# The development of UK government policy on citizens' access to public sector information

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**Abstract.** This paper describes research to investigate the development of United Kingdom government policy on citizens' access to public sector information from 1996 to 2010, the first such significant project from an information science perspective. In addition to mapping UK policy documents, the main research method was the undertaking of semi-structured interviews with key stakeholders from both inside and outside government. Main findings are: uneven progress in the development of citizen-centric services; the continuing need for intermediaries; and a lack of information literacy policy. The paper also charts the increase in the opening up of government data for re-use during 2009 and 2010. It is considered significant that this increase in transparency, by both main political parties, should come at a time when trust in government was low, citizens' expectations of electronic access to information were rising and the technology was enabling new channels for engagement. The influence of individuals was found to be considerable, for example by Sir Tim Berners-Lee, Professor Nigel Shadbolt and Tom Steinberg. Principles for citizens' right of access to information are presented.

Keywords: Access to information, open government, public sector information, government information, information policy, information literacy, citizen-centric services

## 1. Introduction

The provision of full, accurate information in plain language about public services, what they cost, who is in charge and what standards they offer is a fundamental principle . . . public services appeared for too long to be shrouded in unnecessary secrecy. The Government is now giving the public – often for the first time – the information they need [1].

Reading this now in 2011, one might be forgiven for thinking that it is a recent policy document, but in fact it comes from *Open government*, an initiative of the 1993 UK Conservative government. It resonates because of the growing importance that the UK government places on generating public sector information (PSI) for its own use and proactively providing information to citizens to help them make decisions about their lives. Since 2007 there has been a step change in the nature and quantity of data that the government has published and in 2010 the new Coalition government continued the push to make government data more accessible [2].

This paper presents findings from research which sought to gain an understanding of how information policy on the provision of PSI to citizens developed in the UK from 1996 to 2010. It was the first

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significant project to address the burgeoning issues from an information science perspective. The background section below discusses the academic literature and the most influential policy documents that set the context for the research, and from which the research questions were developed. Following a brief description of the methodology, the main findings are presented with discussion of the issues arising. The paper concludes with principles for citizens' right of access to PSI and suggestions for further research themes which could usefully be addressed when sufficient progress has been made in this area of government policy.

## 2. Background

### 2.1. Academic literature

A review of the literature addressing how government policy has been developed to provide citizens with access to PSI identified a wealth of writing that was tangential, for example the work of Hacker and Van Dijk [3], Homburg [4] and Castells [5], but little specific research was evident. The literatures of information policy and eGovernment were the most relevant to focus on, as issues around access to information fall at the overlap between the two spheres. From the literature of eGovernment, many texts were identified which provided a useful background to the subject and informed the direction of interview questions, for example the work of Bellamy and Taylor [6], Heeks [7], Mayer-Schönberger and Lazer [8], Fountain [9], Chadwick [10] and Aichholzer [11]. On the information policy side, Hernon, McClure and Relyea [12], and Braman [13] in the US, and Rowlands [14] in the UK, have had the most impact on this research.

#### 2.1.1. Access to information
The main focus here is on 'access to information', in the context of how government provides information pro-actively to citizens, as opposed to 'freedom of information' (FoI), where the citizen chooses which documents to request.

There are few items in the academic literature looking at the specific issue of central government policy on access in its broadest sense, rather than accessibility/usability, ie use of the technology. The most comprehensive is Aichholzer and Burkert's *Public Sector Information in the Digital Age* [15] which is prescient in that the issues it raises, such as the economic benefits of open government and the use of the private sector for adding value to PSI for the citizen, have come to the fore since its publication in 2004. The chapter by Bargmann, Pfeifer and Piwinger [16] is a rare example of work specifically addressing the issues from the citizen's point of view and they argue that making non-personal information public should be the default position, not the exception.

Various academics focus on the economic benefits of the commercial re-use of information [17], however, as in the search on eGovernment in general, the work of the international bodies proves more fruitful in addressing wider philosophical concerns about information rights [18].

#### 2.1.2. Information literacy
Providing universal access to PSI is wasted if citizens do not have the skills to find, manage and critically evaluate the information effectively – 'information literacy' [19]. The Chartered Institute of Library and Information Professionals (CILIP) provides a useful definition and overview of the skills required:

Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner. ... We believe that the skills (or competencies) that are required to be information literate require an understanding of:

– A need for information
– The resources available
– How to find information
– The need to evaluate results
– How to work with or exploit results
– Ethics and responsibility of use
– How to communicate or share your findings
– How to manage your findings [20].

Unesco has shown strong commitment to developing information literacy amongst its member states through its Information for All Programme [21] and in 2008 it published *Understanding information literacy: a primer* by Forest "Woody" Horton Jr [22] aimed at government ministry officials at all levels, amongst others, and *Towards information literacy indicators* [23].

'Information literacy' is of course a term used within the information profession and not one necessarily recognised elsewhere, but too often reference in academic writing, is made to the need for ICT or Internet skills without an understanding of the value of *information* skills [24]. As computers become simpler to use, the level of ICT skills needed may actually be less but the reverse may be true of information skills. Chadwick [25] argues that information skills are more important in the online environment than elsewhere because of the high volume of unmediated data, a point reinforced by Feather [26], who stresses the need for skills in evaluating information that has not been subject to quality control. The data also needs to be in a form that is comprehensible to the user. As Heeks eloquently puts it: "Data remains data unless citizens have the skills to turn it into information" [27].

