OpenGovIntelligence

Fostering Innovation and Creativity in Europe through Public Administration Modernization towards Supplying and Exploiting Linked Open Statistical Data

Deliverable 4.5

Pilots and Evaluation Plan – V3

Leading partner:	Technical University of Delft (TUDelft)
Participating partners:	TUDelft
Version-Status:	V1.0
Dissemination level:	CO

Deliverable factsheet

Project Number:	693849
Project Acronym:	OpenGovintelligence
Project Title:	Fostering Innovation and Creativity in Europe through Public Administration Modernization towards Supplying and Exploiting Linked Open Statistical Data

Deliverable title:	Pilots and Evaluation Results – Second Round
Deliverable number:	D4.5
Official submission date:	31/10/2018
Actual submission date:	31/10/2018

Editor(s):	Ricardo Matheus (TUDelft)
Author(s):	Ricardo Matheus (TUDelft), Marijn Janssen (TUDelft)
Reviewer(s)	All partners

Abstract:	This report presents the evaluation methods and measures for the OGI project. It was updated taking into consideration the 2nd evaluation report (D4.4). The evaluation has four areas: Co-creation, ICT Toolkit, Acceptance of ICT Toolkit and Outcomes.

Effort of Participating Partners Consortium

	Name	Short Name	Role	Person Months
1.	Centre for Research & Technology - Hellas	CERTH	Coordinator	0.5 pm
2.	Delft University of Technology	TUDelft	R&D Partner	4.0 pm
3.	National University of Ireland, Galway	NUIG	R&D Partner	2.0 pm
4.	Tallinn University of Technology	TUT	R&D Partner	0
5.	ProXML bvba	ProXML	R&D Partner	0
6.	Swirrl IT Limited	SWIRRL	R&D Partner	0
7.	Trafford council	TRAF	Pilot Partner	0
8.	Flemish Government	VLO	Pilot Partner	0
9.	Ministry of Administrative Reconstruction	MAREG	Pilot Partner	0.1 pm
10.	Ministry of Economic Affairs and Communication	MKM	Pilot Partner	0
11.	Marine Institute	MI	Pilot Partner	0
12.	Public Institution Enterprise Lithuania	EL	Pilot Partner	0

Revision History

Version	Date	Revised by	Reason
0.1	01/09/2017	TUDelft	Initial setup by Ricardo Matheus
0.4	20/10/2018	TUDelft	Internal Review by Marijn Janssen
0.9	25/10/2018	CERTH	Internal reviewer
1.0	31/01/2018	TUDelft	Final Version

Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Table of Contents

List of Figures

List of Tables

Executive Summary

OpenGovIntelligence (OGI) goes beyond traditional top down approaches and proposes the co-initiation, design, implementation and evaluation of innovative, data-driven public services. Six pilot projects are developed which take different approaches and look at various aspects of Linked Open Statistical Data (LOSD). These services exclusively address specific society's needs, improving in that way the effectiveness of public sector's processes, but also promoting the citizen- centric character of these processes. The co-creation of public services will tap into the exploitation of public sector statistical data transformed as LOSD, and also into the adoption/expansion/development of OGI ICT tools that will enable the effortless creation and delivery of qualitative, data-driven public services.

The evaluation is divided in four main areas; the evaluation of the 1) Co-Creation Framework, 2) OGI ICT Toolkit, 3) Acceptance, and, 4) Outcomes. The first two areas were evaluated in this first year report. The other areas can only be evaluated when the pilots are used in practice by a sufficient user-base. This will be evaluated in the this dliverable and the deliverabel for year 3 .

The OGI co-creation framework used a mixed approach and is described at section 3.1 The Co-Creation evaluation showed that pilots collected information from their stakeholders, in particular civil society (people) and civil servants (government), but also from private sector (enterprises). The participation of these stakeholders helped to re-shape the initial objectives and pilots' plans. Also important insights into the main problems and solutions were created. Most pilots used Co-implementation and co-evaluation for this round of pilots' operation.

The acceptance and outcomes evaluation will be conducted on end-users of stable versions of pilots. A mixed approach will be used and described at sections 3.2 for data quality and 3.3 the pilots acceptance.

The OGI ICT Toolkit will be evaluated using a mixed qualitative approach (described at section 3.4). Technical partners and pilots' leaders will be interviewed and surveyed to collect information about fundamental requirements and parameters for an ICT Toolkit development. The majority of the requirements are already met in the pilots, whereas a few others will be implemented in year three. In the initial stage of development it was not possible to perform a quantitative approach to check these parameter and requirements. The co-creation framework, OGI ICT Toolkit will be again evaluated in the next round of evaluations by using a combination of qualitative and quantitative approaches, together with acceptance and outcomes areas.

1   Introduction

This document reports the evaluation methods of OpenGovIntelligence (OGI) project. The OGI environment provides an ICT toolkit comprising easy-to-use and user-centric tools to facilitate realizing an Linked Open Statistical Data (LOSD) innovation ecosystem. Pilots will be executed to validate and prove the usability and effectiveness of OGI ICT toolkit to co-create and innovate ecosystems.

The first part of the evaluation is related to the co-creation steps performed. The second part concerns the evaluation of the OGI Toolkit by developers. The third part is the acceptance of the OGI ICT Toolkit by end-users. The fourth part is the evaluation of the outcomes of pilots', which includes Transparency, Administrative Burden Reduction, and, Costs Reduction.

1.1   Scope

The present document is the Deliverable 4.4 "D4.4 – Pilots Evaluation Results - Second Round" (henceforth referred to as D4.4) of the OGI project. The main objective of D4.4 is to describe the pilot's results in this second year of OGI project and elicit the lessons learned and conclusions from evaluation results.

1.2   Audience

The audience for this deliverable is as follows:

- European Commission (EC);

- Audience interested on exploitation of Linked Open Statistical Data (LOSD) on Data Cubes for public service delivery based on co-creation from external and internal stakeholders; and,

- OGI Project partners.

1.3   Structure

In the next chapter, we start by presenting the pilots' Evaluation Overview in accordance with Pilots' Implementation Plan in the report D4.3. The structure of this document is as follows:

- **Section 2** provides the Evaluation Overview;

- **Section 3** describes the Pilots Evaluation Methodology;

- **Section 4** presents the Conclusions;

- **Section 5** has the References; and,

- **Section 6** includes the Annexes.

2   Evaluation Overview

The pilots are deploying the OGI ICT Toolkit to implement an application that can be used by others. To develop the pilots, the OGI ICT Toolkit will be used and tested and the co-creation framework is guiding the relationship between service providers and users. The results of the evaluation provides insights for further improvement of the OGI toolkit and for improving the evaluation instruments.

OGI project will be evaluated using six pilot projects, described in the report D1.1- Challenges and Needs (https://www.slideshare.net/OpenGovIntelligence/deliverable-11-ogi-challenges-and-needs):

1. **The Greek Ministry of Administrative Reconstruction (Greece)**
   a. http://wapps.islab.uom.gr/CubeVisualizer/vehicles/;
2. **The Enterprise Lithuania (Lithuania)**
   a. http://vmogi03.deri.ie:8080/superset/dashboard/7/
   b. http://vmogi03.deri.ie:8080/superset/dashboard/5/
3. **The Tallinn Real Estate (Estonia)**
   a. https://rnd-tut.shinyapps.io/Estonian_Pilot/
4. **Trafford Council *Worklessness* (England)**
   a. http://www.trafforddatalab.io/opengovintelligence/
5. **The Flemish Environment Agency (Belgium)**
   a. https://www.milieuinfo.be/emissiepunten/
6. **The Marine Institute (Ireland)**
   a. http://vis.marine.ie/DashboardsTest/#/wave_spectral
   b. http://vis.marine.ie/DashboardsTest/#/wave_zero
   c. http://vis.marine.ie/DashboardsTest/#/weather

The OGI environment provides an ICT toolkit comprising easy-to-use and user centric tools to facilitate the processing and use of Linked Open Statistical Data (LOSD). The pilots are executed to validate and prove the usability and effectiveness of OGI ICT toolkit to co-create and innovate ecosystems. The resulting app should be used by a variety of users which in turn should result in long term effects. The Figure 1 summarizes the interdependencies and interconnections between the working packages (WP) of OGI project.
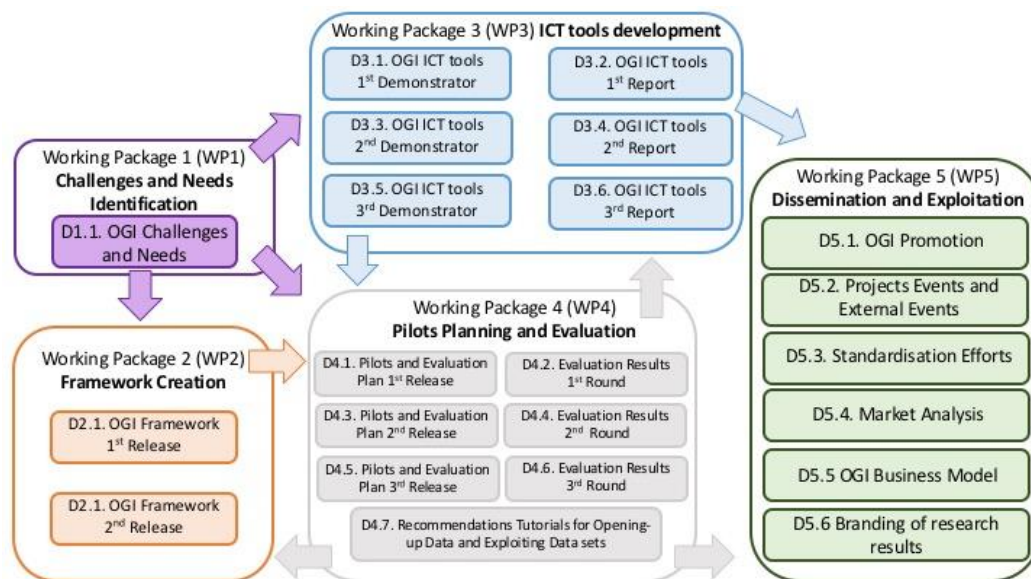
Figure 1- Interconnections and Interdependencies between OGI Working Packages and Deliverables

In an ecosystem, there are different stakeholders who view the pilots from their own perspectives. Developers might want to evaluate the pilots based on their ability to meet requirements, decision-makers might look at the impact of the applications on the number of users and return on investment, policy-makers in terms of societal impact generated by reducing administrative burden, the creation of transparency and its contribution to solving societal problems, and end-users for satisfying their needs. Hence, evaluation needs to take into account the multiple stakeholders' perspectives.

3   Evaluation Methodology

Based on the stakeholders perspective, four areas to be evaluated were derived and contain the following:

1. **The first area is the co-creation framework** (co-initiation, co-design, co-implement and co-evaluation). This is relevant for those innovators and for developers who want to derive the requirements.
2. **The second area is the OGI Toolkit** (ICT building blocks and cubes design). This is primarily relevant for developers who build applications.
3. **The third area is the acceptance of OGI Pilot Applications**. End-users should accept and use the OGI Toolkit deployed in the pilots.
4. **The fourth area is the outcomes** (estimative money savings, time reduction, efficiency perception of service delivery and transparency). The outcomes are of relevance for the decision-makers, but also for the society as a whole. At the end, the purpose is to create societal value.

