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Transparency-by-Design as a Foundation for Open Government

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Abstract

Purpose: Many governments are working toward a vision of government-wide transformation that strives to achieve an open, transparent and accountable government while providing responsive services. The aim of this editorial is to clarify the concept of transparency-by-design to advance open government.

Design/methodology/approach: The opening of data, the deployment of tools and instruments to engage the public, collaboration amongst public organizations and between governments and the public are important drivers for open government. We review transparency-by-design concepts.

Findings: To successfully achieve open government, fundamental changes in practice and new research on governments as open systems are needed. In particular, the creation of 'transparency-by-design' is a key aspect in which transparency is a key system development requirement and the systems ensure that data is disclosed to the public for creating transparency.

Research limitations/implications: Although transparency-by-design is an intuitive concept, more research is needed in what constitutes ICT-mediated transparency and how it can be realized.

Practical implications: Governments should embrace transparency-by-design to open more datasets and come closer to achieving open government.
Originality/value: Transparency-by-design is a new concept that has not given any attention yet in the literature.

1. Introduction

Transparency if often viewed as one of the key conditions for democracy (M. Janssen & van den Hoven, 2015). The opening of data is a global phenomenon driven by the need to boost innovation, create transparency and improve accountability (John Carlo Bertot, Paul T. Jaeger, & Justin M. Grimes, 2010; K. Janssen, 2011). In this context, data is disclosed as part of open government transparency efforts (Luna-Reyes, Bertot, & Mellouli, 2014) and portals and websites are now serving as an interface to create transparency. Portals are intermediating between the government and the public and changing the relationship between these parties. Often data is processed by other parties to prepare data for easy access and understanding. In this special issue the role of intermediaries is discussed and it is shown that their efforts are limited and sometimes even disappointing. Generating value from open data proves to be more cumbersome. In particular the creation of transparency remains challenges and is non-trivial.

The creation of an open government needs extensive transformation of the public sector as well as the relationship between government and the public and needs to be mediated by Information and Communication Technology (ICT). Transformation requires a plan for radical improvements, but need to be realized incrementally (Weerakkody, Janssen, & Dwivedi, 2011). Data needs to be disclosed as part of the core activities of public organizations to achieve a truly open government and software and business processes should be designed in such a way that the opening becomes not an afterthought, but is integrated in the heart of the public sector.

While ICT is assumed to generate multiple advantages, more use of ICT does not always result in transparency. Bannister and Connolly (2011)) argue that the expectations of digital technology-enabled transparency are too high. Moreover, although the opening of data might provide the suggestion that more transparency is created, often essential parts are hidden or not opened. Halachmi & Greiling (2013) posit that ICT can also be used to create less transparency. In this realm, though current effort across governments have focused on releasing data, few provide help to make processes, procedures and decisions made by government transparent. These efforts do not help open government efforts as no or limited transparency is created to help citizens monitor what administers are doing and how the public interest is served. In this respect, the opening of data has often failed to facilitate the process of better citizens' understanding of the inner working of

government. As such, the public is not empowered and cannot use the data to play an active role in influencing governments through contributing suggestions or participating in decision-making processes.

For achieving such transformations '*transparency-by-design'* is a key aspect. In essence, transparency-by-design depicts a situation in which the requirements on transparency are satisfied by the very nature of the design and that the outcomes of the design process meet these requirements. In this editorial we explore this concept, relate it to the special issue papers and plea for further research in this area.

2. Transparency

In essence, transparency is the ability to see what is happening in the government by the public. Although transparency looks like an appealing and simple concept, in practice it is more challenging to achieve. There are many definitions and conceptualizations of transparency (John Carlo Bertot, P.T. Jaeger, & J.M. Grimes, 2010; Frank & Oztoprak, 2015; Matheus & Janssen, 2015; Peixoto, 2013; Ward, 2014) showing that it is difficult to have a uniform on what constitutes transparency in practice. Most definitions and conceptualizations often provide limited help for those who want to create transparency. Partly, this is caused by the dependency of transparency on the stakeholder view and the context. Stakeholders might view transparency in different ways and what might be transparent for one, might not be for somebody else. The context defines what level of transparency is feasible and how transparency can be created. One of the concerns related with the opening of data is individual privacy (Conradie & Choenni, 2014), which might result in the aggregation of data and result in the reduction of the level of transparency. Transparency might also have an adverse effect on productivity (Osborne, 2004). It might avoid risk taking by civil servants and might harm innovations.

Greater transparency can be achieved when the public have more control and alternatives for gaining access to raw data and influence over the level of aggregation (Halachmi & Greiling, 2013). The question is how more data can be released given the complex and heterogeneous information system landscape in government. Applications and data are often interwoven, the level of integration between systems is limited, and the data have various qualities and cannot be easily separated.