Feather [28] raises the paradox of technology enabling greater access to information but bringing the risk of less potential access for those who are disempowered because they do not have the finance or the skills. He sees more need for: "people with special skills who can help information-seekers" [29] and argues that librarians need to be flexible in their attitude to undertaking the role of intermediary and information literacy trainer. Bargmann, Pfeifer and Piwinger [30] also highlight the potential role of librarians in assisting access and training in information skills, calling for improvement in their education, adequate funding for public libraries and involvement of government libraries in the provision of PSI.

## 2.2. UK government policies

The research looked at the development of policy documents from 1996 to 2010 relating to how government provided information to citizens. During that time the use of the Internet within government developed considerably, and had particular importance for how it disseminated PSI. This brought with it issues of addressing the needs of those who could not or would not use online services, ie information 'have nots' and 'cannots', and how to reap financial benefit for UK plc and the information industry.

*Government.direct* [31], published in 1996 by the then Conservative government, was the first major UK policy document on electronic services. The following year both main political parties went into the general election with similar policies on developing open government, improving access to PSI. Indeed, much of what was proposed to transform Britain into an 'information society' in the Conservative Party manifesto [32] was implemented in some form by the incoming Labour government [33] Labour's

vision of electronic citizen-centric services was put forward in the 1999 white paper *Modernising government* [34].

In the 13 years since, there have been many government initiatives aimed at making the information society and open government a reality. Key features have been to develop citizen-centric (as opposed to department-centric) services, to improve efficiency and to cut costs. Much of the focus has been to develop portals for citizens (Directgov) and businesses (BusinessLink) through which services are channelled. An issue here is whether citizens have the skills to be able to access and use the services and how help should be provided for those who do not have them. Government initiatives have concentrated on IT skills rather than information literacy skills.

There have been pressures to encourage government to produce more data that can be re-used by third parties to produce new information services. The EU *Directive on the re-use of public sector information* [35] ensured that the UK government developed mechanisms for regulating re-use of data, setting up the Office of Public Sector Information. Further policy on the making of data available for re-use was stimulated by the government-commissioned *Power of information review* [36] and the follow-up *Power of Information Taskforce report* [37] which particularly addressed how government could promote innovative use of government data.

## 3. Methodology

As a baseline, the main relevant UK policy documents from 1996–2009 were identified and analysed to map the development of the policies over time. At the core of the research were semi-structured interviews with 25 of the most influential individuals to gain insight into their personal perspectives on how the mechanisms for providing citizens with access to PSI are working. The interviewees operated at the highest level, five each from five categories: top civil servants working directly with the policies; regulators and advisers; external commentators and lobbyists; senior academics; and top members of the information profession.

Interviewees were chosen because of their, mostly, unique position in the policy-making/implementation process and, where possible, they were those with the highest responsibility. They included, for example: the UK Chief Information Officer; the Chief Executive of Directgov; the Head of Digital Policy; the Head of Information Policy at OPSI, an author of the *Power of Information review* as well as the Chairman of the Power of Information Taskforce; the (then) President of the UK's main professional body for library and information professionals (CILIP) who was also a former head of information for a government department; the Chief Executive of The British Library and a former Head of Profession for knowledge and information management within the UK government.

## 4. Main findings

The interviews took place during 2009 and at the time the general view of the interviewees was that PSI policy was not very important to government, although those within government generally felt that its importance was growing and that more effort was being made to meet user needs. However various interviewees suggested that PSI policy *ought* to be important since a core role of government was to provide information that would help citizens to make decisions, including about who to vote for. Had the interviews been undertaken in 2010 there may have been a different view expressed: some commented that PSI policy was not an election issue but in fact opening up government data became a theme in

the manifestos of both main political parties in the 2010 general election. Interviewees suggested that drivers for this opening up of data were: the Freedom of Information Act and transparency agenda; the potential use of new electronic ways of providing services; and the growing expectation of citizens that government would communicate using social networking.

This section looks at how the various aspects of the existing policies are working, how they could be improved and what gaps need to be filled. The following themes are addressed: citizen-centric services; use of intermediaries; citizen engagement; more content; citizens' information literacy skills; opening up public data; and drivers for change.

## 4.1. Citizen-centric services

Making its services citizen-centric has been one of the main goals of the eGovernment agenda, although key stakeholders outside government felt that government had made less progress in achieving this than those inside government believed. The external view was that insufficient attention had been paid to the needs of users when designing electronic services, however those within government were not complacent and recognised that more needed to be done.

One of the manifestations of the government's efforts to make services citizen-centric had been the setting up of portals for access to government services: Directgov aimed at citizens and BusinessLink for the corporate sector. Directgov did involve citizens in its design [38] but a 2010 review of the portal by Martha Lane Fox [39] was critical of its design and search capabilities, as were various interviewees. The government had also been committed to closing down hundreds of its websites [40] and channelling access to information still further through Directgov and BusinessLink, but interviewees suggested that there had been some loss of data as a result of the consolidation.

The whole process of identifying people's needs and providing the appropriate information and advice is complicated. People's problems are various and can be extremely complex and one size does not fit all. Directgov and other services are not designed to cope with this complexity. Those who have the most complex problems may more usually be those who most need assistance with finding information and advice to solve them [41].

## 4.2. Intermediaries

To be truly citizen-centric, services need to be provided to citizens where they are, in a manner that suits them and regardless of the source of that information [42]. Citizens cannot be expected to know that the information they need comes from a particular, or more likely a number of, government department(s), from central or local government, or even from government at all. The physical, as well as the virtual, one-stop shop is still needed, especially for those with complex problems [43] or those who cannot use digital services for whatever reason. This was seen in some responses to the government's plans to make some services online only, following on from the review of Directgov [44].