These four areas are summarized on the Figure 2. The second area about OGI solution platforms (in blue) contains the development of the building blocks contributing to the platforms and the use of the platforms, and its building block for developing the apps in the pilots. Both are closely connected to each other and therefore are integrated together.
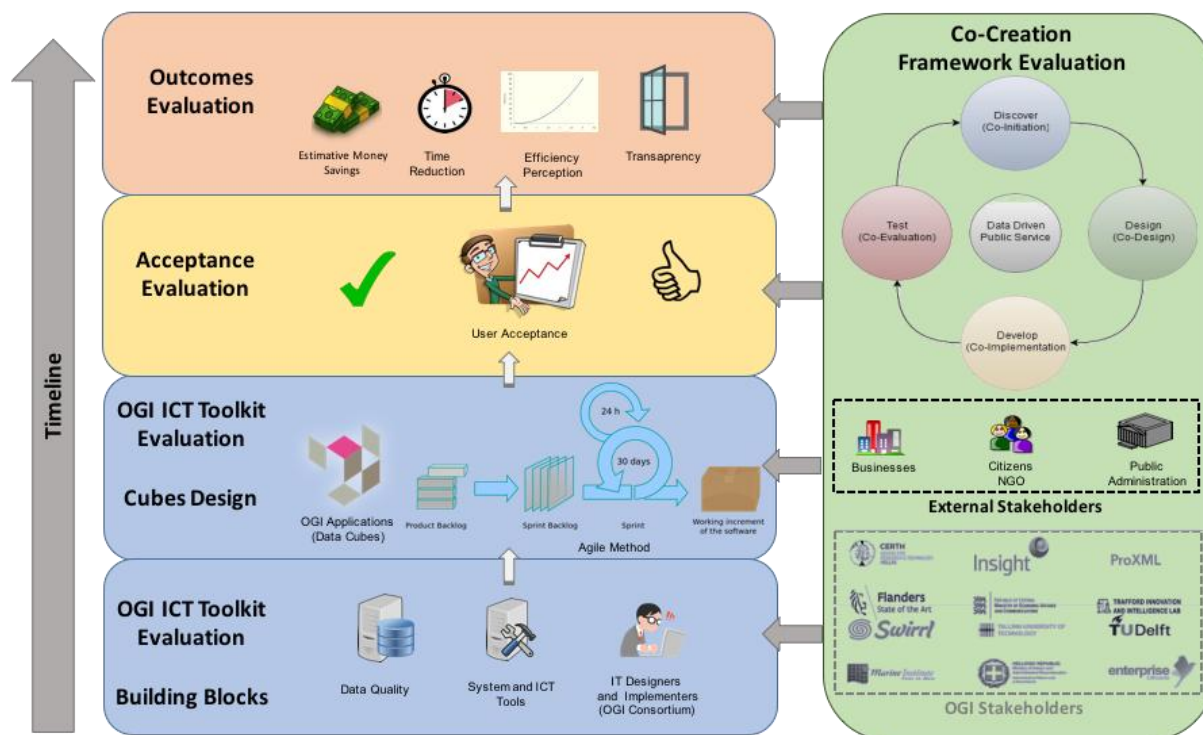
Figure 2 - Evaluation dimensions

The co-creation framework is described in detail in Deliverable D2.1, in the WP2 Framework Creation. The OGI tool kit is also described in detail in Deliverable D3.5, in the WP3 ICT Tools Development. Furthermore, this report is linked to D1.1 OGI Challenges and Needs, as part of the WP1 Challenges and needs identification the D4.4 Pilots Evaluation results - Second round in the WP4- Pilots Planning and Evaluation. Those interconnections are visualized in Figure 1.

Pilots are organized in three main iterations in which each time the OGI toolkit will be more advanced and further developed. This agile way of working enables relatively short cycle-times and quick improvements. Furthermore, functionalities can be evaluated:

1. The first (initial) iteration resulted in an early version of the evaluation of OGI services and tools. This feedback will be used to further improve the OGI ICT Toolkit
2. The second iteration will be uses to develop a more advanced version. Again, this feedback will be used to further improve the OGI toolkit; and,
3. The final iteration of pilots will benefit from the lessons learned in the first and second years of pilot iterations (implementation and evaluation).

The Figure 3 illustrates the tasks involved in planning for and conducting a pilot and shows the OGI phase during which each of these activities might occur. The timeframe is presented at Section **Σφάλμα! Το αρχείο προέλευσης της αναφοράς δεν βρέθηκε.**. Although this is presented in a waterfall manner, this is only for communication and planning purposes and the actual way of working is agile embracing user-oriented development.
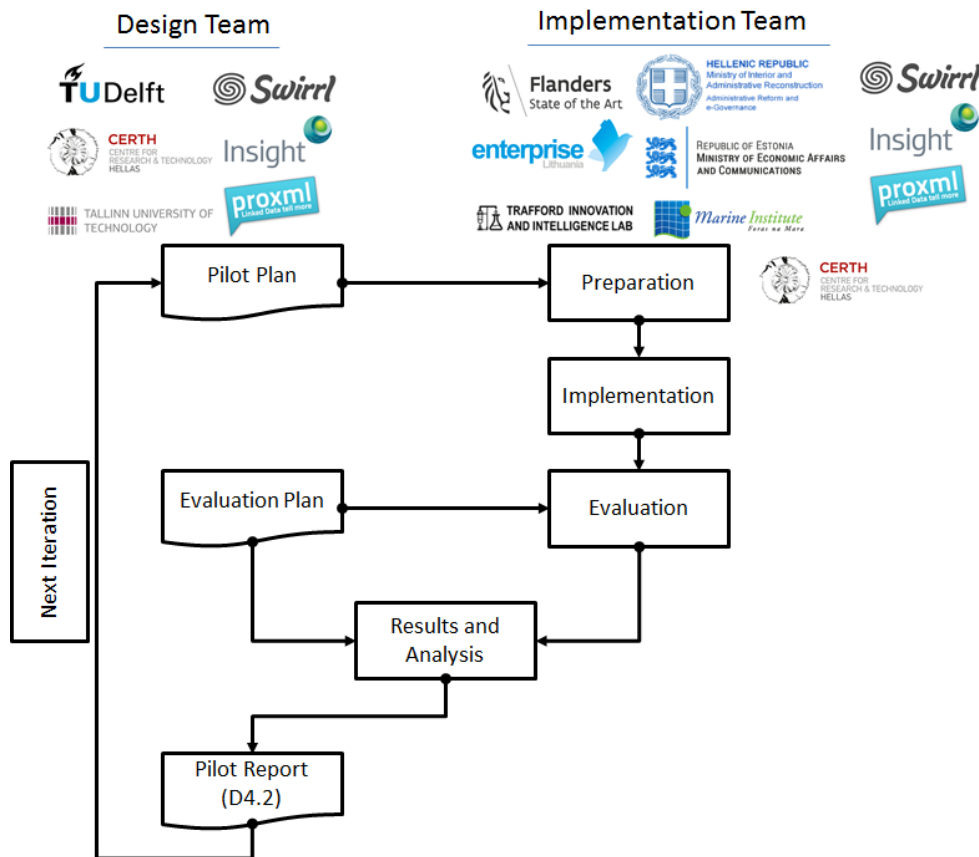
Figure 3 - High Level Processes of Pilot Plan

The pilot design team is responsible to create the pilot implementation and evaluation plan (Deliverables 4.1, 4.3 and 4.5) as well as pilot report (Deliverables 4.2, 4.4 and 4.6). This team consists of the Research and Development (R&D) Partners in the OGI consortium.

The pilot implementation team is formed by the technical partners and, mainly, the people in charge of each of the six pilots. The Pilot implementation team is responsible to execute the pilot projects based on the plan created by pilot design team described on this report D4.5 and the previous version, D4.3 and D4.1.

Pilot implementation will be divided in three main actions:

1) **Preparation**: the part that deals with collecting needed information from the pilots to fill the implementation template;

2) **Implementation**: the part that executes the implementation of the OGI toolkit and co-creation framework on the pilots by technical partners; and,

3) **Evaluation**: the part that measures the success of outputs and outcomes after implementation of OGI toolkit and co-creation framework.

The findings of the evaluation of the second step will be analysed by the OGI Consortium. The result of this analysis will be used to create the pilot plan for the next iterative cycle. The objective is to identify challenges and needs to improve the implementation and evaluation of OGI ICT Toolkit and OGI Co-Creation Framework in the OGI pilots.

The pilots' reports will provide the processes of each pilot and evaluation on four evaluation dimensions for each pilot (described at Figure 4), and will be the source for the pilot plan of next iteration, for example D4.4 (Evaluation results 2nd round) will be the source for D4.5 (Pilot and Evaluation Plan 3rd release), influencing D4.6 (Evaluation results 3rd round). Below, the Figure 4 describes the expected reports aforementioned.
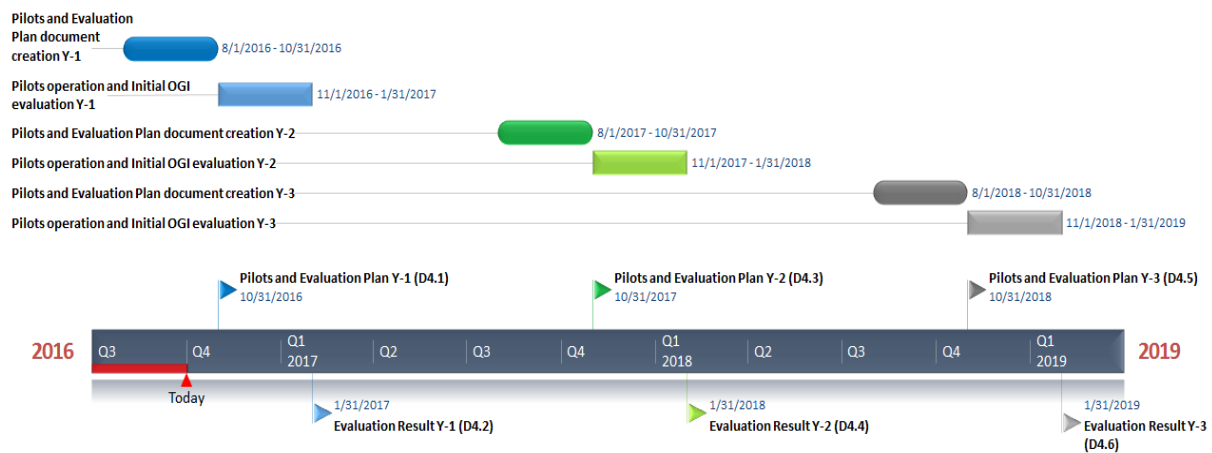
Figure 4 - Pilots' Timeline

3.1 Pilots' Co-Creation Evaluation Methods

Taking into consideration the type of co-creation and participant contribution we could identify methods to collect data and also ICT tools that will treat and analyse the data and feedback of participants. This is explained at D2.1 OGI Framework from WP2 Framework Creation.

The objective of this section is to explain the methods to collect data and ICT tools used to evaluate the feedback, statistics, etc. from the identified types of co-creation and participant contributions. Table 2 summarises the methods to collect data and ICT tools identified as useful to collect and analyse feedback from participant on the four different co-creation stages.

Table 1 - Co-Creation Framework Stages, Methods for Data Collection and Tools for Evaluation

Co-Creation Step	Participant role	Source to collect data	Methods and Tools for evaluation
Co-Initiation	Problem & needs identification Idea generation for ways to solve problems (informed by data)	- Social Media - User workshops - Public meetings - Social Media	- R statistical analytics - TwitteR - Weka - Other social media analytics
Co-Design	Input to service design	- User workshop - Continued participation - Focus groups - User Experience and User Interface testing	- Survey (Questionnaire and interviews)
Co-Implementation	Uploading user data Suggesting changes to data sets Data creation for a service	- Web and Phone Statistics (Number of access, download, etc.) - Portal's Feedback channels - Web and Phone Statistics (Number of access, download, etc.)	- Web Analytics - Survey (Questionnaire and Interviews) - R statistical analysis - TwitteR - Weka - Other social media analytics
Co-Evaluation	Providing feedback to service quality, usefulness, etc.	- Social Media - Portal's Feedback channels	- Web Analytics - Survey (Questionnaire and Interviews)
	Reporting data on service operation	- Web and Phone Statistics (Number of access, download, etc.)	- R statistical analysis - TwitteR - Weka - Other social media analytics

The selected sources and methods are described below in the next section 3.1.1.

3.1.1 Selected Co-Creation Tools and Methods Overview

3.1.1.1 User workshop

A workshop is an activity that aims to introduce something (idea, skill, product, etc.) to potential interested people. Workshops range from short workshops (45 minutes or less) to one or more days. A critical aspect of user workshop feedback process is the inclusion of end-users in the creation of the new data driven public services.

The overall structure user workshop planned to be conducted on the pilots is described at Table 3:

Table 2 - User Workshop for Co-Creation

£	Stage	Number of questions
1	Introduction	This stage has the aim to describe the background to participants and clarify questions. A general objective is given to participants
2	Silent Ideation	In this stage participants brainstorm to produce ideas. They can take notes and be prepared to share the ideas with other people on the workshop.
3	Group Discussion	In this this stage there is a group discussion of all the participants, presenting the ideas that they had during the silent ideation. It is allowed to participants give commentaries or insert inputs from other participants ideas presentations (discussion).

The three stages can be repeated as many times and sessions as needed. This way is possible to all individuals provide valuable inputs on the design and structure of the new public service. The user workshop can be used on all the four stage of Co-Creation framework.

The user workshops can produce, as example, the follow outcomes:

     • List of issues with the new service;

     • List of potential solutions;

     • Basic thoughts on the usability and functionality of the service;

     • User stories;

     • List of user personas of individuals who could use the service, and

     • Any other information which may come out of the workshop organically.

After participating on the user workshop, a survey can be conducted to identify the participants' feedback.

3.1.1.2 Continued participation

Sometimes workshops need to happen several times due some reasons (maturity of discussion, lack of resources, time, etc.). Continued participation is the method that monitors how many people participate in future workshops versus those who refused to participate (Joyce and Kraut 2006).

3.1.1.3 Survey Research

Figure 5 – Exploratory and Explanatory approaches at Co-Creation Evaluation Surveys

A survey is a systematic poll of questions made to some group, or individually, in order to collect answers about some problem, observation, etc. Glasow (2005) considers two types of data collection methods:

1. Written (questionnaire); and,
2. Verbal (interviews).

Both types will be conducted with different objectives and different periods of co-creation evaluation.

Based on the co-creation evaluation, survey research will be used in all of the co-creation types. Interviews will be used to examine the co-initiation and co-evaluation, while questionnaire will be used on the co-design and co-implementation.