3. Transparency-by-Design

The public sector is a complex eco-system where systems are fragmented and data is not neatly organized. The fragmentation of the structure is reflected in the organization of data. This not only hinders the opening of data, but also makes it more difficult to find data and understand its value. There is often a lot of manual work involved in open data. Instead of adding a layer for the opening of data, it would be better to organize the data in such a way that it can be disclosed in a more useful way and easily opened without needing additional cumbersome steps. This is the basic idea of transparency-by-design which should result in the opening of more data in such a way that higher levels of transparency are achieved.

Most Databases, Information Systems (IS) and Document Management Systems (DMS) are not organized in such a way that data is stored. In Database systems all kinds of data are stored that cannot be opened, such as the 'owner' of the data. In DMS often privacy sensitive data is integrated in the documents. This data cannot easily be separated from other data which impedes the opening of data. Moreover, the huge amount of data that is collected often prevents the opening of data, as there is always some part of the data that cannot be released due to issues such as complexity or data protection and privacy. Transparency-by-design should ensure that these data are separately stored at the data collection stage itself. In this way, the opening of data is not impeded and there is no excuse for not disclosing data that is relevant for creating transparency.

We define transparency-by-design as taking into account transparency in every phase of the design process resulting into the automatic opening of relevant data for the public in such a way that it is easy to understand and interpret. This should result in systems opening data by default and separating sensitive data and non-sensitive data to enable the disclosing of data. In the ideal scenario, once data is collected it will be automatically disclosed for the public without the need for any manual intervention. The opening of both data and the metadata describing the meaning and properties of the data should be included. The inclusion of metadata makes the use of open data easier and faster, and enhances the user experience (Zuiderwijk, Janssen, & Susha, 2016). Data should be accompanied by relevant metadata need to understand and interpret the data.

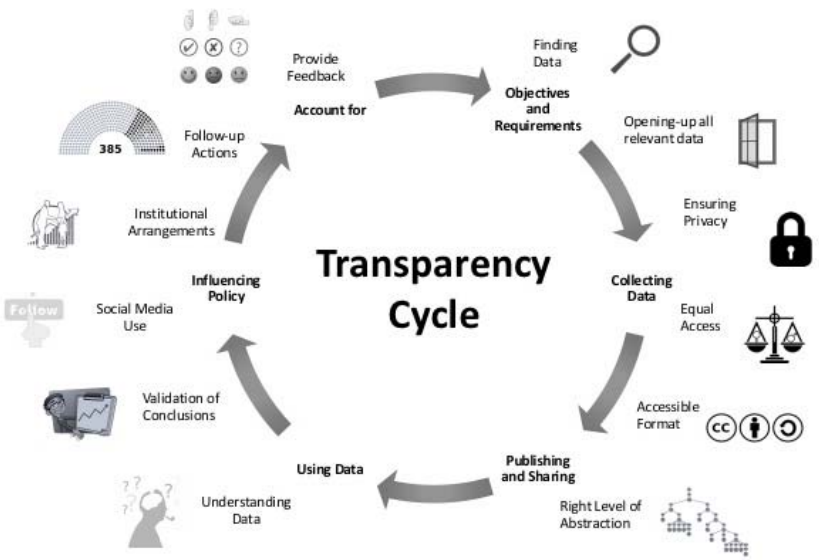
In our view, transparency-by-design refers to both the design *process* and the *outcomes* of the design process, the systems and processes for ensuring transparency. Transparency-by-design is a concept that is aimed at ensuring that transparency requirements are considered when designing new systems, administrative processes and procedures. The systems should enable the collection of data and metadata from the source and ensure that data and the accompanying metadata can be opened

for creating transparency. Also the systems should facilitate the understanding and interpreting of the data. Data is useless when there are no means to understand its meaning in the real world. At the end, embracing the concept in the design process should result in systems in which relevant data, and its metadata, is opened automatically and can be used by the public for creating transparency.

4. Challenges for Creating Value

Whereas most open data initiatives are driven by the opening of data and thereafter possible applications are created based on the availability of data, the creation of transparency cannot follow such a data push. Transparency as an afterthought is unlikely to result in the needed transparency and understanding by the public. Instead, the creation of transparency follows a transparency cycle with starting with outlining the objectives and what should be accomplished using transparency. The transparency cycle is shown in figure 1. Next, data is collected that is needed for creating transparency. The data might need to be processed and systems and processed might need to be adopted to the transparency-by-design principle. Next, the information is published and shared with the public. This can be done by making raw data available, but also by developing apps and other ways of making information easily accessible and understandable (Matheus & Janssen, 2013). The data can be used by the public and their interpretation of the data can be used to influence the priorities of government or to take other actions. The mechanism used for influencing the government and how to gain feedback needs to be in place. Finally, the feedback can be used to reconsider the objectives, releasing new data and the whole cycle starts again.