Opinion amongst interviewees was divided on the extent to which government should move to electronic delivery of information; those within the information profession were concerned that people without the skills and access would be disenfranchised whilst some within government felt that the move to electronic versions over print would actually increase the number of people who could access services.

The question would seem to be not whether government should maintain print and electronic services but rather that there should be intermediaries who would provide the access for those who were unable to use the electronic services, for example because of physical or mental difficulties, poverty or poor basic literacy. Many within government felt that the public library service was fulfilling that role.

Others pointed out, however, that the library service was being cut back, opening hours were being reduced and many places only had mobile public library access for a very limited time – and that was assuming that the citizens would use a public library in the first place. By the same token, information professionals interviewed felt that the public library service had the potential to do more in its capacity as an intermediary.

Providing the physical as well as the electronic service is of course extremely expensive. It is not unreasonable at times of financial restraint for the government to want to move as many people onto using electronic service delivery as soon as possible in order to minimise costs, but in the short term expenditure ideally needs to rise for extra support for the information 'have nots' and 'cannots' [45]. This seems unlikely in the current economic and political climate. A concern is that the Big Society initiative will lead to some public libraries being staffed by volunteers [46] with insufficient training to help people with their information needs or to help them learn how to find the answers for themselves – despite the commitment of the public library sector in the Race Online 2012 initiative [47]. However citizens are increasingly seeking information for themselves, particularly through less traditional channels such as social networks.

### 4.3. Citizen engagement

Various interviewees raised the issue of citizen engagement, a more interactive approach to providing information. This research addressed particularly the one-way government-to-citizen (G2C) communication of information; there is, however, a growing recognition within government that the information should go to the people rather than the people be expected to come to the information. This means that government needs to share its information with, for example, relevant social networking sites and develop a dialogue with the public. Government has started to make use of social networking [48] but it is still very early days and research will be needed to evaluate how effective it is at providing information to third parties rather than using the social media as a channel for communicating about policies and activities.

### 4.4. More content

So far it is the 'how' that has been addressed, but the 'what' is also important. It should be remembered that the PSI that is being made open consists of datasets collected by government as part of its business of operation, some of which may already form the basis of current published products. It is not *ad hoc* information, such as advice and research reports. Where information is not automatically published, it falls to those outside government to invoke the 2000 Freedom of Information Act [49]. There was no clear view amongst interviewees about who decides what of this *ad hoc* content can be made available and no evidence of any set process for these decisions.

Progress may be evolutionary rather than revolutionary. There has been the revolution of the change from a presumed closed to a presumed open culture but now work needs to be done on improving the quality of the information – something of which the evidence suggests the government is now aware [50]. One should not underestimate the amount of work involved in organising the huge range of data so that it is findable and comprehensible. Just making everything open will not necessarily help users if the data is of poor quality and reliability and the presentation is unhelpful. Users also need the skills to manage and evaluate the information.

### 4.5. Citizens' information literacy skills

Government is putting considerable effort into improving the design of its information systems [51], but good design is not sufficient in itself [52], although some of the more IT proficient interviewees suggested that it was. Even if it were true that government services were all so intuitive and easy to use that you did not need any training, that does not help citizens successfully navigate other websites nor frame their interrogation in the way that will be most likely to retrieve what they really need. In a society increasingly dependent on electronic media, information literacy should be a core skill [53]; good design should go hand-in-hand with targeting information to meet user needs and developing the skills to find and use the information [54]. Also if you have few or no basic literacy skills, it doesn't matter how well designed an information system is; there is only so much that can be done purely graphically.

Some information professionals interviewed suggested that government as a whole did not understand, or have, information literacy skills itself. An important finding was that no one had overall responsibility for this policy area as relevant policy was split between the Department for Education and the Department for Business, Innovation and Skills (BIS). Training of users was needed at all levels – at school and further education, in the workplace and in the community [55]. Interviewees suggested that training in critical thinking and evaluation of information was improving within the education system, but much more needed to be done elsewhere.

The Race Online 2012 initiative [56] headed by Digital Champion Martha Lane Fox needs to address information literacy, not just digital literacy. The Digital Champion reports into the Efficiency and Reform team within the Cabinet Office; getting more citizens to use online services is part of the efficiency drive as it is much cheaper to provide online than face-to-face or telephone access [57]. It is in government's interests to build confidence and skills to encourage use of its own services but UK plc also needs these skills more generally to enable citizens and employees to participate fully in the information society [58]. Organisations, including public libraries, have pledged to get millions of new people 'online' as part of the initiative [59] but this must entail more than just providing access if we want citizens to maximise their potential use of electronic services [60]. Even WWW pioneer and government adviser Berners-Lee agreed that much more needed to be done to educate users in handling information [61].

Those within government saw a big role for UK Online centres and public libraries in developing information literacy skills, but as others pointed out, public libraries have limited hours, the public library service itself is not fully engaged with the topic at present and the information profession needed to do more to address what was seen as a deficit. Not everyone feels comfortable going into a public library, whether for training or just help with finding and interpreting information. They might go to a Citizens Advice Bureau but these are not set up for training and are also having their funding reduced. The role of sector skills councils was also raised as a source of training, but the strategy of the e-Skills Sector Skills Council does not address information literacy, as opposed to IT, skills [62]. This reflects the fact that the policies of government refer to IT skills, not information literacy skills, even policies aimed at combating social exclusion.