Interviews using open-ended questions to seek understanding and interpretation in different situation. In the co-initiation stage, interviews are aimed at identifying problems and to generate ideas for problem solving. In the co-evaluation stage, interviews are aimed at understanding the questionnaire results as well as to seek in-depth information of the several issues found in the questionnaire. Normally, only specific group of stakeholders are called to participate, taking in consideration there is a low degree of statistical validity due its low number and less broader profile of participants. Also there is a higher chance of bias on the answers in comparison of questionnaires.

Confidential information can be collected, need of resource, time, etc. are spent and less errors happens on this type of survey.

Questionnaires are using closed-ended questions to gather highly standardised data. It will be conducted so the target respondents can give more generic inputs of design and implementation on the co-creation of public policies processes. Normally questionnaires are given to several people to reach substantial statistical validity of hypothesis, for example already observed on the qualitative approach of survey (interview).

Before conducting the survey (questionnaire or interview), Glasow (2005) suggests to create a model that identifies the expected relationships among the variables (independent and dependent). Variables are used to define the scope of study, however, cannot be explicitly controlled by the researcher. Then is possible to test the model against observations of the phenomena analysing the data collected on interview or questionnaire.

The survey design

In designing the survey research, Levy and Ellis (2006) suggests two steps that are, sampling strategy and the procedure to obtain the representativeness of the population, including ensure reliability and validity. The nature of this evaluation process is in between exploratory and explanatory; and for this purpose, the mixed method, qualitative and quantitative will be used during whole processes. The sampling strategy should follows these methods. Population for this survey research will be all stakeholders in each pilot, or in general, units of observation will be the Public Administration's employees, citizens and companies' employees which use the OGI innovation ecosystem. Participants of this co-creation survey should represents these units of observation.

The sample techniques will be different for each co-creation type. The co-initiation and co-design will use the non-probability sampling, and the co-implementation and co-evaluation will use the probability sampling. The non-probability sampling is used because in the two first types of co-creation, the respondents will be selected by the ones that actually use the OGI tools and framework to identify the problems and propose the improvement of the public services based on the LOSD from PAs, citizens and companies.

For co-implementation and co-evaluation, survey participants will be selected randomly, in order to reach stronger analysis to justify the use of OGI innovation ecosystem. The challenges of this technique will be to minimise sampling bias and achieve a good representativeness. To deal with these issues, each pilot partner need to really carefully acknowledge the stakeholders of the system, for example number of employee, the demography of users (citizens and businesses), structure of the companies, etc. The list of questions aims to help partners addressing this issue.

3.1.1.4 Overview of Pilots' Co-Creation Steps, Tools, Methods, and Results Description

The Table 3 below summarises the selected co-creation tools and methods chosen by each of pilots to implement and evaluate the co-creation steps. Further, a brief description of results from each of tools and method.

Table 3 – Overview of Pilots' Selected Co-Creation Tools and Methods

Pilot	Co-Creation Steps in Year 2	Co-Creation Methods and Tools for Evaluation	Brief Description of Results
Pilot 1 The Greek Ministry of Administrative Reconstruction **(Greece)**	**Co-Implementation**	Continued participation from User workshop	Update in application design and data quality improvement.
	Co-Evaluation	End-User acceptance and outcomes survey	Statistical analysis of Pilot feedback from participants
Pilot 2 Enterprise Lithuania **(Lithuania)**	**Co-Implementation**	Online continued participation from User workshop	Update in application design, new data sets included and data quality improvement.
	Co-Evaluation	End-User acceptance and outcomes survey	Statistical analysis of Pilot feedback from participants
Pilot 3 Tallinn Real Estate **(Estonia)**	**Co-Implementation**	Hackathon event to exploit the code and data sets	List of ideas from Hackathon participants
		Online discussion via Github about code and data sets by Hackathon participants	Github statistical analysis (views, forks, changes) and list of suggestions in code and data sets
	Co-Evaluation	End-User acceptance and outcomes survey	Statistical analysis of Pilot feedback from participants
Pilot 4 Trafford Council *Worklessness* **(England)**	**Co-Implementation**	User workshop	Update in application design and data quality improvement.
	Co-Evaluation	End-User acceptance and outcomes survey	Statistical analysis of Pilot feedback from participants
Pilot 5 The Flemish Environment Agency **(Belgium)**	**Co-Implementation**	User workshop	Update in application design and data quality improvement.
	Co-Evaluation	Didn't performed an evaluation because application is under review.	Didn't performed an evaluation because application is under review.
Pilot 6 Marine Institute **(Ireland)**	**Co-Implementation**	User workshop	Update in application design and data quality improvement.
	Co-Evaluation	Didn't performed an evaluation because application is under review.	Didn't performed an evaluation because application is under review.

3.2   Pilots' Data Quality Evaluation Methodology

To evaluate the implementation of OGI Data Quality in the third Year we created a Data Quality Questionnaire. The Data Quality Questionnaire is inspired in the Open Data Institute blog post "Exploring Open Data Quality (https://theodi.org/blog/exploring-open-data-quality) by Leigh Dodds (Dodds, 2016). This Table 4 describes the data quality attributes, its description, the number of questions in the questionnaire and the source where they were collected or inspired. The questionnaire with all the questions is presented in the Table 15. The link to the form can be accessed   here: https://docs.google.com/forms/d/e/1FAIpQLSeCl3flPZIGYEWhhASTEnwF6GkMERIxZ8OWjkKpJCmqRlLwoA/viewform.

Table 4 – Pilots' Data Quality Questionnaire

Data Quality Section	Description	Number of questions	Source
Discoverability and Usability	This sections aims to identify the application characteristics that will influence in some attributes of data qualities below. For example, if the website or application has an option for downloading data. This influences the level of granularity.	7 questions	Created by authors.
Granularity	This section aims to identify the level of granularity. The desired level of granularity varies according to the problem being addressed. For example, if the data is in aggregated level (average sex instead of individual data) or timely option for download (per year average, per month, per week, per day).	3 questions	Frank and Walker (2016)
Intelligibility	This section aims to identify immediate intelligibility. This gives quality to the data in the sense of readability and increase immediate understand by users. For example, if there is a documentation giving context for humans understand the data and see how is possible to use it in human or machine ways.	1 question and open for commentary	
Trustworthiness	This section aims to identify data quality attributes that increase the trust in data. For example, if the source is trusted, if who is in charge of data is aware about how it was collected and created.	5 questions	
Linkable to other data (5 Stars LOD)	This section aims to identify data quality attributes to Linking the data to other opened datasets. For example, if the data is in CSV or RDF format.	4 questions	Bizer et al (2009)
15 Open Data Principles	This section aims to identify data quality attributes related with the 15 Open Data Principles such as timely, accessible and primary.	9 questions	OPENGOV DATA (2018)

3.3   Pilots' Acceptance and Outcomes Evaluation Methodology

3.3.1 Pilots' Acceptance Selected Methodology

A combination of theories will be employed to create an evaluation of user acceptance and intention of use for OGI. The list of theories is deep described in the report D4.3 and is lited below:

1. TAM 1 by Davis (1989);

2. TAM 2 by Venkatesh and Davis (2000);

3. TAM 3 by Venkatesh and Bala (2008);

4. UTAUT Framework by Venkatesh, Morris et al. (2003); and,

5. IS Success Framework by Delone and McLean (2003).

The

presents variables and (general) measured items for the pilots evaluation. However, as each pilot has their own characteristics, e.g. objectives, target audiences, etc. the questionnaire created for the evaluation may be different to each pilot. The questionnaires of each pilot are described in the Section 6.2.

Table 5 - User Acceptance Evaluation for OGI

Variable	Measured Items	Source
Job Relevance (JR)	OGI toolkit makes mine and my colleagues job tasks easier to be accomplished. In my job, usage of the system is important. In my job, usage of the system is relevant.	Venkatesh and Davis (2000)
Output Quality (OQ)	The quality of the output I get from the OGI toolkit is higher compare to previous system. I have no problem with the quality of the OGI toolkit's output.	Venkatesh and Davis (2000)
Result Demonstrability (RD)	I have no difficulty telling others about the results of using the OGI toolkit. I believe I could communicate to others the consequences of using the OGI toolkit. The results of using the OGI toolkit are apparent to me. I would have difficulty explaining why using the OGI toolkit may or may not be beneficial.	Venkatesh and Davis (2000)
Perceived Ease of Use (PEU)	My interaction with OGI toolkit is clear and understandable. OGI toolkit usage does not require a lot of skills. I find it easy to get the OGI toolkit to do what I want it to do. I find the OGI toolkit to be easy to use.	(Davis 1989)
Perceived Usefulness (PU)	Using OGI toolkit improves my performance in my job tasks. Using OGI toolkit enhances my effectiveness in my job tasks. Using OGI toolkit in my job increases my productivity.	(Davis 1989)

	I find the OGI toolkit to be useful in my job.	
Intention to Use (IU)	If I have access, I would use OGI toolkit.	(Davis 1989)

3.3.1.1 Pilots' Outcomes Selected Methodology

The outcomes evaluation is divided in Transparency, and, Reduction of Administrative Burden and Costs.

3.3.1.2 Transparency

Transparency has been used as a magic concept by government and public managers (Ward 2014). Your usage include as synonymous with accountability (Bovens 2007), openness (Coglianese 2009), open government data (Frank and Oztoprak 2015) as example. Due no clear definition and largely used by academics, this project take in consideration transparency as a concept of an unilateral process of disclosure of data, information, actions that an organisation has been conducting (Peixoto 2013).

Transparency is a phenomenon that can lead to accountability, but does not guarantee any concrete result of justice or mobilisation, just public exposure to scrutiny (Fox 2007). In addition to the discussion of what is and what is not transparency, there are only a few models try to explain and evaluate transparency. Matheus and Janssen (2013) proposed an evaluation model for transparency initiatives considering transparency as a multidimensional object based on many factors influencing two main dimensions: interpretation and accessibility. Facilitating conditions were added considering background and profile of users influencing transparency.

The OGI project will test if factors and facilitating conditions influence positively or negatively transparency dimensions. These factors designed as propositions with signs toward the dimensions shows that those factors are assumed, but not yet know. The transparency model used in OGI evaluation is deep described in the section 3.6.1 of D4.3. Below, the table summarising the attributes evaluated and the graphical view of Transparency Model of Matheus and Janssen (2013).

Table 6 - Adapted Transparency Model for OGI Evaluation

Dimension	Factor	P. #	Proposition
Interpretation	*Ibid*	P1	Easier interpretation of data results in higher transparency
	Examples of usage	P2	presence of examples of the website product, the higher has a positive influence on interpretation.
	Simple Language used	P3	Simple language has significant positive influence on transparency
	Data Quality	P4	higher information quality has a significant influence on interpretation
	Updatedness of Information	P4a	higher updated information has a significant influence on data quality.
	Completeness	P4b	higher data completeness has a significant influence on data quality
	Accuracy	P4c	higher data accuracy has a significant influence on data quality
Accessibility	*ibid*	P5	higher accessibility has a significant positive influence on transparency
	Simple Language	P5a	Simple language has significant positive influence on transparency
	Data Overload	P5b	data overload has a significant negative influence on accessibility
	Adhesion to Standards	P5c	Adhesion to standards has a significant positive influence on accessibility
	Unified Technology	P5d	Unified use of technology has positive influence on accessibility
Facilitating Conditions	Experience	6a	the influence of interpretation on transparency will be moderated by experience
		6b	*the influence of accessibility on transparency will be moderated by experience*
	Age	7a	the influence of interpretation on transparency will be moderated by age
	Level of Education	8a	the influence of interpretation on transparency will be moderated by the level of education
		8b	the influence of accessibility on transparency will be moderated by the level of education
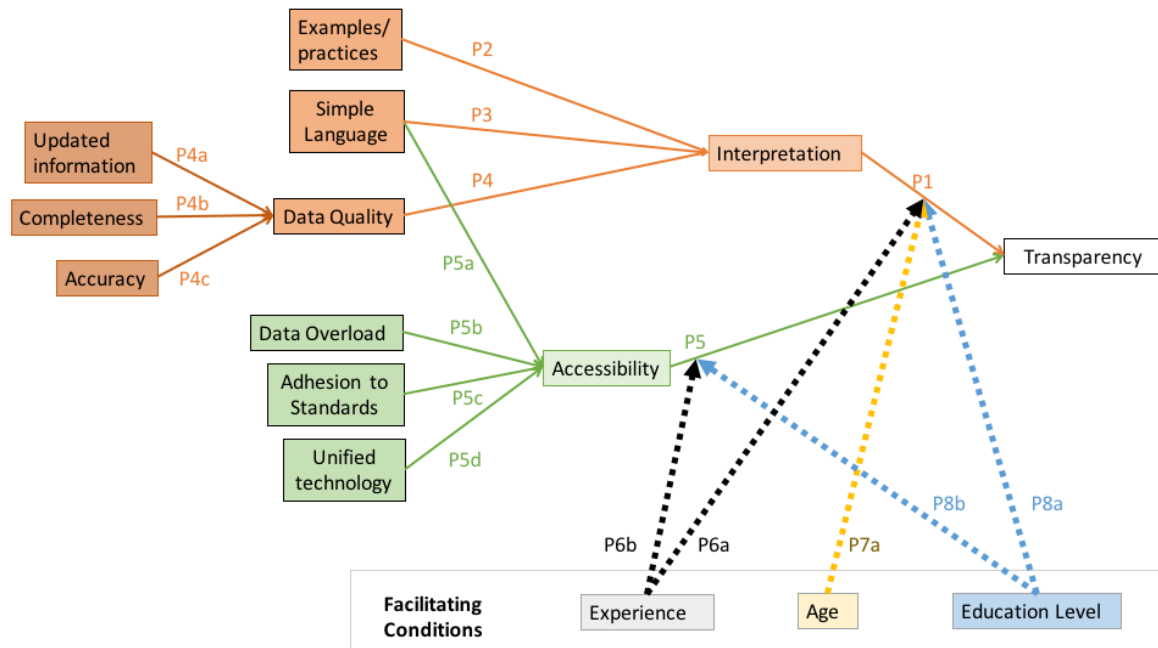
Figure 6 - Adapted Transparency Model for OGI Evaluation

3.3.1.3 Administrative Burden

Governments are facing issues to delivery more public services with less financial resources, time and people. Due these reasons, OGI will evaluate how OGI innovation ecosystem influences on reducing administrative burden. The evaluation methods are based on the Cost Benefit Assessment (CBA) approach, following the Study on eGovernment and the Reduction of Administrative Burden - SMART 2012/0061 (Gallo, Giove et al. 2014), a taxonomy of costs and benefits has been adapted.

