Proactive Transparency and Open Data:
A Tentative Analysis

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Abstract. In this paper, we discuss the topic of governmental transparency, and more specifically in relation to Open Data. We look at governmental transparency in terms of channels, benefits, context, directions, etc., and we argue that there is an emergence of new intermediaries in the domain of governmental transparency, made possible mainly through information and communication technology. We then use the concept of public utility to integrate transparency and open data in a larger governmental perspective and we give a few examples of the use of open data to that effect. We propose an approach to support proactive transparency based on Open Data, based on a "lens" to be used to analyse transparency and open data in given contexts.

Keywords: Transparency · Open data · Intermediaries

1 Transparency and Information Technology

Transparency is a broad concept in social sciences. Derived from its literal definition, i.e. the physical capacity of an object to let light pass through, it means that a system or an organization lets third parties consider their internal knowledge, processes and decisions. According to [1] transparency can be applied to many areas: organizational transparency, accounting and budgetary transparency, transparency of government action and responsibilities, as well as documentary transparency. In this paper, we will discuss the topic of governmental transparency, and more specifically in relation to Open Data. Indeed, many argue that access to government information is essential for a working democracy, along with [2], who called upon Thomas Jefferson and his "information as currency of democracy" to declare that "the public must know what information is available from which government body, and how and where this can be located...". These ideas have found their way in many national regulations around the world. In 2010, more than 80 countries had passed Freedom of Information Acts or access to information laws and 50 additional countries were in the process of doing so [3].

[4] identifies 4 primary channels supporting government transparency:

- Proactive provision of information;
- Answers to precise requests;
- Public meetings;
- Leaks or disclosures (whistleblowing).

Here it will be only a question of the proactive provision of information, an approach greatly facilitated by information and communication technology and particularly by the Internet. [5] make a brief review of the literature on the subject and conclude that the overall trend is the use of eGovernment to reduce costs and facilitate access to information, thereby supporting transparency and accountability, or even reducing corruption. The cases of "whistleblowing" or of denunciation on the Internet, of which the best-known example is probably WikiLeaks, will not be discussed in this contribution.

To show the benefit of the use of ICT in a democratic perspective, [6] proposes three analysis scenarios:

- Minimal use of ICT: this would only enforce existing laws more efficiently, to collect, process, store and make available information.
- A revolutionary approach: ICT would allow a move towards an ideal type of deliberative democracy, where citizens can participate directly and transparently in decision making, based on objective and easily accessible data.
- A gradual transformation, where elected officials and public sector managers are "reactive" in relation to feedback and knowledge sharing enabled by ICT. A politician who relies on reading blogs to get an idea of public opinion and decides accordingly constitutes a simple example.

Regardless of the scenario that is played out in the coming years, the fact of using ICT as a support for transparency will have an impact. Before proposing a detailed analysis of what he calls "computer-mediated transparency," [7] traces the positions of two opposing camps. Proponents of computer-mediated transparency believe that it will provide better access to information for citizens, and thereby contribute to a more rational and democratic society. Critics of this form of transparency argue that the provision of a mass of unsorted or incorrect information will simply increase uncertainty and reduce public trust in institutions. Nonetheless, [7] argues that currently transparency is in any event mediated, in general by the press, radio or television and increasingly by the Internet. In contrast, face-to-face transparency, where citizens attend political meetings, is tending to disappear. The author gives an overview of the main differences between these two modes of transparency, including:

- The direction: mediated transparency is unidirectional, face-to-face transparency is bidirectional. Indeed, if the citizen knows who said what during a council meeting he attends, the counsellor can also know who was in the seating area to listen. During the broadcast of these same sessions on television or on the Internet, elected officials do not have any means of knowing who is listening to them.
- The context: data are sometimes available "in bulk" on the Internet, without any information about their meaning or the purpose for which they were collected. Conversely, a public administration employee who presents the same data should be able to explain the context of their use.
- The structured and quantitative nature of data that computers are capable of processing: a computer has tremendous capacities for the treatment of statistical data but is not necessarily able to interpret certain non-formalized elements. [7] gives the example of OPEN, a Korean system for monitoring administrative procedures, which

shows very effectively how many files were processed in a given time, but cannot explain why a decision was taken.

