

# Barriers to Open Data Release: A View from the Top

Emily Barry  
Trinity College, Dublin  
Barryem@gmail.com

Frank Bannister  
Trinity College, Dublin  
Frank.Bannister@tcd.ie

## ABSTRACT

*The pressure for governments to release much of the vast reservoirs of data that they hold continues to grow. This pressure is grounded not just in principles such as the right of the public to know or freedom of information, but in beliefs, what have even been called myths, about the economic, social, administrative and political benefits that will flow from the wide availability of such data. However it is also acknowledged that there is a considerable gap between this ideal and reality, one component of which is the many barriers to open data release. This paper examines these barriers from the perspective of senior managers in Irish central and local government. A taxonomy of these barriers is proposed and compared with other classifications of barriers in the literature. The paper concludes with some reflections on the implications for the opening up of government data.*

## 1. Introduction

Open data is one of those expressions that is often used without being defined (for an example of this see Huijboom and Ven de Broek 2011). Even where it is defined, definitions are sometimes loose or vague. A typical example of such a definition is:

*“Making data that belongs to the public broadly accessible and usable by humans and machines, free of any constraints.” (Socrata 2013)*

This definition is problematic not least in that it is unclear “belongs” means. A somewhat better definition is provided by Geiger and von Lucke (2011, cited in Zuiderwijk, Janssen and Choenni 2012, p.794) is as follows:

*“All stored data of the public sector which could be made accessible by government in the public interest without any restrictions on usage and distribution.”*

There are problems with this too - for example what is “the public interest” and who defines it? Nonetheless, the implication of this definition (and a number of similar ones not cited) is while there is a great deal of data stored by governments which can and should be available to citizens, there are also data held by governments which cannot be made open because of legal, ethical, commercial

or other constraints on making them available. The latter is the starting point for the research discussed in this paper.

Interest in the concept of open government data, or open data for short, has been around for many years (Janssen 2011) and continues to grow driven in part by pressure for increased public sector transparency and in part by the current enthusiasm for in big data and data analytics (Chen et al 2012). Though transparency is often starting point, transparency is by no means the only rationale for open data. Open data is seen as important, or even critical, to a range of socially desirable outcomes ranging from co-creation to social innovation (Bertot et al 2011). But before transparency or any of the other good things expected from open data can happen, the data have to be available in the first place and making public sector data available in a useable format can be more problematic than many people appear to think. The nature and the scale of this problem varies across polities. Ireland is one polity where the availability of data is currently poor and the process of making data open to the public has been slow so it provides a useful case for studying such barriers.

This paper draws on a research project carried out in the spring and summer of 2012. The research sought answers to three questions. From a senior management perspective:

1. What are the barriers to making data open in Ireland?
2. How should the challenge(s) of making data open be addressed?
3. What are the perceived potential benefits of/opportunities created by open data?

This paper is only concerned with the first of these questions, though the other two will be briefly referenced. As the research progressed, a taxonomy of barriers to the making open data available in Ireland, as perceived by senior managers, emerged. The applicability of this taxonomy in other polities is not examined in this paper, but is presented as a conjectural model for others to explore or develop in different political contexts (see section seven). When discussing barriers to open data there is an important distinction to be made between barriers to adoption and barriers to release. Each of these can be broken down into a number of subcategories (see below). This research is concerned with barriers to release and for this reasons engaged with senior managers within the public sector, the people who ultimately are responsible for determining (or advising government on) data release. As Zhang et al (2005, p549) put it "*Benefits and barrier expectations can [also] vary depending upon the types of participants...*". This research therefore reflects a particular type of participant, but one that provides some useful insights.

This paper is constructed as follows. Section two contains a brief background to this research. Section three reviews important aspects of the relevant literature and section four describes the research methodology. Section five presents the findings and analysis of those findings and the proposed taxonomy of barriers to open data. Section six discusses these and section seven looks at the limitations and possible lines of further research.

## 2. Background

Within the European Union (EU), several members are embracing the concept of open data with enthusiasm (Janssen 2011). So far Ireland is not one of them. Ireland does not compare favourably with Europe in general nor with its nearest neighbour in particular when it comes to the number of government datasets released to the public. In mid-2012 PublicData.eu contained over 13,000 datasets from countries around the EU. No data packages from Ireland were available on this portal compared with 7,512 from the UK (publicdata.eu 2012). At the time of writing this paper (July 2013) these numbers have grown to 8 and 10,598 respectively (publicdata.eu 2013). This research set out to determine why Ireland, the European headquarters of many high-tech companies and a self-proclaimed innovation hub, is being so slow to unlock the potential value of releasing its public sector information through open data initiatives.

In the interests of balance, it must be said that some efforts have been made to improve the situation, but progress is slow and sporadic and most of the progress has been made by local rather than central government. A notable exception to this national foot dragging is *Fingal Open Data* which was launched in November 2010 and which is, according to many interviewees in this study, the true first open data site in Ireland. It was created by Fingal County Council, the third largest local authority area in Ireland (Fingal County Council 2012). At a national level, in December 2010 *opendata.ie* was launched by the Digital Enterprise Research Institute (DERI) and members of the Open Data Ireland Google group to provide citizens with access to high value, machine readable datasets generated by the public sector. In October 2011, Dublinked was launched. Dublinked is an open data initiative making available to the wider public data on public service provisions in the local authorities of Dublin ([www.dublinked.ie](http://www.dublinked.ie)). During the course of the research the Irish eGovernment Action Plan in April 2012 was launched. Open data was included in the plan in accordance with the principles of the Public Sector Information (PSI) Directive and it notes that:

*“Public Bodies will ensure that, where possible, data made available publicly will be produced in a reusable format”*

(Department of Public Expenditure and Reform 2012, p3). The plan demonstrates that Public Bodies in Ireland already publish large amounts of data online, which is backed up by reports by the European Commission indicating Ireland is performing better than the EU average when it comes to eGovernment (see Appendix 1), however, much of the data published by the government is not in a machine readable format and yet other data is not available in any format. Notwithstanding these various initiatives, progress to date remains dismal.

This paper asks why.

### **3. Literature Review: Transparency, Openness and Open Data**

#### *3.1 Barriers*

While much has been published on the benefits, proven or alleged, of open data, open government, transparency and accountability, research into barriers to open data to date has been less extensive. This literature review examines a number of papers, mostly published in the past decade, which are either concerned specifically with barriers or examine barriers as part of a wider exploration of open data. In addition, a number of papers from the transparency literature which reflect directly or indirectly on potential barriers are discussed. From this, as will be seen, several ways of classifying barriers emerge.