The dimension considered for both Public Sector and Users was Benefits, divided in two categories: direct and indirect benefits. The reason to focus only on Benefits is because OGI consortium is interested on the benefits that OGI innovation ecosystem can provides. It means that this section is focusing on the outcomes. Indeed the description of the pilots already describe a situation of losses and increasing cost without a conformable increase of efficiency on public service delivery. It means that any evolution, re-engineering of public service delivery will improve the current situation. If the OGI innovation ecosystem is not working properly, this will be evaluated on the OGI ICT toolkit, OGI co-creation framework and mainly at acceptance evaluation.

The figure below summarises the focal point between public sector and users outcomes.
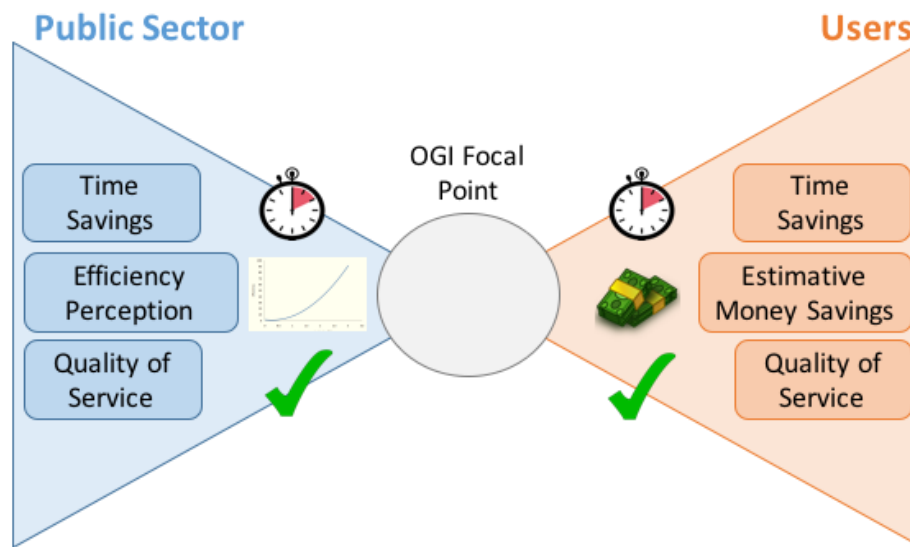
Figure 7- OGI Focal Point

The Table 7 summarises the adapted taxonomy for Costs and Benefits of OGI innovation ecosystem for stakeholders.

Table 7 - Taxonomy for Benefits for OGI innovation ecosystem stakeholders

Dimension	Categories	Sub-Categories	Description
Benefits for Public Sector	Direct Benefits	Time Savings	Includes all monetizable benefits arising from improvements on public service delivery, including time savings before/after OGI innovative ecosystem implementation.
	Indirect Benefits	Efficiency perception	Encompass non monetizable benefits related to a better service delivery and the enhancement of the decision-making process.
		Quality of service	
Benefits to Users (citizens, businesses)	Direct Benefits	Time Saving	Includes all monetizable benefits arising from improvements on public service delivery, including time savings before/after OGI innovative ecosystem implementation.
	Indirect Benefits	Estimative Money Saving	
		Quality of service	Encompass non monetizable benefits related to a better service delivery and the enhancement of the decision-making process.

There was two ways to understand "benefits for Public Sector". First as organisation, and second as people involved on the processes. Taking in consideration the OGI innovation ecosystem, we decided to take approaches depending on pilots. Some pilots have clear definition of Public Sector (organisation and people – civil servants, policy makers, etc.) and users (citizens, businesses, etc.). However, other pilots don't have a clear definition between Public Sector and users, because the users are on the Public Sector (civil servants, policy makers, etc.).

The approach designed below is a guideline that can be changed taking in consideration pilot singularity. The summary of data collection methods is presented at Table 7 and the planned questions of questionnaires and interviews are at section 6.2.

1. **Time savings**

Time savings considers two potential scenarios. If the public service already existed, it is possible to measure how much time in days or hours a civil servant or citizen/business person perform the task or receive the public service delivery. The measure can be collected with log observation of delivery, researcher observation of process (in person) or via survey (questionnaire and/or interview).

If the public service doesn't exist and a new one will be created, we will take in consideration the measures comparing similar processes or collect data from users (civil servants, citizens, business person, etc.) from a perception or expectation perspective. Then a Likert scale based on level of satisfaction with time spent on public service (1- very dissatisfied to 5-very satisfied).

2. **Efficiency Perception**

Efficiency perception considers public sector data from people that uses the OGI innovation ecosystem. It means no quantitative data from performance, for example, before OGI 10 minutes, after OGI 5 minutes, 50% of improvements. The objective is to identify if public sector users (civil servants, public managers, etc.) has the (subjective) perception that improved efficiency or not. To measure efficiency perception, a questionnaire will be conducted on public sectors. Questionnaire uses Likert scale for level of agreement (1 strongly disagree to 5- strongly agree) to identify efficiency perception.

3. **Estimative Money Savings**

Avoided expenses cannot be 100% sure about a model for all the users. Taking this in consideration, the approach used a perception or expectation perspective for expenses that he used before/after implementation of OGI innovation ecosystem. A questionnaire will collect data based on a Likert scale of agreement (1 strongly disagree to 5- strongly agree) and open question asking to provide how much expenses were avoided, for example 10 euros. Further, can be asked what type of services, products, etc. were avoided to expense, for example, consultancy, ticket for public transportation, gasoline, etc.

4. **Quality of Service**

Quality of service considers two potential scenarios. If the public service already existed, it is possible to measure the level of quality using Likert scale (1-poor to 5- excellent) and comparison between past and current product/service (1- much worse to 5- much better). If any issue was identified on this questionnaire, further interviews will be conducted looking for identify and measure the issues.

If the public service doesn't exist and a new one will be created, we will take in consideration the measures comparing similar processes or collect data from users (civil servants, citizens, business person, etc.) from a perception or expectation perspective. Then a Likert scale based on level of satisfaction with quality of public service (1- very dissatisfied to 5-very satisfied).

3.3.1.4 Pilots' Acceptance and Outcomes Evaluation Questionnaire

In this section, we surveyed Pilots' application end users, mostly talking about their perception of using the OGI pilots Applications. The categories collected and evaluated are described in the Table 8:

Table 8 – Pilots' Outcomes Evaluation Questionnaire

Outcomes Categories	Description	Number of questions	Source
User Information	This section aims to introduce and explain the pilot application, describe the survey and identify general background information. For example, key questions if end-user is aware about Linked Open Data, the OGI Project and the specific pilot end-user is using.	**2 questions**	Created by authors
User Acceptance	This sections aims to identify if End-Users accepts the functionalities that pilot applications offer. For example, if the functionalities are in accordance with end-users needs, or, if the app does not crash.	**13 questions** and an open question in the final for general comments.	Adapted from Davis (1989); Venkatesh and Davis (2000); Venkatesh and Bala (2008); Venkatesh, Morris et al. (2003); and, Delone and McLean (2003)
Data Sets	This section aims to identify if End-Users accepts the available data sets in the pilot application has the desired or needed data quality standard.	**5 questions** and an open question in the final for general comments.	Adapted from Dodds (2016) and Matheus and Janssen (2013)
Results	This section aims to identify if End-Users accepts that pilot application can deliver expected results and outcomes. For example, if the pilot application can increase Transparency or can reduce the Administrative Burden and Costs.	**10 questions** and an open question in the final for general comments.	Adapted from Gallo, Giove et al. (2014)

Each pilot had your End-User Questionnaire

1. **Pilot 1 – The Greek Ministry of Administrative Reconstruction (Greece)**

   a. End-User Questionnaire (Section 6.2.1).

2. **Pilot 2 – Enterprise Lithuania (Lithuania)**

   a. End-User Questionnaire (Section 6.2.2)

3. **Pilot 3 – Tallinn Real Estate (Estonia)**

   a. End-User Questionnaire (Section 6.2.3)

4. **Pilot 4 – Trafford Council *Worklessness* (England)**

   a. End-User Questionnaire (Section 6.2.4)

5. **Pilot 5 – The Flemish Environment Agency (Belgium)**

   a. End-User Questionnaire (Section 6.2.5)

6. **Pilot 6 – Marine Institute (Ireland)**

   a. End-User Questionnaire (Section 6.2.6)

3.4 OGI ICT Toolkit Evaluation Methodology

To evaluate the implementation of OGI ICT Toolkit in the third Year we created the ICT Toolkit Questionnaire for the tool created in the Second year, called CubiQL API, described in the WP3 and can be freely download in the OGI Github: https://github.com/OpenGovIntelligence.

One scientific paper and some technical guidelines for standardisation inspired our CubiQL API Evaluation questionnaire and are presented in the follow sections 3.4.2, 3.4.2 and 3.4.3.

The shows the evolution of names and merges of tools following the three years of projects and deliverables (D3.1, D3.2, D3.3, D3.4, D3.5 and D3.6). Table 2 also shows the progress of the development OGI toolkits on each project year.

Σφάλμα! Το αρχείο προέλευσης της αναφοράς δεν βρέθηκε.

The Figure 8 summarizes the OGI Tools and the working flow, since selecting data to be linked until communicating the results with audience.
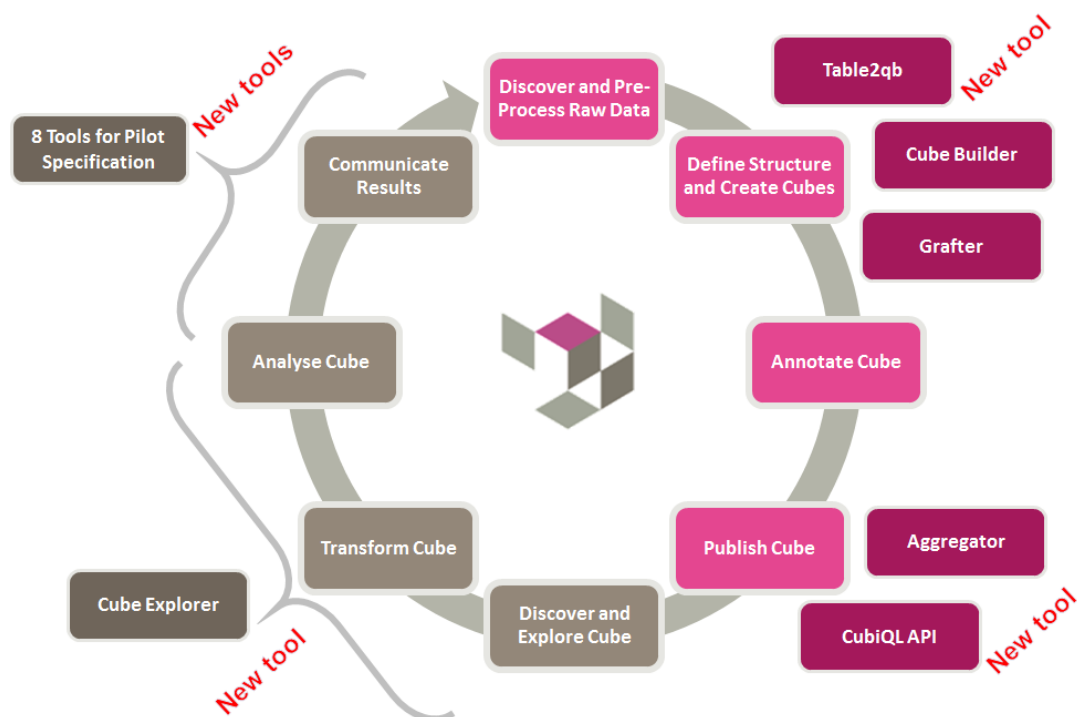
Figure 8- OGI Tools and Working Flow

The

Table 9 shows what are the tools, the links to the OGI Github code source (https://github.com/OpenGovIntelligence) and which are the pilots using them. Note the colors blue, orange and green are connected with the **Σφάλμα! Το αρχείο προέλευσης της αναφοράς δεν βρέθηκε.** and **Σφάλμα! Το αρχείο προέλευσης της αναφοράς δεν βρέθηκε.**.