Without entering an academic discussion on the impact of ICT on transparency, it should nevertheless be noted that the relationship between transparency, technologies and trust are ambivalent. Optimists will see almost unlimited possibilities to improve democracy, pessimists will hold up the threat of a "Big Brother" type of society or of information overload, and pragmatists one tool among others to improve transparency. To borrow a comment from [8], "Information and communication technologies have been touted as the cure for all ills, from the rigid and silo architecture of public administration to the fall in participation rates in our democracies." [8] do not however criticize the technology, but they believe that eGovernment should not focus only on technology but rather explore in depth the flow of information within the public sector. In addition, they find that eGovernment has developed according to a transactional perspective, namely the simple and structured automation of routine services. They thus propose to widen this perspective and to integrate an informational vision of the State.

Regardless of the approach adopted in relation to ICT, it is clear that it has an impact on the functioning of the State in general, and in particular on transparency. To investigate this latter dimension, [6] uses a continuum, which goes from the simple use of ICT to make information available to passive citizens to tools to enable active citizens to participate fully in decision-making. Without providing definitive answers about the impact of ICT on transparency, let us mention some key points to conclude this section. The first one is the emergence of new intermediaries. [9] discuss the importance of NGOs and private companies that have access to government data and develop new or improved services. [6] talks about the arrival of "ersatz-Intermediaries", i.e. engaged citizens who are evaluating available information and issue reports, for example on their blogs. The wiki GuttenPlag counts thus more than 1'200 extracts plagiarized in the thesis of doctorate of the baron Karl Theodor Zu Guttenberg, who resigned of his post of German Minister for Defence after these charges of plagiarism [10].

Traditionally the appearance of new technologies (telegraph, telephone, television) has benefited the powers that be: the latter have used them as tools for control or propaganda [11]. There is no consensus however at the present time about the use of blogs, citizen journalism or social media such as Twitter: does it neutralize or counterbalance the media industry [12], allowing it to circumvent censorship, as seems to have been the case during the Arab Spring [13], or on the contrary does it allow governments to monitor or imprison dissidents? Cases are not lacking, we can mention for example that of a Chinese blogger arrested and placed under house arrest in August 2011 [14]. Are governments overwhelmed when it comes to filtering content from social media [15] or is it enough to unplug the Internet in the case of a serious crisis, as was the case in Egypt [16]? What is certain however is that the traditional barriers to ICT use also exist in the context of transparency [5]: usability of tools, computer skills, infrastructure problems, availability of Internet access, etc.

Finally, ICTs have the same general impacts on transparency as they have had on trade or administrative services: distance in time and space [7], to the effect that exchanges do not occur in a unit of time and place; availability 24 h a day, 7 days a week

[17]; potential cost reductions and economies of scale [18]. The topic of ICTs in government is discussed in more detail in the next section.

2   Government and ICT

Different "labels" apply to the use of information and communication technology in the public sector: electronic or online administration, eGovernment, Government 2.0 or even "Open Government". Without entering a thorough discussion of what these concepts cover, it is all the same necessary to position them before going further. Online administration, or eGovernement, relates to the development and the provision of electronic administrative services, mainly in a managerial approach [19]. Government 2.0 or Gov 2.0, is a term that was coined by symmetry with Web 2.0 [20]: it thus refers to the application of key concepts of Web 2.0 to the functioning of a State, namely co-creation, sharing, user experience, etc. The founding text of [21] provides a good introduction to Web 2.0. Quite quickly, some have questioned whether it was a fad, destined for oblivion, or if Web 2.0 contributions were positive and concrete, such as [22]. The Open Government approach was launched by President Obama, who on in his first day in office signed a Memorandum on Transparency and Open Government [23]. This gave 120 days to the Department of Management and Budget to pass a directive emphasizing transparency, participation and collaboration in government, which was done on December 8 with the Open Government Directive [24]. The term "Open Government" then spread like wildfire across the world and is used generically for all projects within the public sector which include the three dimensions: transparency, participation and collaboration.

[20] made a brief review of the literature on expectations of Government 2.0: these range from improved efficiency and effectiveness to public awareness in public policy, from the possibility for citizens to give their opinion, or to participate in solving collective problems. The author paints a mixed picture for real improvements in transparency and openness by asking whether it relates to a glass that is half full or half empty. Moreover, [5] believe that excessive enthusiasm for technologies known as 2.0 can only lead to failure in a government which still functions in mode 1.0. [25] have meanwhile not wished to dwell on the term "Open Government" which they consider ambiguous, they offer however a typology of the stakeholders involved:

- Proponents of transparency consist of researchers, associations, or activists, who believe that to "shed light" is the best way to control government action and inspire public confidence.
- Futurists have a technological vision of Open Government and are inspired by the philosophy of free and open software (Open Source).
- Democrats see in Open Government a means of making society more democratic, allowing a more direct involvement of citizens.
- Bureaucrats focus on ICT and openness in order to evaluate the performance of the public sector.

