Impediments, challenges and recommendations for using open government data

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Introduction

Open data have gained considerable attention recently within politics, companies, scientific communities, and citizen communities [1, 2]. Recent attention shows that a public demand exists for opening up non privacy-sensitive governmental data [3]. For instance, in December 2011, Neelie Kroes, the Vice President of the European Commission, stated: "We are sending a strong signal to administrations today. Your data is worth more if you give it away. So start releasing it now." [4] Another example of European attention for open governmental data is the start of the ENGAGE project (www.engage-project.eu) as part of Framework Programme 7 (FP7), which aims to develop an infrastructure for open, linked governmental data provision towards research communities and citizens.

An important event within the trends of the last years is the release of the EU Public Sector Information (PSI) directive in 2003. In this directive, also refered to as the PSI-directive, the EU presented a common legislative framework which regulates making data of public sector bodies available for re-use [5]. Many directives and implementation guidelines followed after the launch of this PSI-directive. [3]

Geiger and Von Lucke defined open governmental data as "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." [6, p. 185]. This definition, the PSI-directives, and national policies indicate that governmental data should be accessible without any restrictions on usage and distribution. However, the current use of open PSI is accompanied by many impediments. Hence, in this position paper the question is asked which impediments current policies encounter and which policy measures could be proposed to overcome these impediments.

Impediments of current open data policies

As part of previous research [3], we made an overview of literature and studied two use-cases. This research revealed the impediments that open data policies currently encounter. The impediments were distinguished and four categories were identified:

1) Political, economical, technical and societal impediments (e.g. the legacy system complicates the opening of data and there is no dialogue between the data producing public body and the data user);

2) Data access impediments (access requires registration or becoming a member and data sources are fragmented);
3) Data deposition impediments (e.g. limited types of data formats are accepted); and
4) Data use impediments (e.g. users lack capabilities to reuse data and insufficient metadata are provided).

Challenges for open data policies

The literature review and the study of the use-cases revealed four main challenges for the use of open public sector data:
1) Fragmentation of open data [7];
2) Lack of access to open data [7];
3) Lack of technical and organizational interoperability [8]; and
4) Difficulties with processing of data [3].

The above-mentioned challenges show that they are related to the oversimplification of the use of open data. Realizing that opening up data will not automatically result in effective use and in value creation is of considerable importance [3, 9].

Recommendations

To broaden and improve the use of open data we recommend to introduce:
1) Incentive policy guidelines to stimulate centralization of open data collections and to rectify the fragmentation. A central, complete overview of data sets should be created, while awareness of this overview should be created by using dissemination strategies.
2) Creating access to open data to enable the use of open data for any user. Open Data as a philosophy requires that certain data are freely available, without copyright, patents or other mechanisms of control in a timely and accessible way with few or no impediments [3].
3) Creating interoperability by adding structured metadata when making data available to ensure easy discovery and understanding of its potential. Providing users with the possibility to obtain metadata is very important in creating operability [2].
4) Creating an infrastructure for the processing of PSI. Data users should be provided with tools to track, (statistically) analyze and visualize open public sector data [3].

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