A number of recent papers which have explored the problem of barriers come from research undertaken as part of the EU FP7 ENGAGE project. One such is Janssen et al (2012) which examines benefits, adoption barriers and myths of open data and open government. The authors approach the question of barriers from the perspective of Institutional Theory (Scott 1995, Fountain 2001) and come up with six categories of barrier:

1. Institutional
2. Task complexity
3. Use and participation
4. Legislation
5. Information quality and
6. Technical.

While most of the barriers described are adoption barriers, a few are release barriers (e.g. a revenue stream is derived from the sale of data and is thus threatened by the possibility of making such data freely available). The authors suggest that institutional barriers result in resistance (the word they use is 'recalcitrance') to change, though it is not obvious that it is not, in practice, the converse that is true. In the same year, Zuiderwijk *et al* (2012) proposed a list of 188 social and technical impediments (to use their term) to open data. Their data is drawn from the literature, interviews with users and a number of workshops. The authors classify these impediments in a number of ways. For example they classify impediments found in the literature under three headings:

1. Data access impediments
2. Data use impediments
3. Data deposition impediments

and they classify the social headings into eight categories:

1. Availability and access
2. Findability
3. Useability
4. Understandability

5. Quality
6. Linking and combining data
7. Comparability and compatibility
8. Metadata.

Each of these, and the first two on the preceding list, are primarily sub categorisations of adoption barriers. They conclude, *inter alia*, that realising positive effects and creating public value from using open data on a large scale seems to be “...*too ambitious at this moment*” (p170) though they remain optimistic.

Conradie and Choenni (2012) address the issue of the data release. In their paper they consider the problems of data release by local government in the Netherlands. They use four categories of barrier namely:

1. Fear of false conclusions
2. Financial effects
3. Opaque ownership and unknown data locations
4. Priority (i.e. local government has more important things to do first).

They discuss a range of concerns typically found in discussions of barriers such as privacy, copyright and commercial sensitivity and suggest that maybe some of these barriers could be overcome if the benefits of open data to civil servants themselves were made clearer.

Martin et al (2013) set out to create a ‘clear typology’ of challenges, risks, limitations [and] barriers. They divide what they call the risks of opening up data into seven categories:

1. Governance
2. Economic issues
3. Licenses and legal frameworks
4. Data characteristics
5. Metadata
6. Access and
7. Skills.

Their research, carried out using municipal data from a city in France and a city in Germany and national data from the UK results in an interesting categorisation of risks which they present (as does this paper) as a fishbone (Ishikawa) diagram. Within the above typology, they identify 50 risks, though some of these are not risks in the normal sense of the word and it is not always clear what the risk is in certain cases. Nonetheless, they suggest some novel perspectives, particularly on problems with metadata (an issue also discussed by Zuiderwijk et al 2012).

Blakemore and Craglia (2006) discuss the problem of resources as a barrier to opening up public sector information (PSI). They discuss the so-called Rayner doctrine for official statistics which argues that data is collected for administrative reasons and that subsequent dissemination of this is

not a core business need of the state. Notwithstanding later attacks on this concept, they conclude that *“Universal access, not surprisingly, ends up being surrounded by resourcing caveats.”* (p20).

Zhang et al (2005) report on a study done in New York State (NYS) on benefits and barriers to knowledge sharing between public organisations. The authors undertook a survey in a number of NYS public agencies using a list of benefits and barriers drawn from a number ‘key’ studies done in the 1990s by Dawes and others. Zhang et al categorise barriers into three types:

1. Technological
2. Organizational
3. Legal and policy.

Their survey asked respondents for their ratings of 28 barriers which ranged from unrealistic timeframes to lack of respect amongst organisations. However, because this study was about inter-organisational sharing, many barriers to wider dissemination were not included.

Zuiderwijk, Janssen and Choenni (2012) take the view that it is not sufficient simply to open up data because open data policies are still accompanied by many impediments from the user’s perspective. They find four main challenges to the use of open data:

1. Fragmentation of data
2. Lack of access to data
3. Lack of interoperability
4. Difficulties in processing the data.

To answer their question about which policy measures could be introduced to overcome these impediments, they suggest creating policies that include;

- policy guidelines to rectify fragmentation by centralising repositories,
- creating access to data for all,
- improving interoperability by including structured metadata and,
- creating an infrastructure for processing PSI.

They suggest that further research should pay attention to barriers for opening up data by data producers because, though there may be a willingness to open up data, there are insufficient guidelines to decide which datasets are eligible for release.

### 3.2 *Other Literature*

The papers discussed above are specifically concerned with open data, interagency data exchanges or PSI. Other authors have discussed barriers indirectly, for example looking at the negative impacts of open data and transparency – impacts that might well lead senior managers to be defensive about data release. In an examination of the effect of transparency on international crises, Finel and Lord (1999) test two theories. The positive theory sees transparency as diffusing international crises through illumination. They highlight the media as a major transmitter of information made available through transparency and echo sentiments of Worthy (2010) that there is a tendency to transmit

more negative statements which can undermine behind-the-scenes conflict resolution. Another critique by Bannister and Connolly (2011) examines the possibility that transparency, in certain circumstances, may be inimical to good government a concept also discussed by Worthy (2010). Coglianese (2009) seeks to understand whether Barack Obama's presidential election promises of increasing transparency have been politically beneficial to him. She notes that, despite his rhetoric, president Obama has himself placed limits on transparency, again indicating that there are perceived barriers. She suggests this raising and dashing of expectations will simply reinforce public cynicism.

Grimmelikhuijsen (2011, 2009) comments on the tendency of some commentators to overestimate the value of transparency and the so-called 'gotcha' culture in the media which looks for any stick with which to beat politicians and public servants. This results to what can be an undue emphasis on the negative which naturally leads to reservations about releasing data. In another study, de Fine Licht (2011) performed an experiment to test whether transparency in decision making can lead to increased perceived legitimacy in terms of acceptance of decisions and trust. She notes that some argue that more openness is better and that increasing transparency can do no harm in terms of trust. Both of these studies demonstrate that the relationship between transparency and trust is more complicated than generally assumed by those who have not studied the subject, a result also found by Grimmelikhuijsen, and another source of concern to senior managers in the public sector. The potential for transparency leading to mistrust is a point made by Strathern (2000) who focuses on techniques for assessing and evaluating institutions often defended on the grounds of transparency. Using the British higher education system the author demonstrates that such transparency can also have a tyrannous side. Drawing on Tsoukas' paper 'The Tyranny of Light' (1997), she points to the proliferation of league tables and a belief that institutional behaviour can be shaped with the right type of enforcement.

Etzioni (2010) attempts to show that transparency is overvalued and cannot fulfil the functions its advocates assign to it. His concern is the recent commentary indicating that transparency has the power to eliminate the need for many government controls or legislation. He points out that for information to be complete, there are often limits to the extent of which it can be simplified. In contrast to Hale's (2008) claim that transparency cuts through the deluge of information to focus attention on facts, he concludes that it is far from proven that information that is reasonably comprehensive can be digested by the public. He concludes that transparency cannot replace other kinds of regulation and is overrated. Worthy (2010) examines the impact of the UK's Freedom of Information Act of 2000 by identifying six objectives of Freedom of Information (FOI) and measuring the extent to which they have been achieved. The results of his study demonstrate that, while FOI has met its core objectives of transparency and accountability, it has not achieved its secondary goals of increased public participation and trust. Worthy reflects on the potential for the 'chilling effect', where information is sanitised or meetings are conducted in a manner to avoid creating a record in order to avoid responsibility, echoing some of Hood's (2007) remarks though he admits that there is only anecdotal evidence of this.