This typology is obviously based on "ideal types", but it provides an interesting and accessible perspective on the potential contributions of Open Government. Whatever the term used to describe the use of ICT in administration and government, it is certain that the spread of the Internet, "smart" phones, as well as tools such as Facebook, Twitter, YouTube, Wikipedia, has an impact on the industrialized society. It is not appropriate to make a sociological analysis here, some authors such as [5] note the gap between the technology used day to day by citizens and public policy.

Before moving on to more concrete examples and in an attempt to reconcile the perspectives presented above, let us consider the work of [19] who argue that the government 2.0, transparency, collaboration and participation are only means to serve a larger purpose, public utility. These authors consider in fact these means as "utility generators", just like efficiency or effectiveness. They also offer six measures of public utility, in terms of financial, political, social, strategic, and ideological impact, on public opinion in matters of trust and legitimacy.

This discussion of the relationship between information technology and communication, transparency and the state, was to enable the reader to understand the issues and challenges faced by a proactive approach to the provision of information, in particular as regards the contribution to the public good and the gap between technology and public policy. The following section illustrates them in a more concrete way.

3   Open Data

According to [26], the "Open Data" movement was born in the mid-1990s in the North American academic world. The basic idea was that researchers share their experimental data. It was taken up again in 2003 by the creators of the Open Knowledge Foundation and in 2006 by those of the Open Data Foundation. These associations promote the use of standardized metadata and interchange formats, to maximize the potential of reuse of these open data.

Both the Open Knowledge Foundation and the Open Data Foundation have defined criteria, respectively eleven [27] and eight [28] to check whether data are considered open and free for use. These criteria are well documented on the websites listed above and it does not seem appropriate to list and describe them here, but it is particularly necessary that the data are complete, raw, recent, accessible, usable, and available in non-proprietary formats. Producers of open data are mainly public administrations, companies with a public-service mission and researchers, while "reusers" can equally be citizens or associations, other public services or supervisory authorities, press or economic actors [26]. These authors also cite a figure of 3.7 billion euros for the information market in France, a market of which 60% would consist of public data. Their report also describes several examples of reuse of data at national and regional levels.

Beyond difficulties to measure economic aspects, [29] believes that "these data are a tremendous resource that could be of much wider benefit to the citizens who financed their production." However, he notes that "most of the time they are at best offered for sale or made available to some actors under less than transparent conditions, and most often they are not shared at all." With this in mind, he proposes the "release of data",

which "constitute a common good". By the release of data, [29] means "to give them, in the hands of private parties, a purpose other than the public service mission for which they were originally produced." In his report, he lists data that can be released by an administration, of which here is a brief selection given as an illustration: measurements of pollution or traffic; land register and water networks, energy, transport; statistics; archival data and documentary holdings; bills; investigations; deliberations; subsidies.

Several major competitions were organized to promote the emergence of new uses, in particular The Open Data Challenge [30]. This European competition, with a prize of 20,000 euros and open to participants for 60 days between April and June 2011, attracted 430 contributions from 24 Member States Among the winners are notably:

- "Nomen est Nomen" from Finland, which gives access to all the entries of the public information databases concerning a surname.
- "European Union Dashboard" which shows how the Member States contribute to, and profit from, the common public policies.
- "ZNasichDani" which lists the people who hide behind the companies that obtain public contracts in Slovakia (including the politicians).
- "Mapping Europe's Carbon Dioxide Emissions": all is in the name.
- "Bike Share Map" which posts the state of the systems of bicycles in self-service in 30 towns of Europe and of the world.
- "Evolution of European Union Legislation" which makes it possible to visualize the activity about public policies through time, by field and topic.