Table 9 - OGI Tools used in Pilots

Tools	Pilots					
	MAREG (Greece)	Lithuania Enterprise	Trafford (England)	The Flemish Government (Belgium)	Marine Institute (Ireland)	Ministry of Economics (Estonia)
Grafter (Private Tool) www.goo.gl/vaGzLc	X		X			X
Tarql – Cube Builder https://goo.gl/fQ9YQx		X		X	X	
Cube Explorer (NEW) www.goo.gl/WLC6zh		X			X	
Cube Browser www.goo.gl/b57zpX	X					X
Cube Visualizer www.goo.gl/hc9QGj	X					X
CubiQL API (NEW) www.goo.gl/tbZuPg	X	X	x		X	X
Table2QB (NEW) www.goo.gl/JgMKvx	X	X	X	X	X	X
Cube Aggregator www.goo.gl/urSj5V	X	X			X	X
LOSD Machine Learning Component (NEW) https://goo.gl/c2gkV9					X	
SPARQL connector for Exploratory (NEW) www.goo.gl/7AeYVF				X		
Validator (NEW) www.goo.gl/Kn6Bhh	X	X	X		X	X
Assisted Cube Schema Creator (NEW) https://goo.gl/BCLW2s		X			X	
QB Multi-Dimensional Charting		X				
RDF Data Cube Geo-Data Supported for Dashboard						
Data Cleansing Tools	X	X	X	X	X	X
Data Collection Tools	X	X	X	X	X	X
Custom Mappings and Scripts	X	X	X	X	X	X
ShinyR						X

SuperSet + Druid		X			X	

3.4.1 API Evaluation Method

The CubiQL API Questionnaire is partially inspired in the API Evaluation by Michael Barth (2012). The Table 14 describes the OGI ICT Toolkit categories, its description, the number of questions in the questionnaire and the source where they were collected or inspired. The questionnaire with all the questions is presented in the Table 15. The link to the form can be accessed here: https://docs.google.com/document/d/1d6CrQGBaabmM7TsPm1qFiGqfs6DmHn24vooRu71dFJM/edit.

Table 10 – API Evaluation Questions

Characteristic of good APIs	Description
Abstraction Level	The abstraction level defines what details are hidden and which are exposed to the developer by the API.
Comprehensibility	If a developer wants to use an API, he needs to understand how to interact with the API.
Consistency	The design decisions to create the API impact in the use. Developers expect similar design from previous APIs used.
Discoverability	Functionalities must be easy to understand and use. Avoiding developers spending more time learning from API manual instead of creating a script from the scratch.
Learning Barriers	Developers don't have time to read complete documentation. APIs must avoid complex functionalities and easy to learn.

Adapted from Barth (2012)

3.4.2 Standard for Systems and Software Quality Requirements and Evaluation – ISO 25010 and ISO 25012

Evaluation of OGI ICT toolkits is divided in two categories. The first of building blocks and the second for evaluation of cubes design. The summary of data collection and methodology of evaluation is presented at Table 11.

Table 11 - Cube Design and Building blocks data collection and methodology methods of Evaluation

Category	Target groups	Data Collection Approach	Methodology of Evaluation
Product Quality	ICT Partners and IT Department of PAs	Questionnaire and Structured observation of application/website	ISO/IEC 25010
Quality in Use			
System's Data Quality			ISO/IEC 25012

Since the beginning, criteria for evaluation the OGI toolkit needs to be defined. Scientific literature review couldn't provide us an extensive list of standards and requirements organised and structured. ON the other hands, ISO/IEC 25010:2011, the standard for Systems and Software Quality Requirements and Evaluation (ISO/IEC, 2010), presents a structured list of requirements for building blocks and systems, which we considered for cubes design.

ISO 25010 is adopted as the evaluation method for OGI ICT toolkit. ISO 25010 is organised in 8 parameters which are divided into 30 measurement variables presented at Table 12.

Table 12 - OGI Toolkit Requirements for Evaluation

No	Parameter	Description	Measured by	Description
1	Functionality	the degree to which the OGI solution platform provides functions that meet stated and implied needs when used under specified conditions	Functional completeness	the set of functions covers all the specified tasks and user objectives
			Functional correctness	the correct results with the needed degree of precision
			Functional appropriateness	the accomplishment of specified tasks and objectives
2	Performance	the degree to which the OGI solution platform performs relative to the amount of resources used under stated conditions	Time behaviour	the response and processing times and throughput rates of a product or system, when performing its functions, meet requirements.
			Resource Utilization	the amounts and types of resources used by a product or system, when performing its functions, meet requirements.
			Capacity	the maximum limits of a product or system parameter meet

				requirements.
3	Compatibility	the degree to which the OGI solution platform can exchange information with other products, systems or components, and/or perform its required functions, while sharing the same hardware or software environment.	Coexistence	perform its required functions efficiently while sharing a common environment and resources with other products, without detrimental impact on any other product.
			Interoperability	exchange information and use the information that has been exchanged.
4	Usability	the degree to which the OGI solution platform can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use	Appropriateness recognizability	users can recognize whether a product or system is appropriate for their needs.
			Learnability	can be used by specified users to achieve specified goals of learning to use the product or system with effectiveness, efficiency, freedom from risk and satisfaction in a specified context of use.
			Operability	has attributes that make it easy to operate and control.
			User error protection	protects users against making errors.
			User interface Aesthetics	user interface enables pleasing and satisfying interaction for the user.
			Accessability	can be used by people with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use.
5	Reliability	The degree to which the OGI solution platform performs specified functions under specified conditions for a specified period of time.	Maturity	meets needs for reliability under normal operation.
			Availability	operational and accessible when required for use.
			Fault tolerance	operates as intended despite the presence of hardware or software faults.
			Recoverability	recover the data directly affected and re-establish the desired state of the system.
6	Security	the degree to which the OGI solution platform protects information and data so that persons or other products or systems have the degree of data access appropriate to their types and levels of authorization	Confidentiality	ensures that data are accessible only to those authorized to have access
			Integrity	prevents unauthorized access to, or modification of, computer programs or data
			Non-repudiation	proven to have taken place, so that the events or actions cannot be repudiated later

			Accountability	actions of an entity can be traced uniquely to the entity
			Authenticity	identity of a subject or resource can be proved to be the one claimed
7	Maintainability	the degree to which the OGI solution platform can be modified to improve it, correct it or adapt it to changes in environment, and in requirements	Modularity	composed of discrete components such that a change to one component has minimal impact on other components
			Reusability	an asset can be used in more than one system, or in building other assets
			Analysability	possible to assess the impact on a product or system of an intended change to one or more of its parts, or to diagnose a product for deficiencies or causes of failures, or to identify parts to be modified
			Modifiability	effectively and efficiently modified without introducing defects or degrading existing product quality
8	Portability	the degree to which the OGI solution platform can be transferred from one hardware, software or other operational or usage environment to another	Adaptability	can effectively and efficiently be adapted for different or evolving hardware, software or other operational or usage environments
			Installability	can be successfully installed and/or uninstalled in a specified environment
			Replaceability	can replace another specified software product for the same purpose in the same environment

Source: (ISO/IEC, 2010)

The quality in use relates to the impact or outcome of the product when used in particular context and consists of 5 parameters which are divided into 11 measurement variables as shown in

Table 13.

Table 13 - Criteria for Evaluation of Quality in Use

No	Parameter	Description	Measured by	Description
1	Effectiveness	accuracy and completeness with which users achieve specified goals	-	-
2	Efficiency	resources expended in relation to the accuracy and completeness with which users achieve goals	-	-
3	Satisfaction	the degree to which the user needs are satisfied when using the OGI solution platform in a specific context of use	Usefulness	degree to which a user is satisfied with their perceived achievement of pragmatic goals, including the results of use and the consequences of use
			Trust	degree to which a user or other stakeholder has confidence that a product or system will behave as intended
			Pleasure	degree to which a user obtains pleasure from fulfilling their personal needs
			Comfort	degree to which the user is satisfied with physical comfort
4	Freedom from Risk	the degree to which the OGI solution platform mitigates the potential risk of the usage	Economic Risk Mitigation	the potential risk to financial status, efficient operation, commercial property, reputation or other resources in the intended contexts of use
			Health and Safety Risk Mitigation	the potential risk to people in the intended contexts of use
			Environmental Risk Mitigation	the potential risk to property or the environment in the intended contexts of use
5	Context coverage	the degree to which the OGI solution platform can be used with effectiveness, efficiency, freedom from risk and satisfaction in both specified contexts of use and in contexts beyond those initially explicitly identified	Context Completeness	can be used with effectiveness, efficiency, freedom from risk and satisfaction in all the specified contexts of use
			Flexibility	can be used with effectiveness, efficiency, freedom from risk and satisfaction in contexts beyond those initially specified in the requirements

Source: (ISO/IEC, 2010)

During the evaluation, each measurement variable will be assessed from the user perspective, such as public administration offices, citizens and businesses. Their input then will be used to improve the OGI solution platform by the consortium and the revision will be evaluated again during the next stage of pilot.

3.4.3 User Experience (UX) and User Interface (UI) testing

While user experience (UX) is a term that have been used on practice and scientific literature, but hardly deep described or conceptualized. After conducting 275 interviews on the UX area and deep literature review, Law, Roto et al. (2009) realised the reasons due an ill description and conceptualisation:

1. First because broad range of fuzzy and dynamic concepts, including emotional, affective, experiential, hedonic, and aesthetic variables.
2. Second, because flexibility on analysis since single point to a holistic process.
3. Third due the fragmented and theoretical models involved on UX domain.

Hassenzahl and Tractinsky (2006) conceptualizes UX as "*a term associated with a wide variety of meanings ranging from traditional usability to beauty, hedonic, affective or experiential aspects of technology use*" (Forlizzi and Battarbee 2004). Garrett (2010) structures user experience as a project with five dimensions and two product layers (as functionality and as information), from the more abstract to the more concrete: strategy, scope, structure, skeleton and surface. This structured is presented at Figure 9.
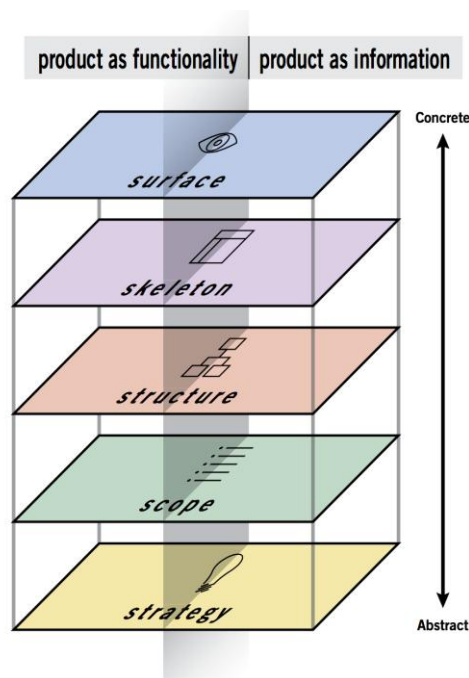
Figure 9 - UX Structure and layers of product and information

Source: Garret (2010)

To improve the usability of software and information systems, the paradigm of user-centred design, International Organization for Standardization (ISO) 13407, Human-centred design processes for

interactive systems, is a standard that provides guidance for user-centred design (Jokela, Iivari et al. 2003).

The ISO 9241-210 replaced the ISO 13407, which aimed to provide guidance on achieving quality in use by incorporating user centred design activities throughout the life cycle of interactive computer-based systems. ISO 9241-210 standard describes 6 key principles that will ensure your design is user centred (Travis 2011):

- The design is based upon an explicit understanding of users, tasks and environments.
- Users are involved throughout design and development.
- The design is driven and refined by user-centred evaluation.
- The process is iterative.
- The design addresses the whole user experience.
- The design team includes multidisciplinary skills and perspectives.

