

Exploring the Impact of Adopting Open Data in the UK Government

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1. INTRODUCTION

A new kind of activity – fuelled by the capabilities that not only modern Web technologies offer, but also as a change in social practices and expectations – has recently become the centre of much attention and discussion [7]; it involves the curation and publication of Government data in free, open format. Open Government is set to become a major aspect of how citizens and governments communicate and share information with each other.

With the aim to provide a platform for citizen-to-government transparency, improved efficiency and economic growth [2], the implications and impact of this activity is poised to affect all corners of society. The activity, which is as much a worldwide effort as countrywide [5], aims to publish as much locked-away government data as possible, including transport, crime, public health, environmental and education data [4]. However, instilling the practices of Open Data in the government is not only a technical feat, but one which will challenge the pre-existing social and cultural practices that are deeply embedded within such an institution.

The activities of the Open Government Data (OGD) community can be felt across the online and offline world; within the myriad of interconnected network of networks [3] that shape the Web – from online shopping to entertainment and news – and the day-to-day activities of modern society. It is inspiring digital innovation, enabling new current businesses to emerge, and equipping traditional and new forms of journalism with open and reusable datasets. Open Government is driving change and growth for the UK's digital economy.

This is a truly socio-technical evolution; OGD involves a network of different actors, from well-established institutions to the solo-hobbyist developer and interested citizen. Collaboration and commitment is essential, simultaneously requiring the adaptation and support of technologies that can assist and harness the growth required. The goals of this new kind of activity are well documented [1,2,7], yet its structure, impact and current state of development are not yet fully understood. To be able to understand what lies ahead, understanding what has and is currently happening is essential, especially for something as complex and multi-faceted as instrumenting the publication of government data; a task that is full of technical, cultural, political and economic challenges.

In this paper, we examine impact of Open Data on the UK government. By exploring the social and technical developments, an analysis of the underlying structure and processes is performed; and the adoption of Open Data within the UK Government and its impact to the digital economy is discussed.

2. ACTIVITIES OF THE UK OPEN GOVERNMENT DATA COMMUNITY

The study within this paper provides an analysis of the network of socio-technical activity which has led to the formation, growth, and change within the UK OGD community. In order to examine its structure, growth, and future development of the community, the study draws upon a mixed of quantitative and qualitative sources of data; consisting of 22 semi-structured interviews, selected for their varying roles within the community, including civil servants, councillors, developers, Open Data lobbyists and academics. Questions were asked regarding the history, development, and changes in the community, and also the enablers and barriers to adoption. The results of the interviews demonstrated a polarised set of views between participants, which was not only a result of their position and role within the community, but also related to their knowledge and past experiences with similar public sector changes. The interviewees were identified by following the digital traces of their online activities, their reputation and attendance in many of the major OGD related meetings, conferences, and events. Following their digital traces involved a number of participatory observations—attending various OGD events—and also analysing a collection of Web-based ‘big data’ sources, including online communication via social media streams, and more traditional services such as discussion threads. This is an extremely important component of the study, as activity and action occurs as much in the virtual world, as it does in physical settings, as one participant said, “[The OGD community] is substantially a community that lives on Twitter”. As part of the quantitative analysis, a number of UK OGD data portals – selected at various levels of the community (see Figure 1) – were examined in terms of their commitment and frequency of publishing data. This provided an insight into the outcomes of the OGD agenda's and goals, including the historic and current state of published UK OGD.

By drawing upon all sources of information, the current impact of adopting Open Data within the UK Government has been explored. The initial analysis of the data has led to discovering the complex structure of the UK OGD community and how this has been an enabling factor in the adoption of OGD within the UK government.

2.1 UK OGD Community Structure

The UK OGD community can be broken down into several subsections which correspond to different sectors and activities corresponding to the UK geographic and demographic structure. The following analysis and structural overview in Figure 1 is based on the synthesis of interview data and Web documentation.

At a national level, the UK OGD community consists of a number of official committees such as the Cabinet Office's Transparency Board, containing a mix of civil servants and other digital champions, including those associated with the academy, industry, organisations, and also corporations using Open Data. This level also includes the network of activity surrounding data.gov.uk (the national repository for Government Data). In addition, the national press – working with the Government – provide coverage of the latest activities of OGD, and also consuming data for their own applications and reports. Embedded at this level are the community of stakeholders interested in the use of Semantic Web and Linked Data technologies, which in itself draw upon a much larger set of international actors, who are which are well-connected within the academy and surrounding circles of interest.

