path sooner!

## 2. Public-sector eCommerce functionality

Many public service providers have products and services that they would like to sell to members of the public and other organisations. For example:

- Licenses of different types (e.g. DVLA driving licences or business licences to trade)
- Passport application payments
- Local council products (e.g. Guildford council sell recycling and cleansing products and Richmond Council rent out allotment space)

There are a myriad of such products and services that need to be transacted across the public-sector. At the moment virtually all of these purchase separate licences and utilise different products for the eCommerce type functionality that they provide. This is very wasteful, not only in terms of bang for buck and use of the best solutions, but also in terms of economy of scale and purchasing power.

Instead, common payment engines and common eCommerce type functionality (e.g. 'product'/service display; cross/up-sell; payment funnels; shopping baskets; payment mechanisms; delivery mechanics; returns options etc.) could be provided centrally with government agencies, service providers, councils et al being charged a licence fee to use them. Government could team up with a large provider like PayPal or WorldPay (or a variety of such payment mechanisms to avoid State Aid issues) to provide these. Not only would this provide a cost-saving to the public purse as a whole through an economy of scale, but the robustness, professionalism and ease of integration of such a service would be likely to encourage those service providers that do not currently transact online to do so. Given that online transactions are typically considerably cheaper than offline ones,<sup>270</sup> this would provide further cost saving benefits to the public coffers, as well as being much more data rich. Not only that, but increasing swathes of the populous, particularly those who have grown up with the internet like Ms. Jones, would automatically expect to be able to transact online and would naturally gravitate to that channel as a first means of payment. These sorts of early payments also mean money saved.

## 7.8 Government data

### 7.8.1 The current approach to government data

The Coalition Government's approach is to place transparency at the heart of what they do. The Coalition's programme for Government document <sup>271</sup> states that:

*"The Government believes that we need to throw open the doors of public bodies, to enable the public to hold politicians and public bodies to account...setting government data free will bring significant economic benefits by enabling businesses and non-profit organisations to build innovative applications and websites."*

*"We will create a new 'right to data' so that government-held datasets can be requested and used by the public, and then published on a regular basis."*

*"We will ensure that all data published by public bodies is published in an open and standardised format, so that it can be used easily and with minimal cost by third parties."*

Within that policy document 'Government transparency' is placed at the same level of importance as defence, crime and policing, energy and climate change, Europe, jobs and welfare, the NHS, schools, taxation and transport. Clearly, it is an important area that chimes with both the mood of the times and the Coalition's political ideology.

### 7.8.2 Plans for cuts to front-line services

- There appears to be no announcement in either the emergency budget in June or the Comprehensive Spending Review in October of a move towards cutting budgets affecting public-sector data/transparency.

### 7.8.3 Current example digital initiatives

These include:

- *Data.gov*: this U.S. site focuses on the provision of data sets to the U.S. public (but is also available also to those outside the United States). It launched in May 2009. The purpose of Data.gov is to increase public access to high value, machine readable datasets generated by the Executive Branch of the Federal Government. The aim of the site is to become a repository for all the information the government collects. The site publishes publically any data that is not private, or restricted by national security concerns.<sup>272</sup>
- *Data.gov.uk*: this is a UK Government project to open up almost all non-personal data acquired for official purposes for free re-use. The beta version of data.gov.uk has been online since the 30 September 2009 and by January 2010 more than 2,400 developers had registered to test the site, provide feedback and start experimenting with the data. When the project was officially launched in January 2010 it contained 2,500 data sets and developers had already built a site that showed the location of schools according to the rating assigned to them by education watchdog Ofsted.<sup>273</sup>
- *COINS database*: The Combined Online Information System (COINS) is a database of UK Government expenditure provided by government departments. The data is used to produce reports for Parliament and the public including: expenditure data in the Budget and Pre-Budget reports; Supply Estimates; Public Expenditure Statistical Analyses (PESA); and the monthly Public Sector Finance Releases. It is also used by the ONS for statistical purposes.
- *World Bank's Open Data initiative*: this is intended to provide all users with access to World Bank data. The data catalogue is a listing of available World Bank data sources, which is updated as additional data resources are added. These resources include databases, pre-formatted tables and reports. Each of the listings includes a description of the data source and a direct link to that source. Where possible, the databases are linked directly to a selection screen to allow users to select the countries, indicators, and years they would like to search. Those search results can be exported in different formats. Users can also choose to download the entire database directly from the catalogue.