ISO 9241-210 recommends the use of "ripple effect". It means to plan in advance all the possibilities of tools and scenarios of usage before implementing. After implementation, scenario, tools, activities, goals, etc., can change, and influencing on the result. If the plan is well conceptualised, the plan is likely to succeed. The Figure 10 describe an example path taken due changes of plans made during the implementation.
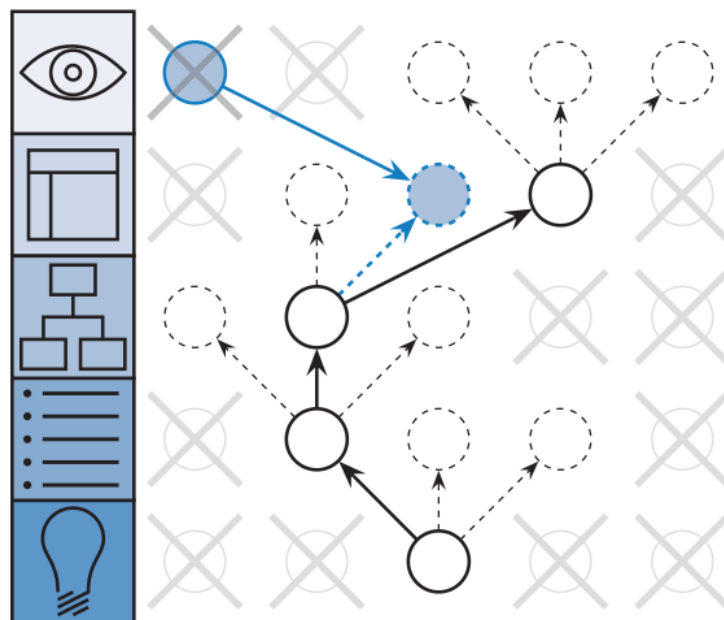
Figure 10 - The ripple effect

Source: Garret (2010)

Further the explanations given on ISO 9241-210 (Travis 2011) and (13407 Travis 2011), on both standards, there is no clear guidelines of steps to implement UX. Checking this limitation, Jokela et al (1999) proposed a guideline to fill this blank comparing both standards. The guideline has a 6 steps:

1. Identify need for human-centred design;
2. Understand and specify the context of use;
3. Specify the user and organisational requirements;
4. Produce design solutions;
5. Evaluate design against requirements (loop to step 1 if not reach desired requirement); and,
6. System satisfies specified user and organisational requirements.
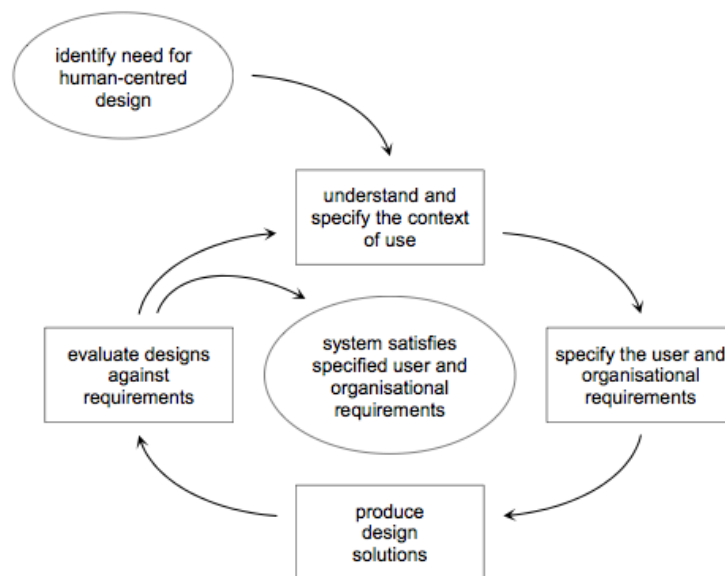
Figure 11 - UX implementation and evaluation steps

Source: Jokela et al. (2003)

Besides the steps to conduct implementation of UX, it was also identified by Jakola et al. (1999) that measures are not created to identify efficiency or any goal that should be reached. For this, we consider to use the ISO/IEC 25010:2011 (ISO/IEC 2010)

The ISO/IEC 25010:2011 has a parameter called "usability" where 6 measures define if there is or not usability on the system. If consortium identify the need to improve this evaluation, the Albert and Tullis (2013) evaluation method can be used as auxiliary. We consider that User Interface (UI) is a complementary effect of UX and associated with look, feel and interactivity of system. It is already measured on the UX standards and ISO 25010:2011, in special on the evaluation quality of use.

3.4.4 OGI CubiQL API Evaluation Overview

Table 14 – OGI CubiQL API Evaluation Questionnaire

OGI ICT Toolkit Categories	Description	Number of questions	Source
User Information	This section aims to introduce and explain the ICT Toolkit, describes the survey and identify general background information about developers. For example, key questions if end-user is aware about the OGI CubiQL API.	**3 questions.**	Created by authors.
Functionality	This section aims to identify the degree to which the OGI CubiQL API provides functions that meet stated and implied needs when used under specified conditions	**5 questions** and an open question in the final for general comments.	Adapted from Barth (2012); ISO/IEC 20510:2010 (2010); Jokela et al (1999)
Performance	This section aims to identify the degree to which the CubiQL API performs relative to the amount of resources used under stated conditions	**4 questions** and an open question in the final for general comments.	Adapted from Barth (2012); ISO/IEC 20510:2010 (2010);
Compatibility	This section aims to identify the degree to which the CubiQL API can exchange information with other products, systems or components, and/or perform its required functions, while sharing the same hardware or software environment.	**3 questions** and an open question in the final for general comments.	Adapted from Barth (2012); ISO/IEC 20510:2010 (2010);
Usability	This section aims to identify the degree to which the CubiQL API can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use	**7 questions** and an open question in the final for general comments.	Adapted from Barth (2012); ISO/IEC 20510:2010 (2010);
Reliability	This section aims to identify the degree to which the CubiQL API performs specified functions under specified conditions for a specified period of time.	**3 questions** and an open question in the final for general comments.	Adapted from Barth (2012); ISO/IEC 20510:2010 (2010);

4   Conclusions

The evaluation has four areas: Co-creation, ICT Toolkit, Acceptance of ICT Toolkit and Outcomes. The evaluation methodology has been updated based on the insights gained from the first and second year.

The co-creation will be evaluated using the same framework used during first and second year, to compare the evolution and changes made on pilots influenced by the participation of pilot's stakeholders.

The end-user acceptance survey has been redesigned to contain the OGI specific parts developed during the third year. Data quality has the same questionnaire from previous years, to track the advances in the pilots during the years, in special, the third year.

The ICT toolkit evaluation has been updated to include questions in the questionnaire to evaluate the new tools developed during the third year. Finally, the part about data quality is new, given its importance.

The pilots' outcomes will be evaluated will use mixed approach to evaluate transparency, administrative burden such as cost and time reduction.

5   References

Dodds, Leigh (2016). **Exploring Open Data Quality**. Open Data Institute Website (https://theodi.org/blog/exploring-open-data-quality). Published in: 26/10/2016. Accessed in: 26/01/2018.

Barth, Michael (2012). **API Evaluation: An Overview of API Evaluation Techniques**. Michael Bart Blog A portfolio Blog about Software Development (https://www.michaelbarth.net/). Paper available at: https://www.michaelbarth.net/files/publications/api-evaluation.pdf. Published in 2012. Accessed in: 28/01/2018.

OPENGOVDATA (2018). **Eight principles of open government data**. Available at: The annotated 8 Principles of Open Government Data Website (https://opengovdata.org/) from a meeting in 7th-8th December 2007. Accessed in: 26/01/2018.

Bizer, C., Heath, T., & Berners-Lee, T. (2009). **Linked data-the story so far**. Semantic services, interoperability and web applications: emerging concepts, 205-227.

Frank, M., & Walker, J. (2016). **User Centred Methods for Measuring the Value of Open Data**. The Journal of Community Informatics, 12(2).

Brooke, J. (1996). **SUS-A quick and dirty usability scale**. Usability evaluation in industry, 189(194), 4-7.

Bangor, A., Kortum, P. T., & Miller, J. T. (2008). **An empirical evaluation of the system usability scale**. Intl. Journal of Human–Computer Interaction, 24(6), 574-594.

Joyce, E., & Kraut, R. E. (2006). **Predicting continued participation in newsgroups**. Journal of Computer-Mediated Communication, 11(3), 723-747.

Glasow, P. A. (2005). **Fundamentals of survey research methodology**. Retrieved January, 18, 2013.

Levy, Y. and T. J. Ellis (2006). **A systems approach to conduct an effective literature review in support of information systems research**. Informing Science: International Journal of an Emerging Transdiscipline 9(1): 181-212.

Delbecq, Andre L., Andrew H. Van de Ven, and David H. Gustafson. **Group techniques for program planning: A guide to nominal group and Delphi processes**. Scott Foresman, 1975.

20510:2010, ISO/IEC. (2010). **Systems and Software Engineering—Systems and Software Product Quality Requirements and Evaluation (SQuaRE)—System and Software Quality Models**. Geneva, International Organization for Standardization.

Davis, F. D. (1989). **Perceived usefulness, perceived ease of use, and user acceptance of information technology**.MIS quarterly: 319-340.

Davis, F. D., R. P. Bagozzi and P. R. Warshaw (1989). **User acceptance of computer technology: a comparison of two theoretical models**. Management science 35(8): 982-1003.

DeLone, W. H. and E. R. McLean (1992). **Information systems success: The quest for the dependent variable**. Information systems research 3(1): 60-95.

Delone, W. H. and E. R. McLean (2003). **The DeLone and McLean model of information systems success: a ten-year update**. Journal of management information systems 19(4): 9-30.

Venkatesh, V. and H. Bala (2008). **Technology acceptance model 3 and a research agenda on interventions**. Decision sciences 39(2): 273-315.

Venkatesh, V. and F. D. Davis (2000). **A theoretical extension of the technology acceptance model: Four longitudinal field studies**. Management science 46(2): 186-204.

Venkatesh, V., M. G. Morris, G. B. Davis and F. D. Davis (2003). **User acceptance of information technology: Toward a unified view**. MIS quarterly: 425-478.

Ward, R. (2013). **The application of technology acceptance and diffusion of innovation models in healthcare informatics**. Health Policy and Technology 2(4): 222-228.

Ward, S. J. (2014). **The magical concept of transparency**. Ethics for digital journalists: Emerging best practices: 45-58.

Bovens, M. (2007). **Analysing and assessing accountability: a conceptual framework**. European law journal 13(4): 447-468.

Coglianese, C. (2009). **The transparency president? The Obama administration and open government**. Governance 22(4): 529-544.

Frank, M. and A. A. Oztoprak (2015). **Concepts of Transparency: Open Data in UK Local Authorities**. Proceedings of the International Conference for E-Democracy and Open Government 2015 (CeDEM15).

Peixoto, T. (2013). **The Uncertain Relationship between Open Data and Accountability: A Response to Yu and Robinson's' The New Ambiguity of Open Government'**.

Matheus, R. and M. Janssen (2013). **Transparency of civil society websites: towards a model for evaluation websites transparency**. Proceedings of the 7th International Conference on Theory and Practice of Electronic Governance, ACM.

Matheus, R. and M. Janssen (2015). **Transparency Dimensions of Big and Open Linked Data**. Open and Big Data Management and Innovation. M. Janssen, M. Mäntymäki, J. Hidders et al., Springer International Publishing. 9373: 236-246.

Matheus, R., M. M. Ribeiro and J. C. Vaz (2012). **New perspectives for electronic government in Brazil: The adoption of open government data in national and subnational governments of Brazil**. Proceedings of the 6th International Conference on Theory and Practice of Electronic Governance, ACM.

Fox, J. (2007). **The uncertain relationship between transparency and accountability**. Development in Practice 17(4-5): 663-671.

Gallo, C., M. Giove, J. Millard, R. Kare and V. Thaarup (2014). **Study on eGovernment and the Reduction of Administrative Burden**. Luxembourg, Luxembourg. doi 10: 42896.

Law, E. L.-C., V. Roto, M. Hassenzahl, A. P. Vermeeren and J. Kort (2009). **Understanding, scoping and defining user experience: a survey approach**. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM.

Hassenzahl, M. and N. Tractinsky (2006). **User experience-a research agenda**. Behaviour & information technology 25(2): 91-97.

Forlizzi, J. and K. Battarbee (2004). **Understanding experience in interactive systems**. Proceedings of the 5th conference on Designing interactive systems: processes, practices, methods, and techniques, ACM.

Garrett, J. J. (2010). **Elements of user experience, the: user-centered design for the web and beyond**, Pearson Education.

Jokela, T., N. Iivari, J. Matero and M. Karukka (2003). **The standard of user-centered design and the standard definition of usability: analyzing ISO 13407 against ISO 9241-11**. Proceedings of the Latin American conference on Human-computer interaction, ACM.

Travis, D. (2011). **ISO 13407 is dead. Long live ISO 9241-210**. London, UK: Userfocus Ltd., June 6.

Albert, W. and T. Tullis (2013). **Measuring the user experience: collecting, analyzing, and presenting usability metrics**, Newnes.