### 4.6. Opening up public data

The findings suggest that the UK government has had more success with how it has made its data more open for re-use by others, be they individuals, companies or social networking groups. The EU Directive on the re-use of public sector information [63], which came into force in 2005, required Member States to set up mechanisms to regulate the re-use of PSI. In the UK this role was undertaken by the Office of Public Sector Information [64], originally within the Cabinet Office but later in The National

Archives. Regulation itself was mandatory but making PSI available for re-use was not, although it was greatly encouraged and facilitated by the OPSI's work. The research suggested that the UK was at the forefront of developments on re-use in Europe [65]. However, much valuable data, especially geospatial data, was produced and controlled by trading funds, for example Ordnance Survey or the Met Office, which were required to cover their full costs. They therefore had to charge third parties significant amounts for licences to re-use their data, which interviewees from information service companies felt was counter-productive in developing the UK's knowledge economy [66].

*The Power of Information review* (PoI) [67], commissioned in 2007, and the Power of Information Taskforce [68] in 2008/9, paved the way for a revolution in the way government publishes its information. They encouraged the use of social media as a channel of communication, but also made recommendations on the structure of data which facilitated its re-use and subsequent development of new information services for the citizen by both the corporate and voluntary sectors, as well as by individuals. They also made recommendations about the relaxation of trading fund licences. These recommendations were taken up again by Berners-Lee [69] when he was appointed by Prime Minister Gordon Brown in summer 2009 to advise on how to open up UK government data further [70]. After a short consultation, much Ordnance Survey data was made freely available for re-use [71].

The push to open up government data, including data from trading funds, has been continued by the Conservative Liberal Democrat Coalition government through the Public Sector Transparency Board, whose members include Berners-Lee, Professor Nigel Shadbolt (leading on local government data) and PoI review co-author Tom Steinberg [72]. Much work has been done using semantic web technology to facilitate linking data [73], with the development of legislation.gov.uk [74] at the forefront, and over 7600 datasets had been released by late 2011 [75] through the data.gov.uk portal, which was set up as a channel for sharing data as well as a source of advice on good practice and a platform for new applications [76].

As the interviews with current and former civil servants showed, there had been a gradual sea-change from within government for many years, reflecting the move from presumed closed to presumed open non-personal data. The commissioning of, and responses to, the Power of Information review are testament to this, however interviewees from both inside and outside government also agreed that to change the attitude within government departments towards sharing information with the outside world would require a diktat from the highest level. Prime Minister David Cameron committed himself to an openness agenda [77] but it is too soon to assess to what degree the departmental culture has changed or will change and how much lasting difference there will be to government policy on access to PSI for citizens.

### 4.7. Drivers for change

What has brought about this change of attitude from the senior politicians? Drivers for change identified by interviewees were transparency and freedom of information legislation, new electronic mechanisms for doing business with citizens and availability of information from a wide range of sources. But as Bryson [78] pointed out, crises are good for galvanising action. So perhaps the new focus on open data should be seen in the context of a "perfect storm": a lack of trust in government and politicians [79], perceived to be secretive, exacerbated by the expenses scandals of 2009 [80]; the raised expectations that the public has of access to information enabled by the Internet and social networking [81]; and the desire to be (re-)elected at the 2010 general election. Also United States President Obama [82] made an openness pledge immediately on his inauguration, which both proved to be popular and showed it

could be done. Berners-Lee clearly had a big influence on Gordon Brown [83], possibly on opening up data from Ordnance Survey in particular, but it was Gordon Brown who called in Berners-Lee in the first place [84].

## 5. Conclusions

During 2010 the United Kingdom became one of *the* world leaders in providing access to its raw datasets for third party re-use – if you judge by the number of datasets made available rather than the quality of the data. It was certainly at the forefront of adopting linked data applications, such as the work on the legislation database. Of itself this is welcome news for the information profession and the citizen and shows a commitment to making government more open and accountable.

### 5.1. Content and design

However, and it is a big however, just releasing raw data does not mean that the citizen is automatically able to access more and better information. Technology should not be the master. The content and design must be relevant to citizens' needs, with guidance on the appropriate use of the information, including its reliability. Government has started to recognise this and it is now policy to improve the quality of information provided, concentrating on the data most important for citizens, but it will take time.

It should be remembered that the information that is newly being made available is, in many cases, the raw data underpinning already published statistical products. We have yet to see to what extent other *ad hoc* information is going to be made available, for example research reports. It is still for those outside government to invoke the Freedom of Information Act to gain access to certain documents.

The plethora of government websites, both national and local, with very variable degrees of usability, does not make it easy for the ordinary member of the public to find and efficiently use the information that they need to make decisions about their daily lives (Note: The UK government is now working on a single government domain project to bring together all major websites [85]).

### 5.2. Information literacy skills

The wish to move citizens over to accessing government services electronically is understandable. However there will be people without the skills to use the services and the research suggested that policy does not seem to be fully developed around how their needs will be met. Indeed, from the evidence, the biggest obvious gap in government information policy relates to information literacy skills. If people do not have these skills they cannot make informed and efficient use of any public sector information that is provided.

There still seems to be a lack of appreciation of the difference between IT skills and information literacy. It is not just a case of being able to use search engines; more needs to be done to train citizens and to train the trainers. There is a significant potential role here for public libraries (as well as UK Online centres, of which many are in public libraries), that they could develop further, particularly in the light of their need to show their relevance at a time of proposed cuts in public spending. In the long run, providing citizens with these skills would make them much more likely to use government's online services and therefore save the public purse.