## 7.8.4 Current issues

- *Freedom of Information Act (2000)*: introduces a public 'right to know' in relation to public bodies. The Office of the Information Commissioner oversees the operation of the Act. Around 120,000 requests are made each year with private citizens making 60% of them, with businesses and journalists accounting for 20% and 10% respectively. The Act cost £35.5 million in 2005 and supporters of the amendment bill contend it saves around £12m a year.<sup>274</sup>

### Some potential digital improvements to current provision:

Below we provide some initial thoughts about ways that front-line education services could be improved through the further use of digital technologies:

#### 1. Data tools and presentation

Overall, Government is getting better at transparency, but is, in general, still plagued by a lack of transparency and public information, to wit: the 2009 M.P.'s expenses scandal. In addition, (notwithstanding security concerns) defence information, environmental information, and some economic data are unavailable for the public to view.<sup>275</sup> Part of the issue with transparency is not only in the provision of data, but also in providing it in a manner which lends itself to being understood. For this reason, the current U.S. government has insisted that government data should be "transparent, participatory, and collaborative."<sup>276</sup> This is being achieved, in part, by creating blogs and audio-visual material, as well as developing applications for Data.gov.<sup>277</sup> If Ms. Jones works in a digital agency (Lord preserve her!) then she and her agency might be able to create innovative services by the development of new applications based on government and public-sector data. This could be encouraged by the development of a small development fund that organisations could bid for to undertake path-finding pilot projects utilising government and public-sector data.

Memetics is Richard Dawkins' term for a Darwinian approach to cultural information transfer. A meme, analogous to a gene, is a 'unit of information' (e.g. an idea, belief, pattern of behaviour etc.) which is 'hosted' in one or more individual minds and can be transferred between people. As these are copied between people the copies are not perfect and contain variation and only some variants can survive. This combination of copies, variation and competition for survival forms precisely the condition for Darwinian evolution, and so memes (and hence human cultures) evolve.

In the same way, new 'wholes' (i.e. approaches and ideas) can evolve from various bits of Government data and public-sector 'units of information'. From this comes serendipity and the emergence of new applications for government data, which if it had been left in a silo without being publically available would have never been created. A good example of this is MySociety's 'Mapmumental' application which took two bits of publically available information:

- i) Commuting times from London
- ii) Average house prices

It then overlaid these publicly available datasets and combined them with a user-generated 'beautiful place' index to create a new whole – a map of all the affordable places to live that were also nice places to live within an acceptable commute of London (allowing the user to input their own tolerances for each of these three variables).



**Figure 3: MySociety's Mapumental**

With so much government data to work with, Government needs to provide a helping hand to the developers like Ms. Jones who will create the wide variety of applications, mash-ups, and visualizations utilising the data. They can do that by combining the raw data with:

- A framework for overlaying datasets
- Presenting the data in the most appropriate form (e.g. if the dataset contains geographic information then the data should be displayed on a map as one of the options).
- An environment that facilitates the combination of data 'memes' to allow for the creative development of new applications for that data
- A User Generated Content (UGC) framework which allows users to add content, whilst maintaining a strict taxonomy to ensure that all content is classified, indexed and tagged correctly. This is important to ensure the necessary interconnectivity between all content. UGC would probably also require:
  - A peer-review mechanism with limited mediation. A peer-to-peer mediation mechanism like thumbs up/down for content is a good way to measure and manage content in a data hub.
  - A mechanism for obsolescence and archiving
- Incoming, approved third-party data feeds (i.e. RSS and news feeds etc.)
- System generated content
- A 'serendipity engine' designing the system to pick up and retain knowledge about user usage patterns. For example, building-in learning by providing functionality like 'people who viewed this page/document also viewed the following pages'. As these connections build throughout the system a search (for example) will return much more robust and relevant results. The system will then learn and grow by making its own connections from the users' behaviour as well as when new users add content.

In certain instances, a 'freemium' model might exist, with 'taster' data might be available for free and full datasets chargeable. Alternatively, all data might be free for non-commercial usage, but licence fees would come into effect for any commercial and/or corporate usage of the government data.

1 A much larger proportion of the GDP than in subsequent years, see <http://www.statistics.gov.uk/cci/nugget.asp?id=277>

2 <http://www.debtbombshell.com/>

3 [www.telegraph.co.uk/finance/economics/7957110/Government-urged-to-reveal-true-national-debt-of-4.8trillion.html](http://www.telegraph.co.uk/finance/economics/7957110/Government-urged-to-reveal-true-national-debt-of-4.8trillion.html)

4 [www.telegraph.co.uk/finance/economics/7957110/Government-urged-to-reveal-true-national-debt-of-4.8trillion.html](http://www.telegraph.co.uk/finance/economics/7957110/Government-urged-to-reveal-true-national-debt-of-4.8trillion.html)

5 [www.timesonline.co.uk/tol/news/politics/article6863791.ece](http://www.timesonline.co.uk/tol/news/politics/article6863791.ece)

6 [www.guardian.co.uk/politics/2010/feb/07/tories-plan-spending-cuts-2011](http://www.guardian.co.uk/politics/2010/feb/07/tories-plan-spending-cuts-2011)

7 [www.bbc.co.uk/news/10374475](http://www.bbc.co.uk/news/10374475)