At the regional level, a number of sub-communities exist that often include the stakeholders involved within the national level OGD activities. The regional level agenda is close to that of central Government's Open Data plans, developing similar datastore solutions such as the London Datastore. Although the regional datastores offer their own approach to publishing OGD – some which are independent of central government – the development of them tends to follow the technical solutions used at the national level, as well as the same social processes to gather support and interest in publishing and using the data.

Finally, at the local and council level, there is the publication of local council datasets, finance reports and other local authority data. Similar to the regional level, many councils and local authorities are now producing their own data portals for data. Despite no direct instructions from Central Government to provide local level Open Data, the mandate to publish council spending over £500 has been a catalyst for councils to begin publishing a variety of datasets.

Scattered across these different levels of the UK OGD community are developers, businesses and smaller organisations that are involved with the sourcing, publishing and importantly, consumption of the data. They also act as intermediaries between the various levels identified, acting as catalysts, providing channels of communication, incubating and driving ideas. Within this community are the lobbyists, and Open Data advocates involved with pushing the UK OGD agenda forward. Many of these actors have been directly involved with the different, businesses, and government boards, and continue to do so.

In addition to this, there is a very active online community, ranging from the use of social networking sites for communication and disseminating news, as well as press releases via government and associated websites, the national press, and also personal and professional blogs. Often the links between the actors in the online world are implicit or embedded, providing a traceable network of communications and activity between actors, which are weaved between the different levels of the community.

2.1.1 The Development of the OGD Community

The structure of the community has been a critical component to its development path and ability to succeed in the goals that were originally set. Growing organically from a variety of mixed agendas, interests and incentives enabled the translation of such a complex task. Rather than instilling a top-down approach, the path to the UK OGD community has been driven by stakeholders that are spread amongst different sectors and institutes in society, and despite approaching it with a number of different agendas, there existed an overall objective: to obtain, publish and use

Government Data in free, open formats. As one interviewee suggested *"There was always these three tiers, but with the program announced, it was a chance to lock these together"*.

The networks of networks that exist within the OGD community were brought together by a mix of serendipitous events and meetings, involving the intermediaries who championed change, approaching them with a vested interest in multiple agendas. Importantly, it was crucial for these networks to operate independently, simultaneously achieving their own goals whilst paying attention to the common agenda. Furthermore, the *"friendly competition"* from other OGD initiatives in different countries helped drive the development within the UK. However even though the network of activity at the national level may have seen this as a *"Race to the top"*, as another interviewee suggested, the other communities involved kept the agenda's towards the UK's goals: *"if they don't like the data or the approach or the processes, they become very vocal about it, and that ability to diffuse those messages upwards"*.

It is also important to pay attention to the online activities which underpinned the development of the community, as it is often quoted as dominant medium for the stakeholders to bridge agendas, sub-communities and increase awareness and support of the OGD movement. The various Web communication platforms play an important role in enabling hidden communities and actors involved in Open Data to become visible and participate in a shared agenda of publishing government data. This is not only critical for the speed to adoption, but also the scale and diversity.

2.2 Impact of Adopting Open Data in the UK Government

The impact of instilling the social and technical practices of Open Data within the UK government is far reaching, not only helping unify government services, reducing citizen-to-government barriers, and improving efficiency across government departments, but also improving businesses and individual's engagement with the UK's digital economy.

Within government, the move towards opening up government data has driven both a social and cultural change across departments. This required a change of mind-set from civil servants to adapt to new processes and technologies, plus an outward-facing social change, where data is Open by default. This has challenged existing policies and workflows, and also pushed the current technical skills and capabilities of the civil servants and legacy systems. In response to OGD, new licencing conditions have been established, such as the Open Licence – enabling free, unrestricted use of the data. As a result of this, as of September 2012, 85% of the 11708 published datasets in data.gov.uk are under an Open Licence¹

