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Analysis of the Value of New Generation of eGovernment Services and How Can the Public Sector Become an Agent of Innovation through ICT

FINAL REPORT

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List of Acronyms

CBA	Cost & Benefit Analysis
COFOG	Classification of the Functions of Government
ICT	Information Communication Technology
NES	New eGovernment Services
OGS	Open eGovernment Services
PSI	Public Sector Information
PSIN	Public Sector INnovation
R&D	Research & Development

Abstract

The current social, economic and technological developments are leading towards the emergence of a new generation of eGovernment Services, defined within the scope of the study as Open eGovernment Services (OGS). Such OGS are open, collaborative and digital based services characterised by a deliberate, declared and purposeful effort to increase openness and collaboration through technology in order to deliver increased public value. These open, collaborative and co-production features exist in all phases of the design, deployment, implementation and delivery of the service. In this regard the objective of the study was to better understand what OGS are, what is their value for society and how the public sector should innovate to foster their use and maximize their impact on society.

To this aim, the study produced the following results: 1) a definition and a taxonomy of OGS; 2) an assessment of the value of OGS, based on a costs-benefits analysis aggregated and extrapolated across European countries, completed with an assessment of the non-monetized benefits; 3) the assessment of how public sector innovation happens and how the implementation of OGS can be accelerated by mean of appropriate policy measures.

Executive Summary

The new EU eGovernment Action Plan 2016-2020 - Accelerating the digital transformation of government – is guided by the following vision:

"By 2020, public administrations and public institutions in the European Union should be open, efficient and inclusive, providing borderless, personalised, user-friendly, end-to-end digital public services to all citizens and businesses in the EU. Innovative approaches are used to design and deliver better services in line with the needs and demands of citizens and businesses. Public administrations use the opportunities offered by the new digital environment to facilitate their interactions with stakeholders and with each other."

To fulfill this vision, the study provides European policy makers with a better understanding of what OGS are, what is their value for society, and how the public sector should innovate to foster their use and maximize their impact on society. To this aim, the study produced the following results: 1) a definition and a taxonomy of OGS; 2) an assessment of the value of OGS, based on a costs-benefits analysis aggregated and extrapolated across European countries, completed with an assessment of the non-monetized benefits; 3) the assessment of how public sector innovation happens and how the implementation of OGS can be accelerated by means of appropriate policy measures.

Definition and Taxonomy of OGS

Open eGovernment Services (OGS) are **open, collaborative and digital based services** characterised by a **deliberate, declared and purposeful effort to increase openness and collaboration** through technology in order to deliver **increased public value**. More precisely the main features of OGS are:

- **Openness:** effort to publish elements and components of the service (data, service components, decision support), with respect to traditional eGovernment. This includes the production of reusable software objects that can be re-composed as in the concept of Service-Oriented Architecture.
- **Collaboration:** recognition that government should not only aim at fulfilling societal and economic needs by direct service provision, but should enable and deliberately pursue the collaboration of third parties. This includes services designed and provided by private players without the awareness of government but that help solving issues related to public services.
- **Technology:** OGS are fundamentally reliant on digital technology to deliver the services. Digital technology is used to provide disruptive innovation in the way services are delivered and is by definition collaborative, through open data, open web tools or collaborative platforms.

All these three aspects must be present for a service to be classified as OGS. As such are **excluded from OGS:** traditional (non-open and/or non-collaborative) eGovernment initiatives, traditional outsourcing of public services to private providers, live participatory initiatives (e.g. town hall meetings), pure citizens-to-citizens collaboration not directly related to public services, and services provided by the private sector that do not build on open government data and that are not related to public services. On the other hand, **OGS includes** initiatives for transparency and open data regarding both public service provision and involvement in policy decision, services where government plays some role, as leader or enabler, services where non-government parties play a different role: from lead, to contributor, to simple input in the design, with or without formal agreements about the role (e.g. contracts). Finally, there are **quasi OGS** included in the definition, despite not being designed to increase the collaboration between government and third parties. Examples are services

delivered by citizens or private sector without any forms of government initiative, and that do not even rely on open government data, but that directly concern public services and which induce a re-action by government, and government initiatives exclusively aiming at increasing collaboration within government, such as social networks of civil servants and inter-agency knowledge sharing platforms.

Starting from the definition of OGS, the study team elaborated a taxonomy of scopes and type of OGS building on a systematic literature review (ensuring that the most up to date available evidence and definitions was taken into account), a dynamic online engagement of relevant stakeholders, and a thorough mapping of relevant OGS. A brief outline of the taxonomy is presented in Table 1.

Table 1 – Taxonomy of OGS

TAXONOMY OF SCOPES	
Category	Description
Main elements of the taxonomy	Services of general interest, Public sector (e.g. security, public education, health care), and Government
Domains of the taxonomy	General public services, Defence, Public order and safety, Economic affairs, Environmental protection, Housing and community amenities, Health, Recreation, culture and religion, Education, Social protection.
Branch/power of government	Executive, Legislative and judiciary
Levels of government	Supra-national, National, Regional, Local
Users benefiting	Other governments, Citizens, Businesses.
Object of the taxonomy	Public services, public policies
TAXONOMY OF TYPES	
Category	Description
Technology adopted by the service	Open data, Composable services, Other technologies supporting human collaboration, such (e.g. collaborative tools and social media)
Types of collaborators in service provision	Citizens, Business, Other government agencies and civil servants.
Role of government	Lead, Enabler, No role.
Type of Resources used to provide the service	IT skills, Specific thematic knowledge, Experience as users of public services, Pervasive geographic coverage, Trust and networks, Many eyes and many hands (support of the population at large).
Collaboration modality	Virtual labour market, Tournament based collaboration, Open collaboration.
Phase in the policy cycle in which collaboration is provided	Design, Implementation, Monitoring, Evaluation.