Although this cycle might look simple at first glance, there are many elements that need to be addressed. Some of these elements are depicted in figure 1. How transparency is created is ill-understood and is influenced by a large number of factors. Also the role of transparency-by-design should be worked out to ensure that more and more relevant datasets can be opened to create transparency. Transparency-by-design means that the data is automatically opened and that limited resources are needed for finding, opening and sharing relevant data. Yet, opacity does not originate from the availability of data, but also from the complexity of legislation, the public administration structure, the many stakeholders and other factors (M. Janssen & van den Hoven, 2015). As such, these aspects also need to be taken into account when creating transparency.



5. Special Issue Papers

This special issue contains 8 papers addressing various aspects of transparency.

- The first paper "*On Addressing Privacy in Disseminating Judicial Data: Towards a Methodology*" is presented by Mortaza S. Bargh, Sunil Choenni, and Ronald Meijer. The authors examine how open government might increase the chance of privacy breaches, which can undermine stakeholders' trust and thus the objectives of transparency. The authors present the *Transitional Action Design Research* (TADR) proposition for preserving privacy while disseminating information for transparency.

- Rui Pedro Lourenço, Suzanne Piotrowski and Alex Ingrams paper on "*Open Data Driven Public Accountability*" investigates open data driven public accountability. The authors conducted a systematic meta-analysis of the literature and developed a detailed typology of the kinds of research that has been undertaken. The authors found that Benefits of transparency can be both over- and under-estimated because of the complexity of their effects on political, administrative, and social behavior.

- Andreiwid Corrêa, Evandro Paula, Flávio Silva, and Pedro Corrêa paper '*Transparency and Open Government Data: A Wide National Assessment of Data Openness in Brazilian Local Governments*" aims at analyzing how current data portals or websites comply with OGD principles in the Brazilian local government. Their findings suggest limited compliance with national law and open data principles, which prevent the public from taking advantages of open government.

- In the paper "*Information Requirements to Create Public Value: Sharing Information and Opening Data to Address Urban Blight*" the authors Meghan Cook, Manuel De Tuya, Megan Sutherland and Luis Luna-Reyes the requirement for generating public value through open data are identified. The authors propose introducing an information-sharing infrastructure for exchanging code enforcement data among a number of city government departments and the public.

- Although open initiatives are crucial for advancing, these are poorly understood. In the paper "*Conceptualizing Citizen Participation in Open Data Use at the City Level*" by Ryad Titah and Julien Hivon, a research framework is developed linking open data to citizen participation. The authors identify four distinct types of participation; 1) hands-on activities, 2) greater responsibility, 3) better communication and 4) improved relations between citizens and the open data portal development team. The authors found that understanding citizens and their needs is critical for open government project.

- Intermediaries can help to bridge the gap between governments and citizens. This argument is addressed in the paper "*Open Data Intermediaries: Coproduction in Budget Transparency*" by Gisele Da Silva Craveiro and Claudio Albano. The authors identify characteristics of intermediaries and their position in the open government ecosystem. Their study was conducted in four Latin American countries and provided rich insight into many factors. The results reveal that there are some initiatives, which can be maximized to promote the coproduction of value, initiatives like holding events, forming partnerships, among others.

- Evgeny Styrin, Luis Luna-Reyes, and Teresa Harrison compare the open government data ecosystems of Mexico, Russia and the United States in the paper entitled "*Open Data Ecosystems: An International Comparison*". Open government data policies evolve over time and come institutionalized by making use of the *policy window* opened by political attention. The authors analyze the differences and variety of open data ecosystems and draw the attention to the influence of the political situation and other contextual factors on the policy-making.

- Iryna Susha, Marijn Janssen and Stefaan Verhulst analyze the novel concept of data collaboratives in their paper "*Data Collaboratives as "Bazaars"? A Review of Coordination Problems and Mechanisms to Match Demand for Data with Supply*". Both private and public organizations work together on data and address societal challenges in a data collaborative.

Five coordination challenges are identified and mechanisms to deal with these challenges are proposed. Coordination mechanisms can help to better understand the value creation processes.

6. Conclusions

Although most agree on the need for transparency, the actual creation of transparency often lags behind expectations. Relevant datasets cannot be opened, as the data is stored in such a way that opening is only possible at great expense. Therefore, we posit that transparency-by-design should be embraced. *We defined transparency-by-design as taking into account transparency in every phase of the design process resulting into the automatic opening of relevant data for the public in such a way that it is easy to understand and interpret*. By using this concept when designing new systems and processes, it should result in separating sensitive data and non-sensitive data and facilitate in opening data and the accompanying metadata to support understanding and interpretation; by default this will result in higher levels of transparency.

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