This impact is also felt at both the regional and local government level, where the publication of government data in open, reusable formats has started to emerge. A number of city driven datastores, which offer similar services to data.gov.uk, have been established, and over 100 councils and local authorities have begun to publish datasets using the Open Licence. Despite the initial overheads for publishing this information in terms of skills, resources, and technology required, local councils and cities with published Open Data are finding that the resources spent on dealing with

¹ Figure based on analysis of dataset dump available at <http://data.gov.uk/data/dumps> - Accessed 20th September 2012

Freedom of Information (FOI) requests are beginning to reduce; which is not only a direct benefit for councils and associated government funds, but also enhancing the citizen-to-government experience. However, despite the opportunities and benefits that publishing government data provides, at the local level, there are concerns amongst council employees that publishing data will remove the need for specific roles within the organisation; “people are paid to interpret data, and when you publish it and make it open, clearly their role is basically threatened, because they expect other people to be doing it”.

It has also been identified that the publication of data at the national level in data.gov.uk is improving efficiency between government departments, councils and local authorities. Data which was once only accessible via manual requests (often written) is now obtainable via the various government datastores, reducing time and expense. Interviewees discussed the ‘closed-door’ environment of local councils, sharing data and information between departments was not practiced. However, Open Data offered a way to overcome this, and reportedly could potentially save £8.5 million a year in wasted employee hours [6]

The drive towards publishing government data in the UK has increased the engagement with businesses, SME’s and software developers. Close to 200 mobile applications have been developed utilising government data, produced by a range of one-man developer start-ups to medium sized businesses. Open Data is also at the core of a number start-up ventures, and with the emergence of the Open Data Institute (ODI) – a new venture to expose the commercial value of Open Data [2] – they will continue to be nurtured and developed.

3. CONCLUDING REMARKS

The study of the structure and adoption of Open Data within the UK Government reveals a number of important findings which demonstrate the current and long-term impact towards the UK’s digital economy. As a result of the commitment and growing efforts of the various stakeholders in the community and the continuous publication of data, the initiative is improving government efficiency, transparency, unifying processes between

departments, and importantly, engaging with businesses and citizens.

Lessons for future OGD initiatives have been learnt from unpacking the structure of the UK OGD community, whose success was based upon a mix of top-down and organic growth from different sectors within society; providing the leverage to tackle barriers to adoption from multiple directions and solutions.

Finally, at the heart of the OGD community, contributing to the successful development, enrolment and commitment of new and existing stakeholders is the Web, acting as a medium for distributing and sharing data and information, and providing a bridge for connecting individuals, businesses and communities across its fragmented structure, critical for successfully achieving such as complex, socio-technical venture.

4. REFERENCES

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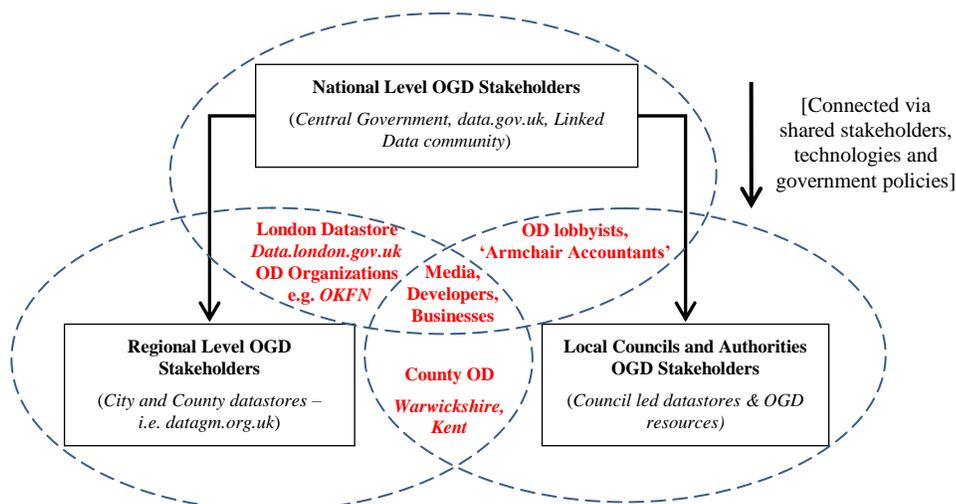


Figure 1. Structural Overview of the UK Open Government Data Community - Data providers at the National, Regional and Local Level, and the Data Consumers (Red Labels)