Examples of use of open data abound and evolve too quickly for it to be relevant to list more in this section. The Apps for Democracy site gives an order of magnitude of the potential of these ideas and these new uses, certainly to be considered prudently: [31] said it had received 47 Web, iPhone and Facebook applications in 30 days, for an estimated value of $ 2.3 million in exchange for $ 50,000 distributed in prizes

At first sight the use of the open data thus appears very promising, but there remain many prerequisites to be set up before being able to exploit this potential fully. [32] point out that these data were defined and collected in very different contexts, for specific operational objectives. They thus do not have the same characteristics, in particular with regard to the temporal framework. As they were not created in anticipation of purposes other than those originally intended, it is common that they do not contain contextual information, i.e. metadata. Another important criticism raised by [32] is that no mechanism for feedback or improvement is envisaged. Thus a "reuser" of data who finds errors or has updated data generally has no automated way to return this information to the producer of the original data. [32] even mention the case where end users have corrected the data and where errors would be reintroduced during updates "at source". They conclude their case study on data from the land records of the State of New York with an emphasis on the need to implement data management processes, in particular metadata creation and updating, in order to fully benefit from these open data. [9] accentuate this point when they write that the new relations between data producers and intermediaries "cannot be built solely on the basis of data exchange between the stakeholders."

A quick review of a classification system of open data based on assigning one to five stars, like hotels, allows us to conclude this section on a note of pragmatism. For each level, the page Linked Open Data Star Scheme by Example [33] shows the minimum requirements, examples, as well as the costs and benefits for users and producers. Thus, the award of two stars requires the provision of data in a structured but proprietary form (e.g. Excel) and without metadata, allowing users to process this data and export it to other formats, while the effort is minimal for the producer because he just released an existing file. To get the maximum score of five stars, the data should be structured, under a free license and in a non-proprietary format, with a unique identifier that allows easy retrieval and metadata describing the context of use. For users, the main benefit is the ability to create a data network, and thus discover relevant new data, whereas producers must invest resources to identify and contextualize data to facilitate discovery. In return for this effort, they increase the intrinsic value of their own data.
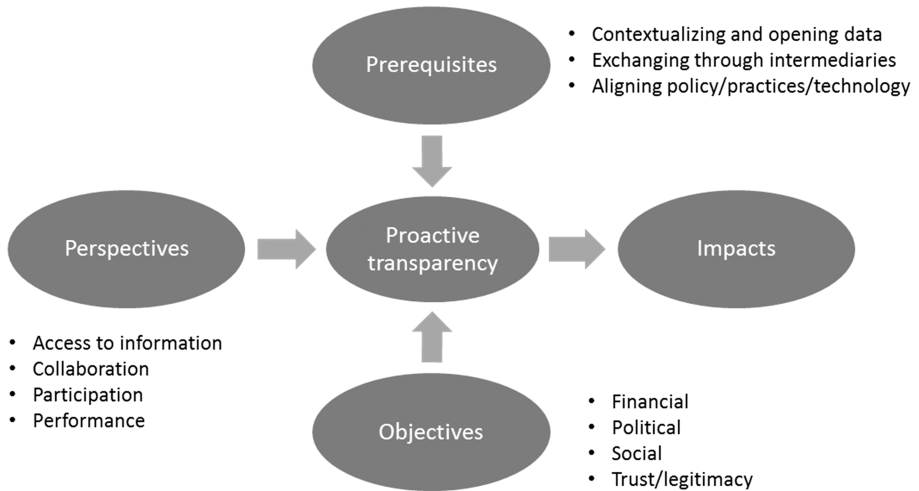
4   Proactive Transparency

This article is devoted mainly to the study of the proactive provision of information, with a focus on the transformations that this approach might induce in the public sector. The main findings about the impact of information technology and communication on transparency focus on the "direction" of transparency, the context and nature of the data, as well as the emergence of new intermediaries. Moreover, the expectations for ICTs and transparency are very varied: some want to draw inspiration from the world of open source, others believe in their potential to strengthen democracy, still others see them as a tool for improving performance. The fact of considering both transparency and ICT as a means among others, to use in order to achieve a higher goal (the public interest), can reconcile these expectations. Thus, the most enthusiastic, such as [29], see clearly an objective of public interest in data openness. However, the potential of ICT is partially limited by barriers, including traditional problems of access and skills, as well as the gap between technology on the one hand, and public policy and administrative practices on the other. Furthermore, [32] emphasize the need to establish mechanisms for feedback, and thus reintroduce bidirectional transparency, and the importance of contextual data or metadata. Finally, examples of the use of open data clearly show the emergence of new intermediaries, with public authorities willing to organize competitions with cash prizes to support innovative ideas. Some results of the Open Data Challenge competition [30] further illustrate how certain expectations can be met: "ZNasichDani" brings into the open the links between politicians and public procurement; "European Union Dashboard" is a typical example of an approach oriented towards performance management; "Evolution of European Union Legislation" aims to provide better information to citizens; and "Bike Share Map" is a composite application, or "mash-up", which is based on values from the open-source world (collaboration, sharing, reuse). The conclusion to draw is certainly that more information from the public sector is available via the Internet, thus contributing to proactive transparency, but that a number of prerequisites are to be put in place before being able to profit from it fully. The solutions necessary to the implementation of these prerequisites exist, both at technical and managerial levels. However, they require additional resources