Media analysis strongly supports points made in numerous pieces that the media tend to run negative stories (Coglianese 2009). Only 3% of the stories he analysed increased reader's trust while 58% reduced trust. Given the use of transparency and accountability together, Hood (2010) echoes other academics' views that there is a trend to endorse transparency without much reflection. He

echoes aspects of his earlier work (Hood 2007) when he argues that transparency's constant link to accountability may in fact hinder aspects of good governance if more effort is put into blame-avoidance. Heald (2006) too recognised that transparency of process may be sometimes damaging to efficiency because it can induce defensive behaviour in the face of too much surveillance though Hale (2008) highlights how openness actually affects behaviour remains theoretically and empirically underspecified. Exploring what happens when the much advocated transparency meets the widely observed behaviour of blame avoidance in public administration and politics, Hood (2007) identifies three common forms of blame avoidance strategies; agency, presentational and policy. He identifies the media as shaping negativity bias, paying more attention to negative experiences and exposing more information that decreases trust. Agency strategies are defined as attempts to avoid or limit blame by the way responsibility is allocated, with delegation being more risk-averse. However, there are also situations in bureaucratic hierarchies where decisions are pushed upwards when nobody wants to take a difficult decision for fear of taking blame. Presentational strategies are defined as attempts to avoid or limit blame with the use of spin; accentuating the positive and deflecting attention from the negative. In such circumstance, keep the facts away from public gaze may play an important role.

### 3.3 *Summary*

What emerges from this brief review are several lists of barriers to open data and an almost equal number of ways of classifying these lists. Various different types of study of barriers have been performed, some based on meta research, some based on surveys and interviews, some within regional government, some across polities. Of these, the only one to pay particular attention to different stakeholder perspectives on barriers is the study by Zhang *et al* (2005), but that study, as was noted, was confined to inter-organisational data exchange. So far we not been able to locate a study that has specifically set out to look at barriers from the perspective of senior managers in the public sector. An interesting question is whether such managers come up with the same set of disclosure barriers or not.

## 4 **Findings**

### 4.1 *Findings from Documentation Analysis*

The analysis of documentation began with a complete read through of relevant documentation. Much of the documentation was referred to on a number of occasions throughout this study. Given the time constraints of this research, two key documents<sup>1</sup> were selected for analysis. The analysis was performed by searching for the occurrence of some themes surrounding open data. The following chart illustrates the results.

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<sup>1</sup> Supporting Public Service Reform, eGovernment 2012 - 2015 (DPER) and Public Service Reform, 17th November 2011 (DPER)



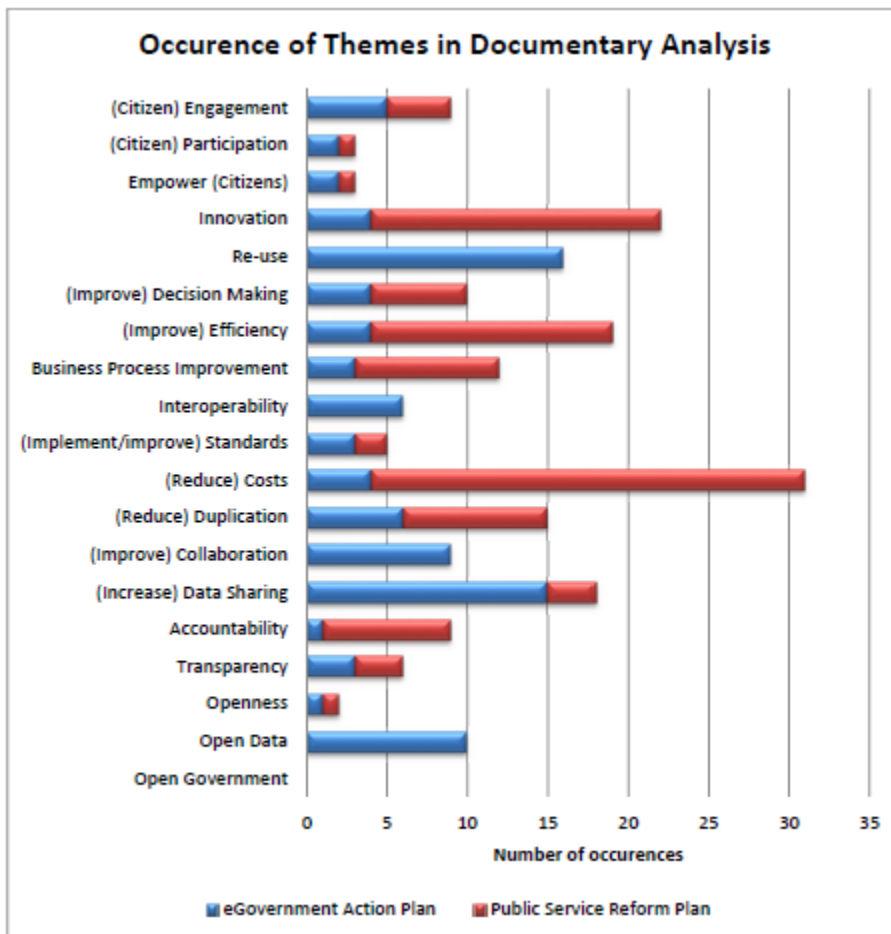


Figure 4.1 Occurrence of Themes in Documentary Analysis

Key findings from the documentary analysis are as follows:

1. While Open Data is included in the current eGovernment Action Plan, there is no particular emphasis on this openness or transparency in either plan.
2. Given the current budgetary constraints, it is unsurprising that the main driver for reform is cost reduction. However, there are surprisingly few occurrences of this theme in the eGovernment plan given the potential for eGovernment to reduce costs.
3. Innovation is one of the most frequently occurring themes and there appears to be recognition that innovation will facilitate reform.
4. Data sharing and re-use are two other themes with a high number of occurrences, demonstrating a focus on making the most of the resource of public sector information.
5. Making the business of government more efficient is another major theme that occurs in both documents.

6. Citizen engagement, participation and empowerment appear to rank lower in priority than many of the others given the relatively low number of occurrences of these themes in both documents.

The documentation findings are supported by the primary research from the case studies (see below). It is clear from the language used in the documentation that the primary drivers for reform are cost reduction, innovation and making government more efficient. Themes surrounding transparency and citizen engagement appear to be secondary when it comes to reform. This can be supported by sentiments from interviewees that opening up government data should be done for the economic potential, and not necessarily to improve transparency or citizen engagement.