Of course information literacy is dependent upon citizens having basic literacy skills. If they do not have the latter they will not be likely to develop the former. One can draw two conclusions from

this. Firstly there is a need to co-ordinate information literacy skills development with literacy skills development across government departments. Secondly, provision must be kept for those who will never sufficiently develop basic literacy skills. There is not likely to be a time when everyone accesses government information directly online, whether because they lack the literacy skills, or because of physical or psychological barriers. Without support from intermediaries, there is a danger that these people will be even further disenfranchised. (Note: The UK government now has an Assisted Digital team working on a range of initiatives to make sure that no one gets 'left behind' [86]).

### 5.3. Opening up government data

The opening up of government data has come at a time when trust in politicians is low but citizens' expectations for access to information electronically are high. The Coalition government's commitment to opening up government data is not in doubt although changing the culture across all government departments will take time. Nevertheless there has been a culture change during the research in the way that government ministers and officials have made use of social networking, whether it be Facebook, Twitter, their own personal blogs or through other sites. This was uncommon in 2007, particularly by officials. Guidelines have been developed to help civil servants in their dealings with social networking sites but there does not seem to have been any evaluation of how well the guidelines are working in practice and the extent and nature of officials' use of social networking,

Of course data that has been collected and manipulated for one purpose may not be suitable for use in other contexts, so just putting out datasets without any regard for their quality, reliability and suitability is of limited use. Early criticism of the datasets available on data.gov.uk relate to their quality and reliability, and their lack of appropriate formatting for re-use. There is a trade-off between:

(a) Releasing the data quickly while it is still in a rough or inappropriate format, leaving others to improve the data for use in specific new information services until the data is available in a more usable form, or

(b) Waiting until those inside government have had time to 'clean up' the data so that it is of better quality but keeping third-party developers – and therefore the public – waiting longer for useful information.

The government is pushing for the former approach [87]. The important point from the users' perspective is to make clear what the data can reasonably be used for, and this the government is starting to do, but it is a big job.

The Coalition Prime Minister has asked for a statement of citizens' information rights from the Public Sector Transparency Board and this has been sent out for consultation [88]. The research found a considerable focus on technology and data structure and a lack of emphasis on meeting user needs in the design of services – and their evaluation. With this in mind, the following data principles are suggested, which complement those of the Public Sector Transparency Board but have a greater focus on user needs:

a. Right of access to government information they need to make decisions about their lives free of charge, subject to national security and commercial/personal confidentiality

b. Right to independent scrutiny of decisions to withhold information

c. Right to have personal data held by government treated securely and not shared without the agreement of the individual to whom the data refers

d. Right of access to, and control of, all data held about themselves by public bodies

e. Right for information provided by government to be of high quality and reliability

   f. Right to access information in a format suitable for all citizens, which may mean through a proxy

   g. Right to have information services designed around the needs and capabilities of citizens, not government departments

   h. Right to re-use data generated with public funds at cost – in effect, free of charge

   i. Right of access to training in information literacy

   j. Right to professional advice on information matters.

## 5.4. Topics for further research

The development of open government and the provision of public sector information to citizens has continued at a rapid pace. As a result, there are a number of further research themes which could usefully be addressed when sufficient progress has been made:

   i. What information/datasets have been released and how does this compare with data that could be made available? And what mechanisms are, or could be in place, to make decisions about what to release?

   ii. To what extent has departmental culture become more open, and how can this be measured?

   iii. To what extent does EU policy influence UK policy, using directives relating to PSI as case studies?

   iv. What does a social network analysis of the key players in the development of UK PSI policy tell us about the relationships between them and the main influencers?

   v. To what extent are civil servants using social networking to communicate with citizens, both through their own blogs and Twitter and through external social networking? Are the guidelines on social networking being followed and still fit for purpose? This may include a comparative study with practice in other countries from which lessons could be learned.

   vi. International case studies of good practice overseas in the provision, and evaluation of provision, of open government data should be developed and lessons identified.

In conclusion, this research has been the first significant project in the United Kingdom to address government policy on the provision of public sector information to citizens. It has shown that this is an area where significant progress has been made in opening up government data but that there is a long way to go; there will be many further opportunities for academic researchers to investigate the boundaries between information policy, public administration, and the use of Web 2.0 and beyond in government. It is hoped that this research will help to stimulate a new wave of information policy research within the information academic community and encourage discussion within the information profession as a whole. The information profession ought to be at the heart of the new developments in the provision of public sector information services, and be seen to be at the heart, if it is to stay relevant in the 21$^{st}$ century.

## Addendum

Since this article was submitted for peer review, the UK Government has further developed plans for making public data open. Following the public consultation on a proposed Public Data Corporation to exploit the government's data, the government has instead set up the Data Strategy Board (DSB). The Board advises the Minister for Universities and Science within BIS (q.v.), and the Minister for the Cabinet Office, on how to maximise value from the data provided by the Public Data Group. (The Public Data Group brings together the following UK trading funds: Ordnance Survey; Met Office; Land Registry;

and Companies House.) The Board has an independent chair and its members include data users and re-users from outside the public sector. The Public Weather Service Customer Group, the Geographic Information Group and the Open Data User Group will become sub-committees of the DSB. For more information on the Board see: http://www.bis.gov.uk/transparency/data-strategy-board.