6 Annexes

6.1 Data Quality Questionnaire

Table 15 – Pilots' Data Quality Questionnaire

Data Quality Section	#	Question	Answer
A- Discoverability and Usability	1	There is a (pre-release) version of an application already:	( ) Yes ( ) No If No, please skip to section B- Granularity.
	2	The application contains links to the data sources	( ) Yes ( ) No
	3	The application contains a searchable list of data sources that are used	( ) Yes ( ) No
	4	The application contains an option to download the data	( ) Yes ( ) No
	5	The application contains an option to download the data in multiple formats	( ) Yes ( ) No
	6	The application contains an option to download selected parts of the data	( ) Yes ( ) No
	7	The application allows the user to preview and interact with the data	( ) Yes ( ) No
B- Granularity	8	Your data includes only aggregated data (e.g. national averages)?	( ) Yes ( ) No
	9	Your data includes individual unit level data, but without generic class data (data on a small, transactional level)	( ) Yes ( ) No
	10	Your data includes generic class data (The data also includes information about different subsets within)	( ) Yes ( ) No
C- Intelligibility	11	Is there existing supporting documentation for the data you used?	( ) Supporting documentation exists, but has to be found separately ( ) Supporting documentation can be found at the same time as the data (e.g. right next to the link for the data) ( ) Supporting documentation can be immediately accessed from within the data set, but it is not context sensitive ( ) Supporting documentation can be immediately accessed from within the data set, and is context sensitive.
		If there was no supporting documentation, how did you deal with these datasets?	Open question.

D- Trustworthiness	12	I know how the data I used was collected	( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree
	13	I know how the data I used was processed	
	14	The data I used was published by a trusted source	
	15	The data I used is realistic	
	16	The data I used is consistent with external sources	
E- Linkable to other data (5 Stars LOD)	17	The data I used was available in a structured format (e.g. xls)	( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree
	18	The data I used was available in a non-proprietary open format (e.g. csv)	
	19	The data I used contained URLs to denote external things (e.g. RDF)	
	20	The data I used linked to other data to provide context	
F- 15 Open Data Principles	21	The data is complete (all data that is not subject to valid privacy, security or privilege reasons is opened)	( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree
	22	The data is primary (collected at the source, not in aggregate form)	
	23	The data is made available as quickly as necessary to preserve value for the end-users	
	24	The data is accessible (for the widest range of users; for the widest range of purposes)	
	25	The data is non-discriminatory (available to anyone, no registration needed)	
	26	The data is license-free (not subject to copyright concerns etc.)	
	27	The data is permanent (made available at a stable location indefinitely)	
	28	The data is safe to open (doesn't contain executable content)	
	29	The data is designed with public input (the user decides how he can access the data)	

6.2 End-User Questionnaires

6.2.1 Pilot 1 – The Greek Ministry of Administrative Reconstruction (Greece) End-User Questionnaire

<div align="center">

OGI Evaluation Questionnaire

MAREG Pilot App End Users – 2018

</div>

This questionnaire is aimed to be filled by End-Users who have used the applications developed within the pilots of H2020 OpenGovIntelligence (OGI) project. When answering the questions, the application developed using the OGI Toolkit, named here as MAREG Pilot App, should be taken into account. The following topics will be asked:

- General background information;
- Data sets; and,
- Resulting Application (App developed using the OGI toolkit).

More Information about MARE Pilot APP (http://wapps.islab.uom.gr/CubeVisualizer/vehicles/**)**

<div align="center">

A. **General Background Information**

</div>

1. **How familiar are you with open data applications?**
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

2. **What is your role or position in terms of Vehicles Cube App?**
A: _____

<div align="center">

B. **Acceptance of the Vehicles Cube App**

</div>

3. **The Vehicles Cube App provides all the functionalities I am interested in**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

4. **All functions in the Vehicles Cube App work properly**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

5. **The Vehicles Cube App recovers well from crashes**
( ) The Vehicles Cube App didn't crash
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

6. **The Vehicles Cube App helps me to achieve my goals**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

7. **My interaction with the Vehicles Cube App was satisfying**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

8. **The Vehicles Cube App is useful to me**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

9. **My interaction with the Vehicles Cube App is clear and understandable**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

10.   **The Vehicles Cube App design is adequate**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

11.   **I have sufficient skills to use the Vehicles Cube App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

12.   **The Vehicles Cube App does not require high level technical knowledge**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

13.   **The Vehicles Cube App will be accepted by my peers**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

14.   **Using the Vehicles Cube App can be hard for the average user**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

15.   **The Vehicles Cube App is easy to use**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about acceptance?
_____
_____
_____

C.   Vehicles Cube App Data Sets

16.   **The data in the Vehicles Cube App are accessible**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

17.   **The data in the Vehicles Cube App is inadequate**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

18.   **The data in the Vehicles Cube App are accurate**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

19.   **A lot of time is needed to find the information I am looking for regarding vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

20.   **I am able to find all the information I'm looking for when using the Vehicles Cube App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about data sets?
_____
_____
_____

D. Vehicles Cube App results

21.   **The Vehicles Cube App has a clear visualization**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

22.   **The Vehicles Cube App helps to do my job about government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

23.   **The Vehicles Cube App results in an increase of transparency of government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

24.   **The Vehicles Cube App is too complex to acquire knowledge into government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

25.   **The Vehicles Cube App helps me make better decisions about government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

26.   **The Vehicles Cube App helps my understanding of the government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

27.   **The Vehicles Cube App will increase efficiency of government vehicles management**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

28.   **The Vehicles Cube App reduces time spent looking for information about government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

29.   **The Vehicles Cube App reduces the costs to search and decide about government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

30.   **More functions in the Vehicles Cube App are needed to create transparency of government vehicles**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about results?
_____
_____
_____

Thank you for your time to answer the questions!

6.2.2 Pilot 2 – Enterprise Lithuania (Lithuania) End-User Questionnaire

OGI Evaluation Questionnaire
Lithuania Enterprise App End Users – 2018

This questionnaire is aimed to be filled by End-Users who have used the applications developed within the pilots of H2020 OpenGovIntelligence (OGI) project. When answering the questions, the application developed using the OGI Toolkit, named here as Lithuania Enterprise App (LE App), should be taken into account. The following topics will be asked:

- General background information;
- Data sets; and,
- Resulting Application (App developed using the OGI toolkit).Ń

A text explaining more information about Lithuania Enterprise App (http://lithuania.opengovintelligence.eu/).

A. General Background Information

1. **Please select your age:**
( ) Less than 21 ( ) 21 – 40   ( ) 41 – 60   ( ) Over 60   ( ) Don't want to share

2. **How familiar are you with open data applications?**
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

3. What is your role using the **LE App?**
( ) Investors ( ) Citizens ( ) Civil servants ( ) Entrepreneurs
( ) Other _____

B. Acceptance of the Lithuania Enterprise Pilot App

4. **The LE App provides all the functionalities I am interested in**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

5. **All functions in the LE App work properly**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

6. **The LE App is stable**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

7. **The LE App helps me to achieve my goals**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

8. **My interaction with the LE App was satisfying**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

9. **The LE App is useful to me**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

10. **My interaction with the LE App is clear and understandable**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

11. **The LE App design is adequate**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

12. **I have sufficient skills to use the LE App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

13. **The LE App does not require high level technical knowledge**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

14. **The LE App will be accepted by my peers**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

15. **Using the LE App can be hard for the average citizen**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

16. **The LE App is easy to use**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about acceptance?
_____
_____
_____

C. **Lithuania Enterprise App Data Sets**

17. **The data in the LE App are accessible**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

18. **The data in the LE App is incomplete**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

19.   **The data in the LE App are accurate**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

20.   **A lot of time is needed to find the right data in the LE App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

21.   **I am able to find all the data I am looking for when using the LE App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about data sets?
_____
_____
_____

D.

E.   **Lithuania Enterprise Pilot Apps RESULTS**

22.   **The LE App has a clear visualization**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

23.   **The LE App helps to create insights of Lithuanian business environment**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

24.   **The LE App results in an increase of transparency of Lithuanian business environment**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

25.   **The LE App is too complex to gain insight of Lithuanian business environment**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

26.   **The LE App helps me to make better decisions**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

27.   **The LE App helps my understanding of the subject matter**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

28.   **The LE App will increase efficiency**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

29.   **The LE App reduces time spent looking for information**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

30. **The LE App reduces the costs to search and decide**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

31. **More functions in the LE App are needed to create transparency of Lithuanian business environment**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about results?
_____
_____
_____

Thank you for your time to answer the questions!

6.2.3 Pilot 3 – Tallinn Real Estate (Estonia) End-User Questionnaire

OGI Evaluation Questionnaire
Tallinn Real Estate App End Users – 2017

This questionnaire is aimed to be filled by End-Users who have used the applications developed within the pilots of H2020 OpenGovIntelligence (OGI) project. When answering the questions, the application developed using the OGI Toolkit, named here as Tallinn Real Estate Pilot App, should be taken into account. The following topics will be asked:

- General background information;
- Data sets; and,
- Resulting Application (App developed using the OGI toolkit).

More information about Tallinn Real Estate
(https://rnd-tut.shinyapps.io/Estonian_Pilot/)

A.   General Background Information

1.   **What is your gender?**
( ) Female   ( ) Male   ( ) Don't want to share

2.   **Please select your age:**
( ) Less than 21 ( ) 21 – 40   ( ) 41 – 60   ( ) Over 60   ( ) Don't want to share

3.   **How familiar are you with open data applications?**
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

4.   What is your role using the Tallinn Real Estate App?
( ) Students ( ) Foreign employees ( ) Tourists ( ) Real Estate Agents ( ) Other _____

B.   Acceptance of the Tallinn Real Estate Pilot App

5.   **The Tallinn Real Estate App provides all the functionalities I'm interested in**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

6.   **All functions in the Tallinn Real Estate App work properly**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

7.   **The Tallinn Real Estate App recovers well from crashes**
( ) The Tallinn Real Estate App didn't crash
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

8.   **The Tallinn Real Estate App helps me to achieve my goals**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

9.   **My interaction with the Tallinn Real Estate App user was satisfying**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

10.	**The Tallinn Real Estate App is useful to me**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

11.	**My interaction with the Tallinn Real Estate App is clear and understandable**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

12.	**The Tallinn Real Estate App design is adequate**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

13.	**I have sufficient skills to use the Tallinn Real Estate App**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

14.	**The Tallinn Real Estate App does not require high level technical knowledge**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

15.	**The Tallinn Real Estate App will be accepted by my peers**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

16.	**Using the Tallinn Real Estate App can be hard for the average citizen**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

17.	**The Tallinn Real Estate App is easy to use**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about acceptance?
_____
_____
_____

C.	**Tallinn Real Estate Pilot App Data Sets**

18.	**The data in the Tallinn Real Estate App are accessible**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

19.	**The data in the Tallinn Real Estate App is incomplete**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

20.	**The data in the Tallinn Real Estate App are accurate**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

21.	**A lot of time is needed to find the right data in the Tallinn Real Estate App**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

22.	**I am able to find all the data I'm looking for when using the Tallinn Real Estate App**
( ) Strongly Agree	( ) Agree	( ) Neutral	( ) Disagree	( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about data sets?
_____
_____
_____

D. Tallinn Real Estate Pilot App RESULTS

23.   **The Tallinn Real Estate App has a clear visualization**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

24.   **The Tallinn Real Estate App helps to create insights**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

25.   **The Tallinn Real Estate App results in an increase of transparency**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

26.   **The Tallinn Real Estate App is too complex to gain insight**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

27.   **The Tallinn Real Estate App helps me to make better decisions**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

28.   **The Tallinn Real Estate App helps my understanding of the subject matter**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

29.   **The Tallinn Real Estate App will increase efficiency**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

30.   **The Tallinn Real Estate App reduces time spent looking for information**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

31.   **The Tallinn Real Estate App reduces the costs to search and decide**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

32.   **More functions in the Tallinn Real Estate App are needed to create transparency of Real Estate information in Tallinn**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about results?
_____
_____
_____

Thank you for your time to answer the questions!

6.2.4 Pilot 4 – Trafford Council Worklessness (England) End-User Questionnaire

OGI Evaluation Questionnaire
Trafford *Worklessness* Pilot Apps End Users – 2018

This questionnaire is aimed at end users who have used the applications developed by the pilots involved in the H2020 OpenGovIntelligence (OGI) project. When answering the questions, the applications developed using the OGI Toolkit, named here as the **Trafford *Worklessness* Pilot Apps**, should be taken into account. A separate usability survey will be used for the individual applications. The apps are designed to enable Jobcentre Plus Managers and Local Authority leads to identify areas of need and inform service delivery related to worklessness. The following topics will be asked:

- Your General background information;
- A Technical Evaluation of the Pilot developed using the OGI toolkit
- The Datasets available in the Pilot; and,
- Pilots Outcomes (e.g. transparency, administrative burden reduction, cost reduction).