#### **4.2 Findings from Interviews**

A total of 20 barriers to the released of open data emerged from the analysis of the semi-structured interviews. These were classified into six headings:

- Economic
- Technical
- Cultural
- Legal
- Administrative and
- Risk related.

Before describing these barriers, two terms used during the interviews are worth discussing briefly.

- The term organisational culture in this research was used to describe the understood rules of behaviour of what is acceptable and accepted as the norms and values. Although these unwritten rules are not formal they are absorbed and understood as the way things are done. Schein (1990) defines culture as “*a) a pattern of basic assumptions, b) invented, discovered or developed by a given group, c) as it learns to cope with its problems of external adaptation and internal integration, d) that has worked well enough to be considered valid and, therefore e) is to be taught to new members as the f) correct way to perceive, think and feel in relation to those problems*”.
- The term power was used to describe both expert power “*which accrues from special knowledge that is valued or essential in some context*” and information power which is “*based on a person’s access to data or facts*” (French and Raven 1959, cited in Bannister and Connolly 2008, p. 53).

The twenty barriers are illustrated as a fishbone diagram in figure 5.2 and described and in bar chart form in figure 5.3.

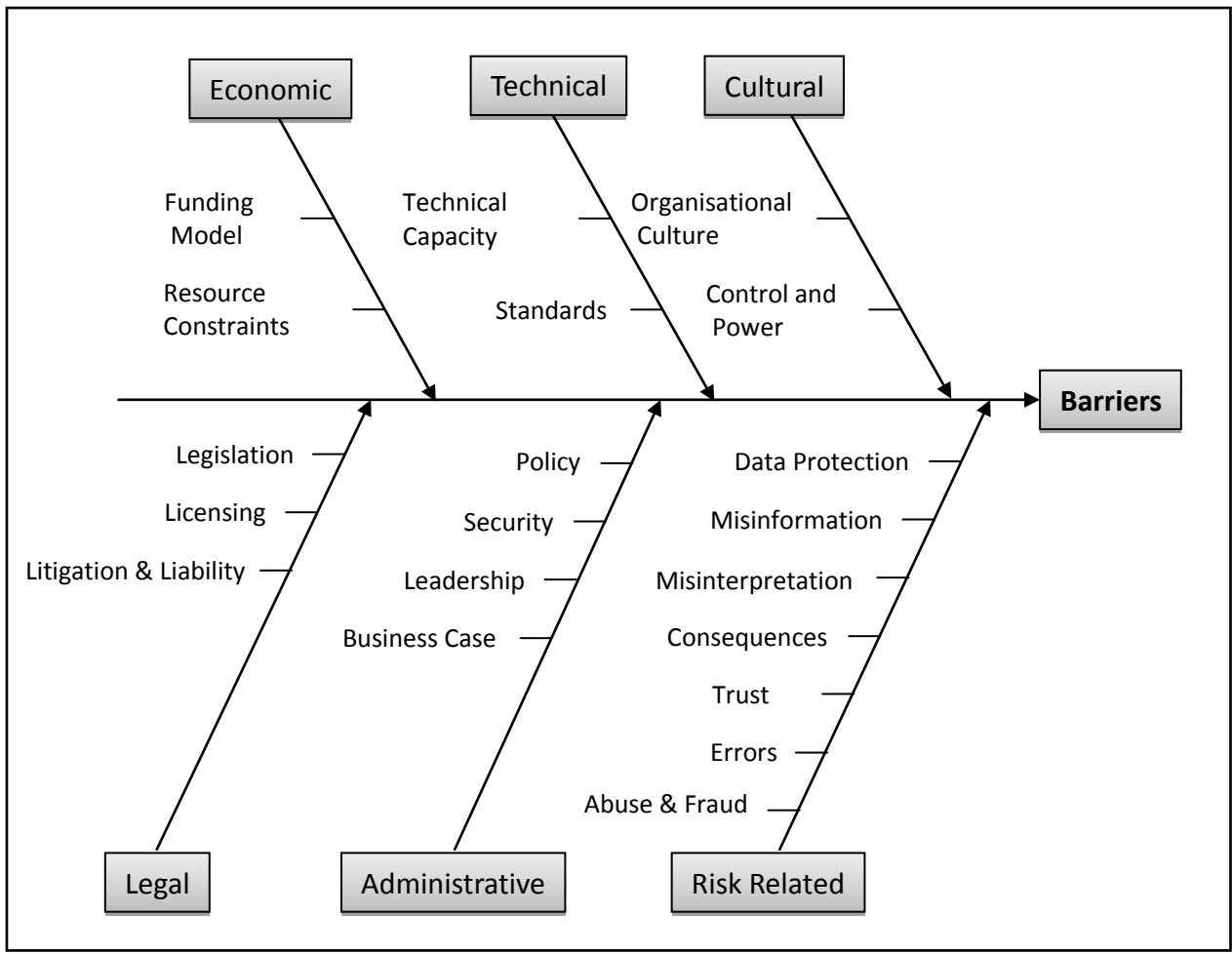


Figure 4.2: Fishbone diagram of barriers grouped by type.