on the part of public administrations, and these requirements are potentially conflicting in relation to those of the core business of a department or office. Note that these requirements are not necessarily just financial, they can also include skills, such as information management [32].

Figure 1 shows the different dimensions discussed in this article in the form of an overview diagram. To measure the impacts of transparency, and more particularly of the proactive provision of information, it is necessary:

- to take a position in relation to the perspective adopted, for example using the typology of [25] discussed in Sect. 2;
- to decide on objectives to be achieved or expectations: the concept of generator of public interest of [19] may be used;
- to think in terms of prerequisites to implement or barriers to remove: the work of [7] provides very interesting theoretical avenues in terms of mediated transparency, while [32] have a more practical approach to information management; the Open Data Foundation provides in addition very specific recommendations about data openness.

Fig. 1. An integrated vision of proactive transparency

The above works are given as reference or source of inspiration; anyone is free to adjust the dimensions of the model depending on context or needs.

5   Conclusion

In this paper we discussed transparency and various underlying concepts, particularly the idea of proactive transparency. We used these concepts to analyse the potential contributions of Open Data to proactive transparency. Finally we proposed an integrated vision of this proactive transparency that we believe could be used in different context

to analyse the potential contributions of Open Data to transparency for public administrations.

References

1. Pasquier, M., Villeneuve, J.: Organizational barriers to transparency: a typology and analysis of organizational behaviour tending to prevent or restrict access to information. Int. Rev. Adm. Sci. **73**, 147–162 (2007)
2. Kierkegaard, S.: Open access to public documents—more secrecy, less transparency! Comput. Law Secur. Rev. **25**(1), 3–27 (2009)
3. Holsen, S., Pasquier, M.: What's wrong with this picture? The case of access to information requests in two continental federal states—Germany and Switzerland. Public Policy Adm. **27**(4), 283–302 (2012)
4. Piotrowski, S.J.: Governmental Transparency in the Path of Administrative Reform. SUNY Press, New York (2007)
5. Bertot, J.C., Jaeger, P.T., Grimes, J.: Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. Gov. Inf. Q. **27**(3), 264–271 (2010)
6. Heckmann, D.: Open government-retooling democracy for the 21st Century. In: Proceedings 44th Annual Hawaii International Conference on System Sciences (HICSS), Kauai, Hawaii, USA (2011)
7. Meijer, A.: Understanding modern transparency. Int. Rev. Admin. Sci. **75**, 255–269 (2009)
8. Mayer-Schönberger, V., Lazer, D.: From electronic government to information government. In: Mayer-Schönberger, V., Lazer, D. (eds.) Governance and Information Technology: From Electronic Government to Information Government. MIT Press, Cambridge (2007)
9. Taylor, J.A., Lips, M., Organ, J.: Freedom with information: electronic government, information intensity and challenges to citizenship. In: Chapman, R., Hun, M. (eds.) Freedom of Information: Perspectives on Open Government in a Theoretical and Practical Context. Ashgate, Aldershot (2006)
10. GuttenPlag, GuttenPlag - kollaborative Plagiatsdokumentation. http://de.guttenplag.wikia.com/wiki/GuttenPlag_Wiki. Accessed 12 Aug 2012
11. Hanson, E.C.: The Information Revolution and World Politics. Rowman & Littlefield, Lanham (2008)
12. Bruns, A.: Life beyond the public sphere: towards a networked model for political deliberation. Inf. Polity **13**(1–2), 71–85 (2008)
13. Huyges, F.B.: Facebook, Twitter, Al-Jazeera et le "Printemps arabe", Institut de Relations Internationales et Stratégiques. http://www.iris-france.org/docs/kfm_docs/docs/2011-04-04-facebook-twitter-al-jazeera-et-le-printemps-arabe.pdf (2011). Accessed 12 Aug 2012
14. Reporters Without Borders, Blogger Released from Prison but Placed under Residential Surveillance. http://en.rsf.org/chine-jailed-human-rights-lawyer-allowed-29-03-2012,39918.html (2011). Accessed 12 Aug 2012
15. Faris, R., Wang, S., Palfrey, J.: Censorship 2.0. Innov. Technol. Gov. Glob. **3**, 165–167 (2008)
16. Williams, C.: How Egypt Shut Down the Internet, The Telegraph, 1 Jan 2011
17. Wimmer, M., Tambouris, E.: Online one-stop government. In: Traunmüller, R. (ed.) Information Systems: A Working Framework and Requirement. IJIP, vol. 95, pp. 117–130. Springer, Boston (2002). doi:10.1007/978-0-387-35604-4_9