The work within the Cabinet Office for transforming government digital services is being taken forward by the Government Digital Service (GDS). Specific teams are looking at: digital engagement; assisting those who cannot use digital services, Directgov and its prototype single-domain successor GOV.UK. For information on the work of GDS, see: http://digital.cabinetoffice.gov.uk/about/.

To provide a research basis for its open data policy, the Government has set up the Open Data Institute (ODI) under the leadership of Professor Sir Tim Berners-Lee and Professor Nigel Shadbolt. Formally launched in October 2012, the ODI's vision is to demonstrate the business opportunities created through the utilisation of open data, nurturing and mentoring new businesses which are exploiting open data for economic growth. The Institute will be based in Shoreditch around the Tech City initiative and will develop training opportunities to support capacity building and best practice. For further information on the objectives of the ODI see: http://theodi.org/about.

In March 2012 Capgemini reported on a review of the work of Race Online 2012 and the Digital Champion (see http://ukdigitalchampionmodel.com/wp-content/uploads/2012/04/Evaluation-of-UK-Digital-Champion-and-Race-Online-2012-vFINAL.pdf). The results were used to inform the strategy of the successor body to Race Online 2012, Go ON UK, which was launched in April 2012 (see http://www.go-on-uk.org/). Go ON UK is chaired by the Digital Champion Martha Lane Fox and founding partners include: Age UK, BBC, Big Lottery Fund (BIG), E.ON, Everything Everywhere, Lloyds Banking Group, Post Office and TalkTalk. With government support, the new partnership aims to: "help make the UK the world's most digitally capable nation in which everyone and every organisation is able to enjoy the social, economic and cultural benefits of the internet."

## Acknowledgement

## References

[1]   Great Britain. Chancellor of the Duchy of Lancaster, *Open Government*, Cm 2290, HMSO, London, 1993, paras 2.1 – 2.3, p.7.

[2]   D. Cameron, *Letter to government departments on opening up new data, 31 May 2010*, <http://www.number10.gov.uk/news/statements-and-articles/2010/05/letter-to-government-departments-on-opening-up-data-51204>, (2010), [accessed 11.08.2010].

[3]   K.L. Hacker and J. Van Dijk, eds, *Digital Democracy: Issues of Theory and Practice.* London: Sage, 2000.

[4]   V. Homburg, *Understanding e-Government Information Systems in Public Administration.* London: Routledge, 2008.

[5]   For example M. Castells, *The Rise of the Network Society*, 2nd ed., Oxford: Blackwell, 2000.

[6]   C. Bellamy and J.A. Taylor, *Governing in the Information Age*, Open University Press, Buckingham, 1998.

[7]   R. Heeks, *Implementing and Managing eGovernment: An International Text*, Sage, London, 2006.

[8]   V. Mayer-Schönberger and D. Lazer, eds, *Governance and Information Technology,* MIT Press, Cambridge, MA; London, 2007.

[9]   J.E. Fountain, *Building the Virtual State: Information Technology and Institutional Change.* Brookings Institution, Washington, DC, 2001.

[10]  A. Chadwick, *Internet Politics: States, Citizens, and New Communication Technologies.* Oxford University Press, Oxford, 2006.

[11] G. Aichholzer, Scenarios of e-Government in 2010 and implications for strategy design, *Electronic Journal of e-Government* **2**(1) (2004), <www.ejeg.com/volume-http://www.ejeg.com/volume-2/volume2-issue-1/v2-i1-art1.htm>, [accessed 14.06.2008].

[12] P. Hernon, C. McClure and H.C. Relyea, eds, Federal Information Policies in the 1990s: Views and Perspective, Ablex, Norwood, NJ, 1996.

[13] S. Braman, *Change of State: Information, Policy, and Power*, MIT, London, 2007.

[14] I. Rowlands, ed., *Understanding Information Policy: Proceedings of a Workshop held at Cumberland Lodge, Windsor Great Park, 22–24 July 1996*, Bowker-Saur, London, 1997.

[15] G. Aichholzer and H. Burkert, eds, *Public Sector Information in the Digital Age: Between Markets, Public Management and Citizens' Rights*, Edward Elgar, Cheltenham, 2004.

[16] M. Bargmann, G. Pfeifer and B. Piwinger, A citizens' perspective on public sector information, in: *Public Sector Information in the Digital Age: Between Markets, Public Management and Citizens' Rights*, G. Aichholzer and H. Burkert, eds, Edward Elgar, Cheltenham, 2004, pp. 255–274.

[17] For example: M. De Saulles, When public meets private: Conflicts in information policy, *info* **9**(6) (2007), 10–16; R. Pollock, The economics of public sector information, in: *Access to Public Sector information: Law, Technology and Policy*, B. Fitzgerald, ed., Sydney University, Sydney, 2010, pp. 14–47; and P. Weiss, *Borders in Cyberspace: Conflicting Public Sector Information Policies and Their Economic Impacts*. United States. Department of Commerce. <http://www.epsiplatform.eu/psi_library/reports/borders_in_cyberspace>, (2002), [accessed 19.09.2010].

[18] For example: K. Jakubowicz, *Statement by Dr. Karol Jakubowicz, Chair of the Information for All Programme on the Occasion of the World Information Society Day, 2008*, Unesco, Paris, 2008, <http://portal.unesco.org/ci/en/ev.php-URL_ID=26764&URL_DO=DO_TOPIC&URL_SECTION=201.html>, 2008, [accessed 17.06.2008]; and World Summit on the Information Society, *Tunis Agenda for the Information Society*, International Telecommunication Union and United Nations, New York, 2005. (WSIS-05/TUNIS/DOC/6(Rev.1)-E). <http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2267|0>, [accessed 25.02.2008].