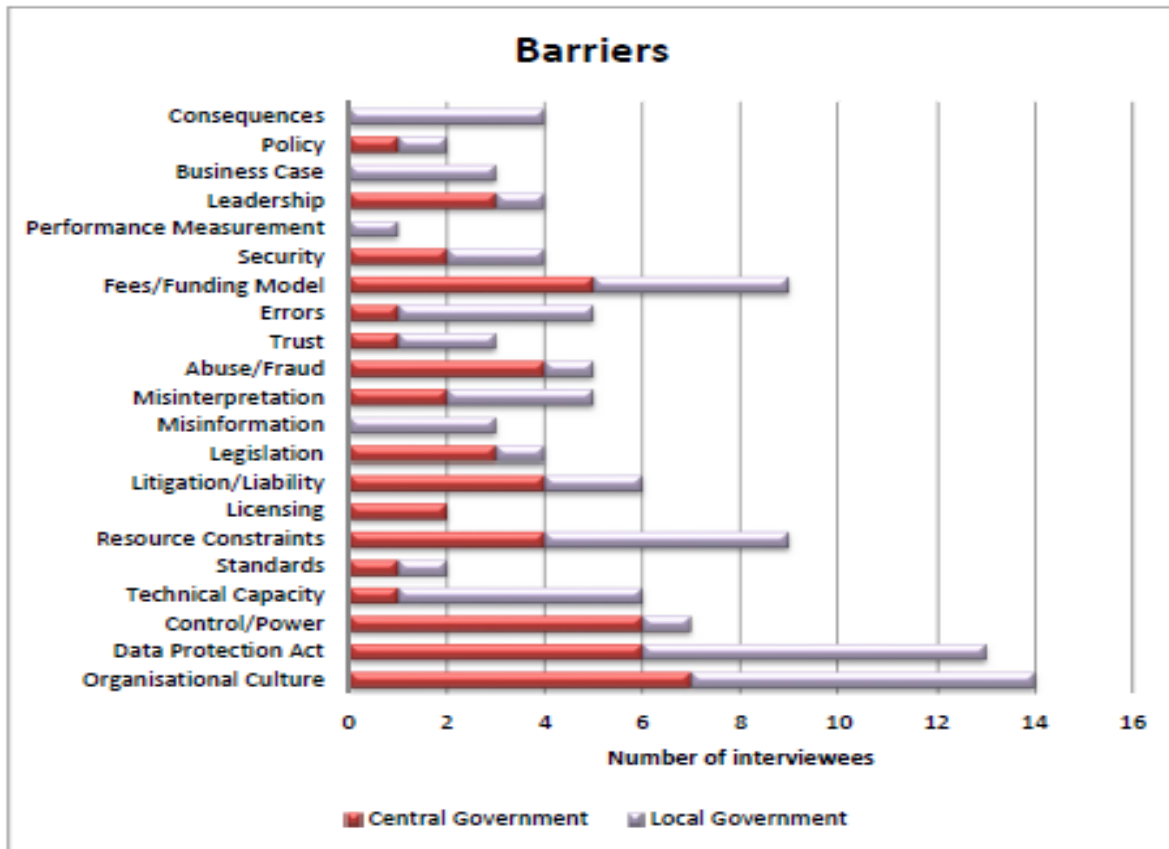


Figure 4.3: Barriers mentioned by source

It is interesting to note that, while many barriers were common among both central and local government organisations, there were barriers that were quoted mainly by one or the other. For example, in the central government case study, there was a greater emphasis on legal barriers. This may be explained by the fact that the core business of the agency studied was legal. On the other hand, in the case study of local government, there was a focus on the potential unintended or undesirable consequences that openness could cause and difficulties with misinformation and the press running with negative stories. This may be explained by the fact that local government provides more contentious services which garner much attention from interest groups and the media. Further case studies would help to identify if these contrasts are present on a wider scale.

The findings with regard to each barrier is in table 4.1 below.

The findings are discussed in the section 5.

<b>Risk Related Barriers</b>		
<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Data Protection</b>	<p>All interviewees, except one, mentioned that data protection in some way acts as a barrier to opening up data. A recurring theme was that there is a general concern about compliance with the Data Protection Act (DPA). Four interviewees believed that a lack of understanding of the Act means that organisations are uncertain whether they can share data with one noting that confusion around what can be released means. In the words of one respondent:</p> <p><i>“The easiest thing is to not make the data available. You’re not going to make any mistakes if you don’t make the data available”.</i></p> <p>One interviewee raised a concern that aggregated data, if opened up, could be combined with other data sets to reveal private information. Another believed that that the Data Protection Act was used as an excuse to control data and prevent it from being opened up.</p>	<p>Respondents are uncertain about the implications of the DPA and choose the perceived safest option which is not to release data. In some instances this may serve as an excuse for inaction.</p>
<b>Abuse and Fraud</b>	<p>Five interviewees expressed concerns that data may be abused in some way and potentially for fraudulent or sinister purposes. One interviewee noted that identity theft is a growing issue and that data opened up in the UK has in the past been exploited for this purpose. Another stressed the need to ensure whoever receives data has their own audit procedures in place to prevent abuse of the data. The concern from those in central government originated from the fact that the State guarantees their work. As one informant observed:</p> <p><i>“The challenge then is that again somewhere between your delivery and it being made available through a third party there is some opportunity for corruption once you give it out to someone you don’t know what way it is</i></p>	<p>As the state agency concerned is part of the justice system, this concern is understandable. There may be an element of availability bias (REF) underlying this barrier.</p>

	<i>going to end up with the consumer”.</i>	
<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Misinformation</b>	<p>Three interviewees cited fear of the media running a story based on misinformation or running with negative stories which are difficult to reverse as a barrier to openness. There was a concern about “<i>lazy</i>” journalism based on Freedom of Information (FOI) requests which deters people from releasing data more openly. Even though information can be sought under FOI at the moment, opening up datasets appears to facilitate this type of journalism with one interviewee noting the attitude is one of “<i>Why give them more ammunition that we know they are firing back at us?</i>” and the public service doesn’t have a good track record of fighting back to counteract bad press.</p> <p>It was pointed out that trying to get a negative or inaccurate story in the media reversed is impossible because of the “<i>gotcha</i>” culture within the media. One participant believed that public bodies are targeted by some members of a “<i>toxic</i>” media and no one brings them to account for it and that good stories are the ones that are written based on data, but highlights that an accepted pattern has emerged that:</p> <p><i>“There’s no such thing as a good interesting story, unless we won a big national award, but that then gets crowded out by someone’s pipe bursting!”</i></p>	<p>The public service is highly concerned about the problem of media misuse of poor information (the ‘gotcha’ culture). This concern is aggravated by the limited ability to correct or counter stories in the press. The old adage about the press, first simplify, then exaggerate is not entirely without a basis in fact. Civil servants feel particularly vulnerable to this threat.</p>

<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Misinterpretation</b>	<p>Five interviewees raised a concern over the potential for open data to leave the data open to misinterpretation, particularly if the limitations of the data are not fully understood. The common thread was that data may be sufficiently accurate and fit for purpose for the organisation's own use, but once they are released openly, third parties may misconstrue data deliberately or accidentally.</p> <p>Some members of the public may believe that if data is opened up, that it must be 100% accurate to the level they require for whatever purpose they wish to reuse it and this may not always be the case.</p> <p>One respondent pointed out the potential for a misread of a situation if someone interprets datasets which have been combined, but they are not armed with other supporting information.</p>	<p>This is a particularly contentious issue. Politicians, the media, interest groups and so on often choose selective data and put a certain 'spin' on it. Other data gets misinterpreted in ways that can be harmful to individual citizens or to public policy.</p>
<b>Trust</b>	<p>Although many respondents voiced concerns over what might happen to their data once it was opened up, only three interviewees specifically mentioned the lack of trust in terms of what others might use the data for as a barrier to openness.</p> <p>One respondent specifically mentioned trust as one of the main issues with interagency data sharing and that there may be some data that organisations will not open up to the public but could share with certain government agencies if certain conditions were set on its use, overcoming the trust issue.</p>	<p>It is interesting to note the concerns expressed about trust. Openness is seen by many as an antecedent to trust though Grimmelikhuijsen (DATE) has suggested that more transparency can lead to less trust in certain circumstances.</p>

