The Role of Linked Open Statistical Data in Public Service Co-Creation

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ABSTRACT[1]

Linked Open Statistical Data (LOSD) and Open Government Data (OGD) are believed to contain the capability to drive the creation of new and innovative public services and provide increased levels of public value. It has also been proposed that these technologies have the potential to change the relationship between traditional public service providers and public service users by allowing any stakeholder to co-create a new service. There is currently a limited amount of empirical work demonstrating how LOSD and OGD may be exploited by non-traditional stakeholders to co-create new data-driven public services. As part of the Horizon2020 funded OpenGovIntelligence (OGI) project, six pilots are being conducted in six different EU countries (Belgium, Estonia, Greece, Ireland, Lithuania, and UK) that aim to demonstrate how OGD and LOSD may be exploited and lead to co-created data-driven public services. The aim of this ongoing research paper is to provide an overview of the OGI co-creation framework and methodology as well as present the current stage of the six different pilots and how OGD/LOSD has thus far allowed for co-creation to take place and public value to be created.

CCS CONCEPTS

• **Applied Computing** → **E-Government**;

KEYWORDS

Open Data, Linked Open Statistical Data, Co-Creation

1 INTRODUCTION

Governments at every level, from municipal to national, are releasing and disclosing datasets due to the belief that, once opened, they may be used and exploited to create public value for society. However, this potential has yet to materialize at a scale one would expect [1]. Many of the datasets that have been released are going unused. There are many reasons that these datasets may be going unused: lack of quality, lack of license, and missing technical knowhow tend to be three of the more common barriers cited in the literature [2], [3]. One way in which governments and agencies are trying to bypass these barriers and get the expected value from their data is through the use of Linked Open Statistical Data (LOSD) and open cubes. LOSD and data cubes allow for an easier way to view, manipulate, understand, and visualize datasets. Most OGD sets are able to be changed, manipulated, and transformed into new open data cubes that allow for easy slicing, dicing, drilling, and pivoting through the data. Once the data has been linked and transformed into a cube it is possible to build applications on top of this data layer to provide new and innovative public services. In the on-going research we are working with six different projects that are currently utilizing OGD, LOSD, and data cubes to develop and offer new co-created public services.

2 CO-CREATION AND OGI FRAMEWORK

Co-creation supports the idea that citizens and governments are beginning to have a different sort of relationship, no longer are non-public-sector stakeholders dependent or customers of service providing agencies, but they should be able to be viewed as collaborators who are able to play a role in creating and evaluating the services that they need [4]. This is a dramatic change, and there are two main reasons that this shift is taking place: firstly, public services are beginning to be viewed as anything that creates public value [5] and, secondly, new digital technologies are acting as a catalyst for this transformation [6]. Since OGD/LOSD has the potential to create new forms of co-creation, a framework is needed to understand this process. One way that OGD/LOSD may be used is to co-create new public services, previous work has been done to understand how OGD/LOSD may be used or exploited to drive public service co-creation [4]. This framework (Figure 1) also forms the basis for the OpenGovIntelligence pilots, which aim to elicit public value by exploiting LOSD and new ICT tools [7].
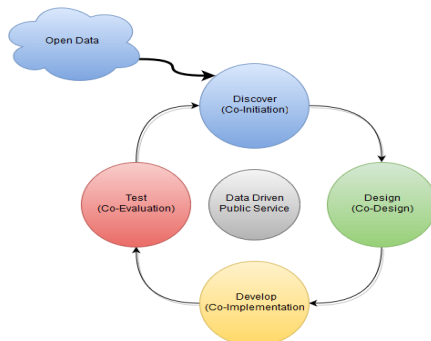

Figure 1. OGI Co-Creation Framework

It argues that in an environment where OGD and LOSD is readily available, in addition to tools that allow for the exploitation of said data, that co-creation may take place with any actor, regardless of what stakeholder group they belong to, is able to take the lead and co-create new data-driven services. Following agile development best practices, this process allows for services to get up and running in a quick and efficient manner, for the service to react to changes and feedback quickly, and also removes barriers for co-creation, thus allowing for stakeholders to play a role and "co-create" without experiencing a high burden for their work. The process takes traditional SCRUM/Agile development cycles of Discover, Design, Develop, Test and maps them to a "co-creation" equivalent: co-initiate, co-design, co-implement, and co-evaluate [4], [7]. This co-creation cycle is iterative with the expressed goal of creating higher levels of public value and becoming more in-tune with the service-users' needs with each successive iteration. This cycle varies from the traditional government-driven, top-down waterfall-life methods of public service production, as it is clear that this previous method is not in-tune with the needs and expectations of the stakeholders.

3 PILOTS IMPLEMENTATION

There are 6 pilots from Belgium, Estonia, Greece, Ireland, Lithuania, and United Kingdom (UK) in the OGI Project [8]. The pilots have used similar approaches to collect data from potential users. Five of them used user workshops and one used structured interviews. Relevant datasets were identified in each of the six pilots. Major datasets were not yet in open data format (CSV/API accessible). It was identified that organizational issues such as lack of Information Technology governance (interoperability legislation and norms), lack of vocabularies, and lack of technical capacity negatively affected the co-creation of new data-driven public services. As an example, these issues resulted in poor data quality in the Greek pilot, lack of interoperability between databases from different departments in the Irish pilot, accessibility issues in the Lithuanian and Estonian pilot, and, lack of technical capacity to perform the queries in the UK pilot. The proposed co-creation model observed in [4] and the LOSD cubes model of evaluation observed in [9] may be used by other cases to identify issues in data-driven co-creation of public services.

4 CONCLUSIONS

The purpose of this paper was to present the on-going research on OGI framework and understanding of co-created data-driven public services and to demonstrate this framework in practice by providing an overview of six real-world European pilots that are exploiting LOSD and OGD to co-create new public services. Though the pilot projects are all currently in the initial stages of development and implementation, some interesting findings have thus far emerged. Firstly, when discussing the co-creation aspect, it does appear to be the case that the level of co-creation and how the process happens varies depending on which stakeholder initiated the service: private sector and academic stakeholders tend to be more understanding and accepting of co-creation practices whereas governmental stakeholders have a harder time incorporating co-creation into their service design. It appears that most services were able to conduct co-design, but struggled when it comes to co-initiation and co-implementation. Thus, further research should be conducted to better understand how the process of co-creating a data-driven public service changes based on the initiating stakeholders. Additionally, more work is needed to understand why some areas of co-creation are more easily accepted and implemented than others, work in this direction could lead to new ways to drive and encourage co-creation of data-driven public services.

ACKNOWLEDGMENTS

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