[19] M. Gurstein, *Open Data: Empowering the Empowered or Effective Data Use for Everyone?* [Open data blog]. <https://email.lboro.ac.uk/owa/ae=Item&a=Open&t=IPM.Note&id=RgAAAABqK%2f2fHtp9bTpyqGQvcpWS9BwDobPra2fmKvQredNcok7HXbACUlF2WmAADobPra%2fmKvQredNcok7HXbADlLXAr9AAAJ>, [accessed 10.09.2010].

[20] Chartered Institute of Library and Information Professionals, *Information Literacy: Definition*, <http://www.cilip.org.uk/get-involved/advocacy/information-literacy/pages/definition.aspx>, (2011), [accessed 09.12.2011].

[21] Unesco. *Information for All Programme: Information Literacy*. <http://portal.unesco.org/ci/en/ev.php-URL_ID=21293&URL_DO=DO_TOPIC&URL_SECTION=201.html>, (2008), [accessed 27.05.08].

[22] F.W. Horton, *Understanding Information Literacy: A Primer*, CI-2007/WS/18 – CLD 3008.7, Unesco, Paris, 2008.

[23] R. Catts and J. Lau, *Towards Information Literacy Indicators*, CI-2008/WS/1, Unesco, Paris, 2008.

[24] For example: S. Livingstone and E.J. Helsper, Gradations in digital inclusion: Children, young people and the digital divide, *New Media and Society* **9**(4), (2007), 671–696; and T. Newholm et al., The digital divide and the theory of optimal slack, *New Media and Society* **10**(2) (2008), 295–319.

[25] A. Chadwick, Internet Politics: States, Citizens, and New Communication Technologies, Oxford University Press, Oxford, 2006.

[26] J. Feather, The Information Society: A Study of Continuity and Change, 5th ed., Facet, London, 2008, pp. 198–199.

[27] R. Heeks, *Government Data: Understanding the Barriers to Citizen Access and Use*, University of Manchester, Institute for Development Policy and Management, Manchester, 2000.

[28] Feather, ref. 22.

[29] Feather, ref. 22. p. 185.

[30] Bargmann, Pfeifer and Piwinger, ref. 13.

[31] Great Britain. Cabinet Office. Central IT Unit, *Government.direct: A Prospectus for the Electronic Delivery of Government Services,* The Stationery Office, London, 1996.

[32] Conservative Party (Great Britain), *You Can Only be Sure with the Conservatives: Conservative Party Genera Election Manifesto 1997*, <http://www.conservative-party.net/manifestos/1997/1997-conservative-manifesto.shtml>, (1997), [accessed 28.04.2008].

[33] Labour Party (Great Britain), *New Labour Because Britain Deserves Better: Labour Party General Election Manifesto 1997*, <http://www.labour-party.org.uk/manifestos/1997/1997-labour-manifesto.shtml>, (1997), [accessed 28.04.2008].

[34] Great Britain. Cabinet Office, *Modernising Government*, Cm 4310, The Stationery Office, London, 1999.

[35] European Parliament and Council of Europe, Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information, *Official Journal of the European Union* (31 December 2003), L 345/90-96.

[36] E. Mayo and T. Steinberg, *The Power of Information: An Independent Review by Ed Mayo and Tom Steinberg*, <http://www.cabinetoffice.gov.uk/upload/assets/www.cabinetoffice.gov.uk/strategy/power_information.pdf>, (2007), [accessed 25.02.2008].

[37]    Great Britain. Power of Information Taskforce, *Power of Information Taskforce Report*, <http://poit.cabinetoffice.gov.uk/poit/>, [accessed 09.04.2009].

[38]    Author interview with senior civil servant, London, 1 September 2009.

[39]    M. Lane Fox, *Directgov Review*, <http://directgovreview.readandcomment.com/>, (2010), [accessed 21.08.2010].

[40]    Great Britain. Cabinet Office, *Clamp Down on Government Websites to Save Millions,* Press release 24 June 2010, CAB 104-10, <http://www.cabinetoffice.gov.uk/newsroom/news_releases/2010/100624-websites.aspx>, (2010), [accessed 11.08.2010].

[41]    Author interview with senior lobbyist and researcher, London, 28 July 2009.

[42]    Author interviews with senior members of the information profession, London, 5 March 2009 and 9 December 2009.

[43]    *Ibid.*

[44]    Kable, Government to make some services online-only, *GC Weekly*, (22 November 2010), <http://www.kable.co.uk/government-services-online-only-francis-maude-22nov10>, [accessed 25.11.2010]. [Reproduced from The Observer, 21 November 2010].

[45]    Author telephone interview with senior academic and member od the information profession, 19 February 2009.

[46]    B. Page, Library cuts and job losses condemned by leading authors, *Guardian*, (22 November 2010), <http://www.guardian.co.uk/books/2010/nov/22/library-cuts-leading-authors-condemn>, [accessed 26.11.2010].

[47]    Race Online 2012, *Manifesto for a Wired Nation*, <http://raceonline2012.org/sites/default/files/resources/manifesto_for_a_networked_nation_-_race_online_2012.pdf>, (2010), [accessed 04.09.2010].

[48]    Great Britain. Central Office of Information, *Engaging Through Social Media,* <http://www.coi.gov.uk/guidance.php?page=264>, (2009), [accessed 27.08.2010].