Category/Barrier	Interviewee Observations	Summary/Finding(s)
<b>Errors</b>	<p>Five interviewees believed that the fear of errors being discovered or perceived inaccuracies being queried is a barrier to opening up data. One respondent from central government focused on the fear of large numbers of queries being raised about perceived inaccuracies, even though the metadata may explain limitations in relation to accuracy.</p> <p>The local government responses related more specifically to fear of errors in their data coming to light and the possibility of staff being held responsible for minor errors, or that their data simply may not be as correct as it needs to be for release and reuse into the public domain. They believed that, even with a warning about potential inaccuracies, they would still be held responsible and bear the brunt of queries. One observed, however, that:</p> <p><i>“If there are mistakes in the data then you need to know about them as you use them to support your decision-making process”</i></p> <p>and that in opening data up to scrutiny by many eyes there are opportunities to fix it. This barrier could be linked with the previous two of misinterpretation and misinformation as they are all related concerns.</p>	<p>Within the culture in the Irish public sector, in particular the civil service, one of the worst mistakes one can make it to ‘embarrass the minister’. This is aggravated by the media grossly exaggerating the significance of errors to the point of hysteria.<sup>2</sup></p>

<sup>2</sup> An excellent example of this occurred at the time of writing. A public children’s hospital in Dublin incorrectly warned 18 families that their children might be at risk of infection due to a faulty medical device. This was due to a human error made in misidentifying the device in question and in the anxiety to get the information out quickly. Writing about this, Carol Browne, a journalist in the main Irish daily newspaper, stated that “It represents staggering incompetence on the part of the hospital at every level”. Irish Independent, 26<sup>th</sup> July 2013.



Category/Barrier	Interviewee Observations	Summary/Finding(s)
<b>Consequences</b>	<p>Four interviewees raised concerns about there being unintended or undesirable consequences to releasing certain types of data. While there may be no barriers in place such as data protection or security issues, there may be a social impact as a result of data release.</p> <p>An example given was that of halting site<sup>3</sup> and social housing<sup>4</sup> planning data and if that data was released that it would give those in the middle classes, who already feature in public consultation processes, sufficient information in advance to lobby against having the Local Authority provide these services in their particular area. The potential beneficiaries of the services never really participate in the public consultation process and providing those who already participate in public consultation with further data would mean getting these measures approved even more difficult. One observed that:</p> <p><i>“We may actually be perpetuating a degree of inequity in society by living even more tools to the elite and the middle classes to prevent measures that they don’t approve of”.</i></p> <p>Another respondent highlighted the risk of an incremental approach to Open Data leaves an opening for interest groups to start <i>“putting walls up”</i> to prevent it from progressing.</p> <p>A common theme in the interviews from local government was the belief that the political environment they work in appears to allow interest groups too much sway and influence in decisions that impact on the wider</p>	<p>There is a growing awareness, reflected in the interviewees comments, that it is not always possible to foresee the implications of data release. In particular data which is anonymised before release may, in certain circumstances, be de-anonymised by modern analytics software. The fact that some groups are more adept at using data than others can put a weapon in their hands which has social consequences. The digital divide may also give privileged groups an further unfair advantage in certain circumstances.</p>

<sup>3</sup> A halting site is a facility for itinerants (i.e. indigenous Irish travelling people similar to gypsies) to park their caravans.

<sup>4</sup> Social housing is local government subsidised housing for poorer families. Such houses are sometimes located within an otherwise private housing development.

	population.	
<b>Cultural Barriers</b>		
<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Organisational Culture</b>	<p>All interviewees held the belief that the level of openness of an organisation can be influenced by its culture.</p> <p>Five interviewees also indicated that the culture of an organisation is dictated from the top down (from senior management); four of these were from local government. Three interviewees, all from local government, indicated that competing subcultures can exist between individual departments in the same organisation.</p> <p>Four interviewees, all from central government, believe that the culture within the civil service, or specifically their own organisation, is greatly influenced by the statutes and regulations that the organisations work under. One interviewee, from central government, stated a belief that the culture within the civil service is more cautious. One interviewee, from local government, stated a belief that openness can lead to more defensive actions to be taken internally.</p>	<p>It is interesting that this often understated problem is widely identified by respondents. Public servants learn the culture by osmosis and this can manifest itself in values of defensiveness and secrecy. In an organisation without a tradition of openness, this can be difficult to change.</p>
<b>Control and Power</b>	<p>Half of the interviewees held the belief that the potential loss of control of their data, potentially leading to a loss of power, causes organisations to guard their data. Some believed it was down to a case of “<i>empire building</i>” and there was a concern that if data had to be opened up, power would be lost because information is power.</p> <p>The central government perspective was that there appeared to be a reluctance to open up data, even within government, because it would highlight areas of duplication of effort leading some organisations to lose control over some datasets completely by having to hand power and</p>	<p>It is often said that information is power and handing information to others can change the nature of a power relationship. People and organisations tend to be protective of their own power.</p>

	responsibility over to another organisation and in some cases potentially losing their reason for being.	
<b>Performance Measurement</b>	One interviewee was of the opinion that some people wonder if someone gets access to their data, are they trying to make comparisons, or is it about benchmarking to increase productivity and that this would act as a barrier to opening up data.	It is interesting that the comment was only made by one respondent.

<b>Economic Barriers</b>		
<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Fees and Funding</b>	<p>A majority of interviewees, nine in total, noted that existing fee structures and funding models within the public sector act as a barrier to opening up government data. The main issue raised was the potential loss of revenue, particularly given that the expectation is that the data would be provided for free, or charged at the basic cost of making the data available.</p> <p>For organisations funded by central government, this loss of income is not as problematic as for public bodies that are self-funding; the Ordinance Survey was cited as an example of an organisation with high value, high demand data, that is prevented from being made available openly because of the organisation's funding model.</p> <p>Even where organisations might be funded centrally, there is sometimes a belief that, if their data is valuable, why should they give it away for free and potentially for others to make a profit from. Interviewees from central government highlighted that their charging system is governed by a fees order, in which there is currently no provision for Open Data services.</p>	This raises interesting problems for certain state agencies whose primary source of incoming is selling data. A good example is the Ordinance Survey.

<b>Resource Constraints</b>	A majority of participants, nine in total, drew attention to the fact that there is cost and effort involved in providing Open Data. The view was that making data available was a drain on scarce resources and a number of interviewees pointed out that it was becoming more and more difficult to justify given the reduced budgets and staff allocations each of the organisations had to deal with <i>“\$our budget is down 25% our staff members are down closer to 30% so we just don’t have the resources”</i> .	This is a widely reported problem and is exacerbated by the current economic climate.
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<b>Technical Barriers</b>		
<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Technical Capacity</b>	<p>Six interviewees raised technical capacity as a barrier to making data more open in that some organisations lack the technical capacity or specialised expertise required to open up their data. The issues ranged from having to deal with legacy systems which make it more difficult to publish data in a usable format, to a lack of staff with the specialised expertise required to anonymise data or simply make dynamic or complex data systems available in an open format for reuse and these specialists are in short supply and high demand.</p> <p>The Household Charge<sup>5</sup> was cited as an example of how data had been opened up to the Local Government Management Agency by a number of departments and state bodies, but there still appeared to be issues cleansing the data, understanding the structures and combining it to get the information required to issue letters to the relevant households. One interviewee pointed out that it wasn’t just the technical capacity of their own organisation, but a concern about the technical capacity of other government organisations who might store data that has been made</p>	Experience has taught many public service managers about the practical and resource problems of making data, particularly data that is not in good condition (e.g. incomplete, not fully accurate or lacking in integrity) available.