Trafford *Worklessness* Pilot Apps - http://www.trafforddatalab.io/opengovintelligence/
A.   General Background Information

1.   Which organisation do you work for?
( ) Department for Work and Pensions   ( ) Borough / City Council
( ) Other: _____

2.   Which Local Authority do you work within?
( ) Bolton   ( ) Bury   ( ) Manchester   ( ) Oldham   ( ) Rochdale
( ) Salford   ( ) Stockport   ( ) Tameside   ( ) Trafford   ( ) Wigan
( ) Other: _____

3.   How long have you been working for your employer?
( ) Less than 6 months   ( ) 6 to 12 months   ( ) 1 to 3 years   ( ) 3 to 6 years   ( ) 6 years or more

4.   What is your employee status?
( ) Managerial   ( ) Non-managerial

5.   How comfortable do you feel using the Internet?
( ) Very uncomfortable
( ) Somewhat uncomfortable
( ) Neither comfortable nor uncomfortable
( ) Somewhat comfortable
( ) Very comfortable

6.   How familiar are you with open data?
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

7. How familiar are you with Linked Open Statistical Data (LOSD)?
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

8. How familiar are you with downloading data from open data applications like nomis and Stat-Xplore?
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

B. Trafford Worklessness Pilot Apps Datasets

9. The data in the Trafford Worklessness Pilot Apps are accessible
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

10. The Trafford Worklessness Pilot Apps contain all of the datasets that I require
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

11. The data in the Trafford Worklessness Pilot Apps are incomplete
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

12. The data in the Trafford Worklessness Pilot Apps are accurate
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

13. A lot of time is needed to find the right data in the Trafford Worklessness Pilot Apps
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

14. I am satisfied with the datasets quality provided by the Trafford Worklessness Pilot Apps
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about data sets?
_____
_____
_____

C. Acceptance of the Trafford *Worklessness* Pilot Apps

15. The Trafford Worklessness Pilot Apps provide all the functionalities I am interested in
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

16. All functions in the Trafford Worklessness Pilot Apps work properly
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

17. I experienced a crash while using the Trafford Worklessness Pilot Apps
( ) The Trafford Worklessness Pilot Apps didn't crash
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

18. The Trafford Worklessness Pilot Apps help me in my work
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

19. My interaction with the Trafford Worklessness Pilot Apps is satisfying
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

20. The Trafford Worklessness Pilot Apps are useful to me
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

21. The Trafford Worklessness Pilot Apps are easy to use
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

22. The Trafford Worklessness Pilot Apps have an adequate design
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

23. I have sufficient skills to use the Trafford Worklessness Pilot Apps
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

24. The Trafford Worklessness Pilot Apps do not require high level technical knowledge
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

25. The Trafford Worklessness Pilot Apps are accepted by my peers
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

26. The Trafford Worklessness Pilot Apps are unnecessarily complex
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

27. I found the various functions in the Trafford Worklessness Pilot Apps are well integrated
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

28. I want to use the Trafford Worklessness Pilot Apps frequently
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about acceptance?
_____
_____
_____

D. Trafford *Worklessness* Pilot Apps Outcomes Evaluation

29. The visualization provided by the Trafford Worklessness Pilot Apps makes better interpretation of data
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

30. The Trafford Worklessness Pilot Apps help me to make better decisions
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

31. The Trafford Worklessness Pilot Apps increase efficiency of my work
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

32. The Trafford Worklessness Pilot Apps reduce time spent looking for information
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

33. The Trafford Worklessness Pilot Apps reduce costs to find information
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

34. More functions in the Trafford Worklessness Pilot Apps are needed to create transparency to support decision making
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

What functionality would you like to see added to the applications to add transparency?
_____
_____
_____

Finally, do you want to explain your answers or comment on anything not covered about results?
_____
_____
_____

Many thanks for taking the time to complete this questionnaire!

If you have any questions about the survey please email henry.partridge@trafford.gov.uk

6.2.5 Pilot 5 – The Flemish Environment Agency (Belgium) End-User Questionnaire

OGI Evaluation Questionnaire
Flemish Government App End Users – 2017

This questionnaire is aimed to be filled by End-Users who have used the applications developed within the pilots of H2020 OpenGovIntelligence (OGI) project. When answering the questions, the application developed using the OGI Toolkit, named here as Flemish Government Pilot App, should be taken into account. The following topics will be asked:

- General background information;
- Data sets; and,
- Resulting Application (App developed using the OGI toolkit).

B.   General Background Information

1.   **Please select your age:**
( ) Less than 21 ( ) 21 – 40   ( ) 41 – 60   ( ) Over 60   ( ) Don't want to share

2.   **How familiar are you with open data applications?**
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

D.   Acceptance of the Flemish Government Pilot App

3.   **The Flemish Government App provides all the functionalities I'm interested in**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

4.   **All functions in the Flemish Government App work properly**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

5.   **The Flemish Government App recovers well from crashes**
( ) **The Flemish Government App didn't crash**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

6.   **The Flemish Government App helps me to achieve my goals**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

7.   **My interaction with the Flemish Government App was satisfying**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

8.   **The Flemish Government App is useful to me**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

9.   **My interaction with the Flemish Government App is clear and understandable**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

10.   **The Flemish Government App design is adequate**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

11.   **I have sufficient skills to use the Flemish Government App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

12.   **The Flemish Government App does not require high level technical knowledge**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

13.   **The Flemish Government App will be accepted by my peers**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

14.   **Using the Flemish Government App can be hard for the average citizen**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

15.   **The Flemish Government App is easy to use**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about acceptance?
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

C. **Flemish Government Pilot App Data Sets**

16.   **The data in the Flemish Government App are accessible**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

17.   **The data in the Flemish Government App is incomplete**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

18.   **The data in the Flemish Government App are accurate**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

19.   **A lot of time is needed to find the right data in the Flemish Government App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

20.   **I am able to find all the data I'm looking for when using the Flemish Government App**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about data sets?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

D. Marine Institute Pilot App results

21. **The Flemish Government App has a clear visualization**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

22. **The Flemish Government App helps to create insights about air pollution in Flanders**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

23. **The Flemish Government App results in an increase of transparency of air pollution in Flanders**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

24. **The Flemish Government App is too complex to gain insight**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

25. **The Flemish Government App helps me to make better decisions**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

26. **The Flemish Government App helps my understanding of the subject matter**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

27. **The Flemish Government App will increase efficiency**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

28. **The Flemish Government App reduces time spent looking for information**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

29. **The Flemish Government App reduces the costs to search and decide**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

30. **More functions in the Flemish Government App are needed to create transparency of air pollution in Flanders**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about results?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Thank you for your time to answer the questions!

6.2.6 Pilot 6 – Marine Institute (Ireland) End-User Questionnaire

OGI Evaluation Questionnaire
Marine Institute Pilot End Users – 2018

This questionnaire is aimed to be filled by End-Users who have used the Pilot applications developed within the H2020 OpenGovIntelligence (OGI) project. When answering the questions, the Pilot application developed using the OGI Toolkit, named here as **Marine Institute Pilot**, should be taken into account. The following topics will be asked:

- General background information;
- Data sets; and,
- Resulting Pilot (Pilot developed using the OGI toolkit).

A.   **General Background Information**

1.   **What is your organisational role using the Marine Institute Pilot?**
( ) Search and rescue professional   ( ) Search and rescue volunteer
( ) Marine Energy Developer   ( ) Marine Energy Consultant   ( ) Planning Consultant
( ) Planner   ( ) Private Citizen   ( ) Public Servant   ( ) Civil Servant
( ) Tourism Agent   ( ) Tourism business owner   ( ) Sailor   ( ) Volunteer
( ) IT Professional Other: _____

2.   **For what purpose might you use the Marine Institute Pilot Dashboard?**
( ) Recreational   ( ) Work   ( ) Both

3.   **How familiar are you with data dashboards?**
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

4.   **How familiar are you with marine data availability suitable to your needs?**
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

5.   **How familiar are you with Linked Open Statistical Data?**
( ) Not at all familiar   ( ) Slightly   ( ) Somewhat   ( ) Moderately ( ) Extremely familiar

B.   **Marine Institute Pilot Evaluation**

6.   **The Marine Institute Pilot provides all the functionalities I require**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

7.   **All functions in the Marine Institute Pilot work properly**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

8.   **The Marine Institute Pilot system is stable**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

9.   **The Marine Institute Pilot supports my requirements**

( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

10. **My interaction with the Marine Institute Pilot was satisfying**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

11. **The Marine Institute Pilot is useful to me**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

12. **My interaction with the Marine Institute Pilot is clear and understandable**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

13. **The Marine Institute Pilot design is adequate**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

14. **I have sufficient skills to use the Marine Institute Pilot**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

15. **The Marine Institute Pilot does not require high level technical knowledge**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

16. **I will share the The Marine Institute Pilot with colleagues**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

17. **Using the Marine Institute Pilot can be hard for the average citizen**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

18. **The Marine Institute Pilot is easy to use**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

Have you any comments and or recommendations regarding the evaluation of this pilot?
_____
_____
_____

   C. **Marine Institute Pilot Data**

19. **The data in the Marine Institute Pilot are accessible**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

20. **The data in the Marine Institute Pilot is complete**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

21. **The data in the Marine Institute Pilot are accurate**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

22. **The data in the Marine Institute Pilot are consistent**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

23. **A lot of time is needed to find the right data in the Marine Institute Pilot**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

24. **I am able to find all the data I'm looking for when using the Marine Institute Pilot**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Are there any particular datasets you are aware of that would prove useful in the pilot evaluated?
_____
_____
_____

E. **Marine Institute Pilot**

25. **The Marine Institute Pilot has a clear visualisation**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

26. **The Marine Institute Pilot helps to support emergency response operations**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

27. **The Marine Institute Pilot helps to support marine renewable energy investment decisions**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

28. **The Marine Institute Pilot helps to support planning a sailing event**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

29. **The Marine Institute Pilot helps me to make better decisions**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

30. **The Marine Institute Pilot helps my understanding of ocean conditions relevant to emergency response, marine energy and marine event planning**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

31. **The Marine Institute Pilot will increase efficiency**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

32. **The Marine Institute Pilot reduces time spent looking for information**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

33. **The Marine Institute Pilot reduces the costs to search and decide**
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

34. **More functions in the Marine Institute Pilot are needed to create transparency to support marine decision making**
( ) Strongly Agree　　　( ) Agree　　　( ) Neutral　　　( ) Disagree　　　( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about results?
_____
_____
_____

Thank you for your time in completing this evaluation questionnaire.

6.3 OGI CubiQL API Developers' Questionnaire

OGI CubiQL API
Evaluation – Developer Questionnaire – Third Year 18/19

This questionnaires is aimed to be filled by Developers at various aspects of the applications developed within the toolkit provided by H2020 OpenGovIntelligence (OGI) project. When answering the questions the application developed using the OGI CubiQL API should be taken into account. The following topics will be asked:

- General background information; and, OGI API characteristics (Functionality, performance, etc.).

A. **User Information**

1. **What is your field of education?**
( ) Natural and Physical Science ( ) Social Science   ( ) Information Technology
( ) Engineering and related   ( ) Agriculture, environmental and related studies
( ) Health and related studies   ( ) Other (Please specify): _____

2. What is the highest level of education that you have completed?
( ) Bachelor   ( ) Master   ( ) Ph.D.   ( ) Don't have / Don't want to share

3 **How many years have you been programming using APIs?**
A: _____

4 **Which pilot have you been working on?**
( ) Belgium   ( ) England   ( ) Estonia   ( ) Greece   ( ) Ireland   ( ) Lithuania

B.   OGI CubiQL API Functionality

5 The OGI CubiQL API provides all required functionalities
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

6 It is easy to find all the needed functionalities in the OGI CubiQL API
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

7 All functions in the OGI CubiQL API work properly
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

8 All functions in the OGI CubiQL API provide correct results
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

9 All functions in the OGI CubiQL API help to access linked statistical data
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about functionality?
_____

_____

_____

C.   **OGI CubiQL API** **Performance**

10 The OGI CubiQL API is responsive
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

11 The processing times of the OGI API are satisfactory
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

12 The OGI CubiQL API doesn't require too many computational resources to operate
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

13 The OGI CubiQL API performs required functions efficiently
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about performance?
_____
_____
_____

D.   **OGI CubiQL API** **Compatibility**

14 The OGI CubiQL API has no problems working in a common environment with other products
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

15 The OGI CubiQL API can be used with your existing network
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

16 The OGI CubiQL API improved the interoperability of my application
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about compatibility?
_____
_____
_____

E.   **OGI CubiQL API** **Usability**

17 The OGI CubiQL API is easy to learn
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

19 The OGI CubiQL API is easy to operate and control
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

20 The documentation of the OGI CubiQL API is easy to understand
( ) Strongly Agree   ( ) Agree   ( ) Neutral   ( ) Disagree   ( ) Strongly Disagree

21 The OGI CubiQL API enables a satisfying interaction for the developer
( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree

22 I have a good understanding of the OGI CubiQL API
( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree

23 The OGI CubiQL API has similar structure compared to the most common APIs
( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree

24 The structure is similar throughout the OGI CubiQL API
( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about usability?
_____
_____
_____

F. OGI CubiQL API Reliability

23 The OGI CubiQL API is reliable under normal operation
( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree

24 The OGI CubiQL API is accessible when required for use
( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree

25 The OGI CubiQL API can be restored quickly from a system failure
( ) Strongly Agree ( ) Agree ( ) Neutral ( ) Disagree ( ) Strongly Disagree

Do you want to explain your answers or comment on anything not covered about reliability?
_____
_____
_____

Thank you for your time to answer the questions!