[49]    Great Britain, *Freedom of Information Act 2000: Elizabeth II*, <http://www.legislation.gov.uk/ukpga/2000/36/notes/contents>, (2000), [accessed 25.09.2010].

[50]    R. Stirling, *Podcast: Richard Stirling Talks About Progress on data.gov.uk*, <http://data.gov.uk/blog/podcast-richard-stirling-talks-about-progress-datagovuk>, (27 July 2010), [accessed 03.10.2010].

[51]    For example, interviews with senior civil servants, London, 3 August 2009 and 1 September 2009.

[52]    Heeks, ref. 23.

[53]    Unesco, ref. 17.

[54]    Gurstein, ref. 16.

[55]    Feather, ref. 22.

[56]    Race Online 2012, ref. 43.

[57]    Great Britain. HM Government, *Putting the Frontline First: Smarter Government*, Cm 7753, TSO, London, 2009.

[58]    International Federation of Library Associations and Institutions & Unesco. *Alexandria Proclamation*. <http://www.infolit.org/International_Colloquium/alexproceng.doc>, 2005, [accessed 30.07.2008].

[59]    Race Online 2012, ref. 43.

[60]    For example: Feather, ref. 22 and Gurstein, ref. 16.

[61]    Response by Professor Sir Tim Berners-Lee to a question posed by the author at the Open Gov Data Camp, London, 19 November 2010.

[62]    Great Britain, e-Skills UK Sector Skills Council, *Strategic Skills Assessment for the Digital Economy*, Great Britain. e-Skills UK Sector Skills Council, London, 2009, <http://www.e-skills.com/Research-and-policy/2687>, [accessed 09.08.2010].

[63]    European Parliament and Council of Europe, ref. 31.

[64]    Great Britain, *The Re-use of Public Sector Information Regulations 2005*, SI 2005/1515, <http://www.opsi.gov.uk/si/si2005/20051515.htm>, (2005), [accessed 26.06.2008].

[65]    Author's interview with senior government adviser and academic, London, 5 August 2009.

[66]    Author interviews with senior players in the information industry and government advisers, London, 26 February 2009 and 8 July 2009.

[67]    Mayo and Steinberg, ref. 32.

[68]    Great Britain. Power of Information Taskforce, ref. 33.

[69]    T. Chatfield, Prospect talks to the father of the world wide web, *Prospect Magazine* **167** (2010), 3.

[70]    Great Britain. Cabinet Office. *Pioneer of the World Wide Web to Advise the Government on Using Data*, Press release10 June 2009, <http://www.cabinetoffice.gov.uk/newsroom/news_resleaves/2009/090610_web.aspx>, [accessed 17.06.2009].

[71]    Great Britain. Department for Communities and Local Government, *Policy Options for Geographic Information from Ordnance Survey – Consultation: Government Response*, Great Britain. Communities and Local Government Publications, London, 2010.

[72]    Great Britain. Cabinet Office, *Cabinet Office Minister Opens Up Corridors of Power*. Press release 31 May 2010, CAB 071-10, <http://www.cabinetoffice.gov.uk/newsroom/news_releases/2010/100531-open.aspx>, (2010), [accessed 11.08.2010].

[73]  D. Pullinger and J. Sheridan, *Lessons Learned Implementing Semantic Web in UK Government,* Paper presented at Online Information 2009, London, 2 December 2009. [Not published in proceedings.]

[74]  Great Britain, Legislation.gov.uk, *Help,* <http://www.legislation.gov.uk/help#aboutOpsiSld>, (2010), [accessed 24.10. 2010].

[75]  Great Britain, data.gov.uk, <http://www.data.gov.uk>, (2011), [accessed 01.11.2011].

[76]  Great Britain. HM Government. *Public Launch*, [Data.gov.uk blog of 19 January 2010], <http://data.gov.uk/blog/public-site-launch>, (2010), [accessed 03.08.2010].

[77]  Cameron, ref. 2.

[78]  Author's meeting with Jo Bryson, Executive Director of the Australian Public Sector Commission, 11 March 2009.

[79]  Great Britain. Audit Commission, *The Truth is Out There: Transparency in an Information Age; a Discussion Paper March 2010,* Great Britain. Audit Commission, London, 2010.

[80]  BBC. News, *MPs' Expenses*, <http://news.bbc.co.uk/1/hi/in_depth/uk_politics/2009/mps'_expenses/default.stm>, (2010), [accessed 23.11.2010].

[81]  Author's interview senior civil servant, London, 3 August 2009.

[82]  B. Obama, *Transparency and Open Government: Memorandum for the Heads of Executive Departments and Agencies*, (21 January 2009), <http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment/>, [accessed 26.11.2010].

[83]  Chatfield, ref. 65.

[84]  J. Crabtree and T. Chatfield, Mash the state, *Prospect* **167** (2010), 42–46.

[85]  Great Britain. Cabinet Office, *One Step Closer to a Single Government Domain*, 11 August 2011, <http://www.cabinetoffice.gov.uk/news/one-step-closer-single-government-domain>, [accessed 16.11.2011].

[86]  Great Britain. Government Digital Service, *An Introduction to Assisted Digital,* 28 July.2011, <http://digital.cabinetoffice.gov.uk/2011/07/28/an-introduction-to-assisted-digital/>, [accessed 16.11.2011].

[87]  Great Britain. HM Government, *Making Open Data Real: A Public Consultation*, August 2011, <http://data.gov.uk/opendataconsultation>, [accessed 16.11.2011].

[88]  *Ibid.*