<sup>5</sup> The Household Charge was a one-off property tax designed as a pre-cursor to a full property tax introduced in 2013.

	available openly (within government) and that their technical expertise, or lack thereof, may lead to their data being stored in a less secure, more vulnerable environment.	
<b>Standards</b>	Two interviewees cited a lack of standardised data as being a barrier to Open Data with one interviewee stating that, even if you can get the data opened up, time and resources are spent converting it to the format in which it might be required. This interviewee cited lack of standards as a <i>“huge barrier”</i> and stated that organisations who are supposed to be driving standards are not doing enough.	Given that most of the interviewees were ‘non technical’ managers, the small number of comments on problems with standards is unsurprising.

<b>Legal Barriers</b>		
<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Legislation</b>	<p>Four interviewees cited the current legislation as a barrier because providing bulk Open Data may require legislative changes or transposition of EU directives. One participant noted that:</p> <p><i>“The legislation is always so far behind ICT”</i></p> <p>and when much of the current legislation was introduced there was no provision for services like Open Data. Consequently more legislative changes, similar to the legislation introduced to enable interagency sharing of data for the purpose of collecting the Household Charge, needs to be introduced.</p> <p>Two key areas were discussed in relation to legislative change; the Data Protection Act (currently a barrier to sharing data within government – see above) and the Fees/Funding Models (implementing Open Data would require legislative change to facilitate any changes to fees orders and possibly other charging models).</p>	<p>Irish law can be a considerable barrier to making data available. Changing the law is not easy for a number of reasons (see section six).</p>
<b>Litigation and Liability</b>	<p>Six of the interviewees raise the issue of fear of litigation or liability if personal data was released in error, or if data released through Open Data was misused for fraud, or misinterpreted by third parties to make business decisions.</p> <p>All of these lead to a concern of the originator organisation ultimately being liable and taken to court, with the risk of damage to the organisation’s reputation and the risk of liability for compensation which would be paid for by the State.</p>	<p>This is a reasonable concern. There may be sensitive information in files and there have been errors in data release both in public and private sectors in recent years.</p>

	The main difficulty appeared to be around the terms and conditions of use and the difficulty in perpetuating these terms and conditions throughout a process which could include an unknown number of third parties.	
<b>Licensing</b>	<p>Two interviewees highlighted the importance of ensuring robust licensing is in place before opening up data, to ensure liability is limited.</p> <p>One noted that the data held by their organisation could be made available “quite easily” under bulk licensing and would be of use to other organisations, but later raised a concern that once data is opened up, is it completely open or subject to license and would that license ensure that the organisation’s liability ceases once the data has been opened up? The other interviewee cited implementing robust licensing as one of the main challenges to Open Data.</p>	The need for ‘terms and conditions’ in use of released data is, again, not an unreasonable concern. This concern reflects conservative and defensive historical attitudes to government data still found in many government departments.

<b>Administrative Barriers</b>		
<b>Category/Barrier</b>	<b>Interviewee Observations</b>	<b>Summary/Finding(s)</b>
<b>Policy</b>	<p>Two participants cited lack of policy as a barrier. One cited it as the principle barrier because organisations need to make the decision that they will be an open organisation and implement policy to that effect and that once it becomes part of the corporate plan it becomes easier to implement.</p> <p>There is a need to know exactly what the policy is and have a good idea of what needs to be done:</p> <p><i>“...because it’s not that it can’t be done but it needs to be done right”.</i></p>	<p>This is a typical civil service concern – the worry that the situation regarding data release could become anarchical. This is related to the questions about power and control cited above. There is also a risk of inconsistent policies across the public sector.</p>
<b>Security</b>	<p>There was agreement among four interviewees that there may be security or defence issues preventing the release of some types of data in an open format. One interviewee noted that this is something that has been acknowledged in other countries where Open Data has progressed to a greater extent than in Ireland.</p> <p>An example was given of water data in local government which has not yet been released because of the fear that it could be used for sinister purposes. Nevertheless, it was agreed that few datasets would actually fall into this category and so this barrier should not be one that prevents the majority of government data from being opened up.</p>	<p>There is a concern that certain seemingly innocuous data could be used by terrorists or criminals.</p>
<b>Leadership</b>	<p>Four interviewees cited a lack of leadership or political will with a clear plan driving Open Data as a barrier.</p> <p>The view was that there is a lack of information available about Open Data and there is confusion about exactly what is required of organisations and that while there is a directive from the EU about PSI reuse, there is no strategy with clearly defined guidelines for organisations to follow.</p>	<p>This is related to the point about policy. Managers are concerned that an absence of clear leadership leaves middle or junior managers with difficult decisions.</p>



	<p>This is not just an issue in terms of opening data to the public but also in opening data for interagency sharing, where recently there were legislative changes to allow some opening up of data between certain agencies for the immediate requirement of collection of the Household Charge, but the opportunity of looking at legislative changes to provide for interagency data sharing on a wider scale seemed to be lost in terms of looking at legislative changes to provide for interagency data sharing on a wider scale.</p>	
<p><b>Business Case</b></p>	<p>Three interviewees cited the lack of any convincing business case or appreciation of the value of Open Data as a barrier. This means that it is simply not seen as a priority for many because people just don't see the value of it. One interviewee observed:</p> <p><i>"You really have to convince the data owners that the business case is there."</i></p> <p>and if no convincing business case for doing it is produced then organisations will not release their data. One participant highlighted the lack of understanding that someone else may need to use organisations' data in a different way, to aggregate and express it differently. The lack of understanding of the potential value of their data to someone else needs to be addressed. Another interviewee suggested that people see it as <i>"another add-on like health and safety"</i> that take up almost as much time as the core work of the organisation, rather than a useful tool.</p>	<p>This is an interesting response and possibly reflects a lack of awareness of the possibilities that open data open up. See section six for comment on this.</p>

Table 4.1: Description of findings

## 5 Discussion

Of the twenty barriers identified in this research, three are of particular interest.

The first of these is resource constraints because it permeates several of the other concerns. At the time of the research (and of writing) reducing staff numbers and budgets are likely to have amplified this perception. Lack of any formal standards for non-spatial data means that even when data are shared, the potential for efficiencies or effectiveness is reduced by time spent trying to understand and manipulate the data into the required format prior to release. The perception is that the effort involved in doing this would be considerable and that the resources to do this simply are not available.

The second concern is about the potential loss of revenue. This has been identified as a barrier by other researchers (e.g. Janssen *et al* 2012). Whether Open Data can and should be charged for is a major concern. The funding models of certain agencies would need to be reviewed if the government is serious about implementing Open Data on a free of charge or marginal cost basis. Legislative change will be required where Fees Orders are prescribed by government and funding models for bodies in the wider public sector with high value, in-demand data and that are currently self-funding would need to be changed.