18. Bertot, J.C., Jaeger, P.T., McClure, C.R.: Citizen-centered E-government services: benefits, costs, and research needs. In: Proceedings 9th Annual International Digital Government Research Conference (dg.o), Montreal (2008)
19. Harrison, T.M., Burke, G.B., Cook, M., Cresswell, A., Helbig, N., Hrdinová, J., Pardo, T.: Open government and E-government: democratic challenges from a public value perspective. In: Proceedings 12th Annual International Digital Government Research Conference (dg.o), College Park (2011)
20. Nam, T.: New ends, new means, but old attitudes: citizens' views on open government and government 2.0. In: Proceedings 44th Annual Hawaii International Conference on System Sciences (HICSS), Kauai, Hawaii (2011)
21. O'Reilly, T.: What Is Web 2.0—Design Patterns and Business Models for the Next Generation of Software. http://oreilly.com/web2/archive/what-is-web-20.html (2005). Accessed 12 Aug 2012
22. Zajicek, M.: Web 2.0: Hype or happiness?. In: Proceedings International Cross-Disciplinary Conference on Web Accessibility (W4A) (2007)
23. Obama, B.: Transparency and Open Government. http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment/ (2009). Accessed 12 Aug 2012
24. Office of Management and Budget, Open Government Directive, Executive Office of the President. http://www.whitehouse.gov/sites/default/files/omb/assets/memoranda_2010/m10-06.pdf (2009). Accessed 12 August 2012
25. Linders, D., Copeland Wilson, S.: What is open government ? One year after the directive. In: Proceedings 12th Annual International Digital Government Research Conference (dg.o), College Park (2011)
26. Lacombe, R., Bertin, P.-H., Vauglin, F., Vieillefosse, A.: Pour une politique ambitieuse des données publiques (2011). http://www.scribd.com/doc/59939293/Pour-une-politique-ambitieuse-des-donnees-publiques-Ecole-des-Ponts-ParisTech-Rapport-Donnees-Publiques-2011. Accessed 12 Aug 2012
27. Open Knowledge Foundation, Defining the Open in Open Data, Open Content and Open Services (2011). http://opendefinition.org/okd/. Accessed 12 Aug 2012
28. Open Government Data Foundation, 8 Principles of Open Government Data (2007). http://www.opendatafoundation.org/. Accessed 12 Aug 2012
29. Genoud, P.: Opening of the public data: an opportunity for Geneva. http://www.slideshare.net/patgen/ouverture-des-donnes-publiques-une-opportunit-pour-genve (2011). Accessed 12 August 2012
30. Gray, J., Meller, P.: The Open Data Challenge. http://opendatachallenge.org/ (2011). Accessed 12 August 2012
31. Kundra, V.: Apps for Democracy. http://www.appsfordemocracy.org/ (2009). Accessed 12 August 2012
32. Dawes, S.S., Helbig, N.: Information strategies for open government: challenges and prospects for deriving public value from government transparency. In: Wimmer, M.A., Chappelet, J.-L., Janssen, M., Scholl, H.J. (eds.) EGOV 2010. LNCS, vol. 6228, pp. 50–60. Springer, Heidelberg (2010). doi:10.1007/978-3-642-14799-9_5
33. Linked Data Research Center Laboratory, Linked Open Data Star Scheme by Example. http://lab.linkeddata.deri.ie/2010/star-scheme-by-example/ (2010)