8 <http://edition.cnn.com/2010/BUSINESS/06/22/uk.budget/index.html?hpt=T2&fbid=8xnCUvRDnIW>

9 <http://news.bbc.co.uk/1/hi/politics/10374475.stm>

10 <http://news.bbc.co.uk/1/hi/politics/10374475.stm>

11 <http://www.guardian.co.uk/uk/2010/mar/24/budget-2010-whitehall-public-sector-cuts>

12 <http://news.bbc.co.uk/1/hi/politics/10374475.stm>

13 <http://news.bbc.co.uk/1/hi/politics/10374475.stm>

14 <http://news.bbc.co.uk/1/hi/politics/10374475.stm>

15 [http://news.bbc.co.uk/newsbeat/hi/the\\_p\\_word/newsid\\_10370000/newsid\\_10377200/10377255.stm](http://news.bbc.co.uk/newsbeat/hi/the_p_word/newsid_10370000/newsid_10377200/10377255.stm)

16 <http://www.guardian.co.uk/education/2010/jul/05/school-building-programme-budget-cuts>

17 <http://news.bbc.co.uk/1/hi/politics/10374475.stm>

18 <http://news.bbc.co.uk/1/hi/politics/10374475.stm>

19 [www.bbc.co.uk/news/uk-politics-11569160](http://www.bbc.co.uk/news/uk-politics-11569160)

20 [www.bbc.co.uk/news/uk-politics-11569160](http://www.bbc.co.uk/news/uk-politics-11569160)

21 A Quasi-Autonomous Non-Governmental Organisation

22 [www.bbc.co.uk/news/uk-politics-11545120](http://www.bbc.co.uk/news/uk-politics-11545120)

23 [http://en.wikipedia.org/wiki/Comprehensive\\_Spending\\_Review](http://en.wikipedia.org/wiki/Comprehensive_Spending_Review)

24 [www.nhs.uk/NHSEngland/thenhs/about/Pages/overview.aspx](http://www.nhs.uk/NHSEngland/thenhs/about/Pages/overview.aspx)

25 [www.ukpublicspending.co.uk/download\\_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302](http://www.ukpublicspending.co.uk/download_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302)

26 [http://ww2.prospects.ac.uk/cms/ShowPage/Home\\_page/Explore\\_job\\_sectors/Education/overview/p!emkld](http://ww2.prospects.ac.uk/cms/ShowPage/Home_page/Explore_job_sectors/Education/overview/p!emkld)

27 [www.ukpublicspending.co.uk/download\\_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302](http://www.ukpublicspending.co.uk/download_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302)

28 A Non-Departmental Public Body

29 A Quasi-Autonomous Non-Governmental Organisation

30 [www.guardian.co.uk/news/datablog/2010/jun/18/civil-service-statistics-headcount](http://www.guardian.co.uk/news/datablog/2010/jun/18/civil-service-statistics-headcount)

31 [www.guardian.co.uk/news/datablog/2010/jun/18/civil-service-statistics-headcount](http://www.guardian.co.uk/news/datablog/2010/jun/18/civil-service-statistics-headcount)

32 [www.lgcareers.com/what-is-local-government/facts-and-figures/local-government-employees/](http://www.lgcareers.com/what-is-local-government/facts-and-figures/local-government-employees/)

33 [www.expressandstar.com/news/2010/07/07/thousands-of-nhs-jobs-cut-as-axe-falls](http://www.expressandstar.com/news/2010/07/07/thousands-of-nhs-jobs-cut-as-axe-falls)

34 This figure is derived by adding all the staff figures for the various Ambulance Services across the UK from all of the publicly available information on Wikipedia. About 40% of the Ambulance Services provide no staff figures as part of these entries, but these are typically the smaller services. We estimate that the actual figure is between 25,000 to 30,000.

35 <http://rds.homeoffice.gov.uk/rds/pdfs09/hosb1309.pdf>

36 <http://uk.answers.yahoo.com/question/index?qid=20090501080848AAUOaHh>

37 [www.ukpublicspending.co.uk/download\\_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302](http://www.ukpublicspending.co.uk/download_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302)

38 <http://uk.reuters.com/article/idUKTRE60C25T20100113>

39 [www.ukpublicspending.co.uk/download\\_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302](http://www.ukpublicspending.co.uk/download_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302)

40 As a proxy for the actual figure here we have taken the combined membership of the National Union of Rail, Maritime and Transport Workers Union and the Associated Society of Locomotive Engineers and Firemen. We estimate that the actual figure is between 150,000 to 200,000.

41 [www.ukpublicspending.co.uk/download\\_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302](http://www.ukpublicspending.co.uk/download_ukgs.php?span=ukgs302&year=2010&state=UK&view=1&expand=00&units=b&fy=2010#ukgs302)

42 [www.dwp.gov.uk/about-dwp/working-for-dwp/our-jobs/](http://www.dwp.gov.uk/about-dwp/working-for-dwp/our-jobs/)

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