This third is concern and uncertainty surrounding compliance with the Data Protection Act when releasing Open Data. This is perceived as one of the greatest barriers to openness and this was one of the most commented on obstacle to data release. Several informants again raised concerns about the human effort involved in ensuring that data release did not contravene the Act. While data which was not sensitive could possibly be released at low cost, any data which required vetting or redaction could be prohibitively expensive to release unless the cost of doing this was paid for by the user. It is worth noting in this context that when the Irish government first enacted Freedom of Information (Fol) in 1997 there were no or minimal charges for Fol requests. It quickly became clear that the huge volume of demand that resulted was imposing significant costs and administrative burdens on public bodies. Eventually the government both reduced the scope of the Act and introduced charges to both help cover costs as well as to reduce the volume of frivolous and vexatious requests.

Of the six categories that emerge from this research, two and technical map onto the categorisation of Janssen *et al* (2102). Barriers classified as institutional and task complexity by Janssen *et al* are here classified as cultural and administrative. Use and participation to some extent overlap with Janssen *et al's* concept of task complexity and information quality. There is thus some correspondence, but at detailed level considerable divergence.

In addition to these, a number of specific issues were raised by informants.

### *The Role of the Media*

The research findings of this study can be linked back to many of the areas covered by the literature review. The findings go some way in supporting the sentiments of Worthy (2010) and Hood (2007)

et al. that the media plays a role in fostering a fear of transparency or openness by running with more negative stories. While discussing the potential of Open Data, not one of the interviewees stated a belief that data released in this way would contribute to increasing trust in government. In fact, the view of some was that the media would be selective in the data they decide to use in stories, running with negative commentary, thus potentially increasing the chance of mistrust in government. As such, there is nothing in the findings to support the view of authors such as Ball (2009) that transparency increases trust in government. The findings are more in line with those of de Fine Licht (2011), Grimmelikhuijsen (2011) and Bannister and Connolly (2011).

### *Organisational Culture*

O'Neill (2006) asserts that it will take time for some officials to get used to a culture of openness in place of secrecy and the findings of the interviews support this claim. The findings also support the views of Florini (2004) who suggests that people may be reluctant to disclose information that may be used against them, and the views of Hood (2007) who believes that blame avoidance is a strongly entrenched feature of organisational behaviour and can present major obstacles to achieving the objectives of transparency. The findings of this research are consistent with his view that this involves changes to the basic organisational values and there are many accounts in organisational theory demonstrating that this level of change is difficult to effect.

Respondents felt that the organisational culture, which is conservative about the release of public data within the public sector, needs to be addressed from the top down if it is to change. The focus needs to be on educating senior decision makers and on getting them to embrace a culture of openness and collaboration. This is far from the current state of affairs. The Public Service Reform plan promises to “*embed a strong culture of innovation, change and managed risk across the Public Service*” (Department of Public Expenditure and Reform 2011, p.5), but there is little evidence of this happening so far.

### *Transparency*

The potential for transparency to make negotiations lengthier and provide the potential opportunity for disruption as noted by Ball (2009), de Fine Licht (2011) and Bannister and Connolly (2011) was also noted by a few of the interviewees from local government where examples were provided of the potential for contentious decisions to be hindered by interest groups. Their comments also echoed sentiments of Mol (2010) who highlights the possibility of transparency to become an instrument of inequity by empowering those who are already powerful. These sentiments also tie in with Heald's (2006) point that there can be difficulties in juggling varieties of transparency to produce the best outcome. While transparency in real-time might not be problematic for certain types of information, some of the examples provided by interviewees were of information that would require transparency in retrospect.

Heald (2006), Hood (2007), Worthy (2010) and Bannister and Connolly (2011) also highlighted the problem where a continuous obligation to disclose the internal processes of the organisation increases the likelihood of them being modified in a defensive way while reducing the time for the organisations to focus on productive activities. While most respondents felt that the much data

could be released without causing great difficulty, they echoed the views of Florini (2004) and Coglianesi (2009) that there will always be information that will need to be kept secret.

### *Information Complexity*

Interviewees also agreed that, if data were to be released, citizens may need visualisations to understand it. Opinion was divided about whether these visualisations should be provided by the public body releasing the data or whether the private sector should instead be encouraged to build something out of the data, providing a visualisation at the same time. This supports the views of Etzioni (2010) and Mol (2010) who note that information released through transparency needs to be comprehensible and Heald (2006) who maintains that for transparency to be effective, it needs receptors capable of processing the information released, and Dingwerth and Eichinger (2010) who raise the issue that transparency policies are unlikely to succeed where information released requires a high degree of technical knowledge from the reader. If civil society cannot use the data, it will fail to empower.

### *Power*

A new topic which was not emphasised in the review of literature, but was highlighted by a number of interviewees, was the topic of power. Some participants believe there is an element of “empire building” by retaining control of information to keep hold of power similar to that described by Bannister (2005). They believe that for some, there is a fear that if all public sector data is catalogued and it is discovered that some bodies are holding similar information, that it could result in the loss of control of their data with control passing to another organisation. In some cases, it was noted that this could lead to that organisation’s entire reason for being to be called into question.

## **6 Conclusion**

Open data is a concept that needs careful definition. In the view of some libertarians, the vast data repositories held by government should be accessible to any citizen in an easy to comprehend and easy to manipulate manner. This is one of what Janssen et al (2012) have categorised as the myths of open data. In practice there are many barriers to making data available. This paper has looked at these barriers from one perspective, that of senior managers.

Another interesting thing to emerge from this research is the different in perspective on the role of open data. There is a large selection of literature on transparency (some of it quite hyperbolic) about its potential to increase trust, civic engagement, counter corruption and increase accountability. This research suggests that, from inside Irish government at least, transparency is not seen as a priority. As far as top public managers in Ireland are concerned, the priority is the economic potential of open data to reduce costs and provide the private sector with a tool to enable it to generate employment and revenue. This appears to be in line with the message coming from the EU as the EU eGovernment Action Plan that open data:

*"supports the transition...to a new generation of open, flexible and collaborative seamless eGovernment services...that will empower citizens and businesses...joint action on eGovernment can*

contribute to overcoming the current economic crisis by using public resources more efficiently and reducing public expenditures"

(European Commission 2010, p.5).

It has been well established at this stage that, even where data are readily available, there are numerous impediments to its usefulness. Other scholars have suggested that there may be unforeseen risks in data release which could have undesirable social consequences. It is in the latter context that the views of senior public servants are important to understand. While the public service and the civil service in particular are sometimes painted as conservative to the point of being reactionary and obstructionist, many of the concerns expressed during this research are well founded. Senior civil servants are guardians of the public interest; it is, to paraphrase Kipling, sometimes their job to keep their heads when all around are losing theirs and blaming it on the state. They have the unenviable jobs of trying both to pre-empt the law of unforeseen consequences and to protect the public purse. The concerns that they have and the barriers that they identify need to be addressed rather than dismissed.

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