Source: consortium elaboration

The taxonomy was then used in the study to identify the long list of cases from which select the relevant initiatives for the analysis of the value of OGS. The taxonomy allowed us also to define three broad clusters of services: **Human services** refer to services to citizens (and in some cases companies) that provide concrete support, such as health, education, and culture. **Administrative services** include those services that are compulsory, necessary to the functioning of government even though they do not provide visible service to users. **Participatory services/policymaking** refer to the open, participatory decision-making services.

Value of OGS

For what concerns the assessment of the value of Open Government Services from a quantitative and qualitative perspective, the study team has carried out a Cost-Benefit analysis and an analysis of non-monetized benefits of a set of OGS initiatives. The final list of selected cases, with a related short description, is depicted in Table 2.

Table 2 – List of Selected Cases

Case	Typology/Short Description
FixMyStreet UK	Street Maintenance. The service works by entering a postcode (or by enabling the website to locate the user automatically) along with the description of the street problem to be fixed. The issues reported by citizens are then emailed directly to the relevant Councils. Problems reported span from potholes or broken streetlights to street cleaning.
FixMyStreet Belgium	
Interoperable Data Gathering for e-Social Security	Electronic Social Security. Electronic data gathering on income and property aimed at reducing the efforts for applicants but also significantly simplifying the decision processes by enabling fast, fair and transparent decisions regarding social support. The adoption of the system by the government also aimed at the collection and storing of data on income and property that otherwise would have been dispersed across different sources (50+).
Tartu Participatory Budgeting	Participatory Budgeting. Tartu, the second largest city of Estonia, is the first city in Estonia that opened up its budget-designing process in 2013. Citizens of Tartu can decide how 1% of the annual investment budget is spent.
IoPartecipo	Participatory Decision Making. Online platform allowing citizens to take part to the decision making process related to local issues. The service has been implemented by the Italian Region Emilia Romagna in 2013 and has already received 54.105 visits since its launch.
PatientOpinion	Feedback Management. The platform works by enabling patients to provide details about their experiences in hospitals and health care institutions in the area in which they live. The platform will then email the story to the relevant health services, which in turn can provide an answer directly via the Patient Opinion platform
Di@vgeia	Publication of Acts. The Di@vgeia programme was launched in 2010 by the Ministry of Administrative Reform and e-Government with the aim of pushing all government institutions to upload their acts and decisions on the internet in order to make them fully available to the public.
NemID	Electronic Signature. The login service aims to simplify bureaucratic processes and administrative procedures for citizens and civil society. The system enables Danish citizens to access a wide range of public administration services and online banking and tax services by entering an individual user name, password and code.
Kublai	Support to entrepreneurship. Open and collaborative environment consisting in a platform where creative individuals can present project ideas that can be discussed, refined, and developed into viable projects. In this way individuals that lack capability to gain access to funding can turn ideas into real world social innovation projects
Parlement et Citoyen	Participatory Decision Making. Platform where Members of the French Parliament publish their proposals for feedback and enrichment by the people before they are discussed in Parliament. The platform, reused for dedicated consultation, has managed to reach out beyond the "usual suspects", with half of participants reporting "some" or "no" interest in politics.

Source: consortium elaboration

How do these cases fit into the definition of OGS? This is explained in Table 3, where the cases are characterized according to their openness, collaboration and technology dimension.

Table 3 – Characterization of the Cases as OGS

Case	Openness	Collaboration	Technology
FixMyStreet UK	Citizens can access online reports and datasets	Citizens report problems and street faults giving the possibility for the public administration to actively take action	Platform and app enable citizens to report problems and local authorities to display and eventually address them
FixMyStreet Belgium			
Interoperable Data Gathering for e-Social Security	Different PA institutions can use the service building blocks	Stakeholders co-designed the service and suggested valuable inputs for its implementation	Interoperable building blocks enabling to manage different types of data enquiries

Tartu Participatory Budgeting	Public budgeting is displayed to the public.	Citizens take part to the decision-making process	Possibility to cast votes using Estonian ID cards and the digital-signature infrastructure
IoPartecipo	Data are uploaded and made available to everyone for downloading, sharing and commenting	Co-design and co-production activities involving researchers, experts and end-users	Online platform, resulting from the re-use of existing software components
PatientOpinion	Possibility for patients and citizens to freely consult feedback and reports	Reporting activities which enable patients to provide feedback to health institutions	Online platform enabling patients to be directly in contact with health institutions
Di@vgeia	Readily available information on the portal that can be accessed by everybody	Citizens can monitor the publications of documents as well as report potential maladministration issues	Online platform where the information is published
NemID	Access to PA services and online banking via the unified log-in system	System developed by a private supplier in cooperation with both the financial and the public sector	ICT platform to access online services of the public administrations and banks
Kublai	Information (e.g. feedback and training material) is provided openly and freely	Peer to peer support provided by the users of the platform to other users presenting a project by the mean of comments	Online platform allowing asynchronous communication, tools such as Second Life allowing synchronous communication
Parlement et Citoyen	Law proposals are readily available on the portal	Platform enables citizens to revise and provide input in law proposals	Online platform where the input is provided

Source: consortium elaboration

The results of the analysis on the monetary and non-monetary advantages benefits of OGS as well as on the non-monetized benefits can be used for identifying similarities and patterns across the type of services (Table 4).

Table 4 - Value of Open eGovernment Services

Area	Service	TECHNOLOGY COSTS	MONETIZED BENEFITS	NON-MONETIZED BENEFITS	SCALABILITY	REPLICABILITY	CONCLUSION
HUMAN SERVICES	Support to entrepreneurship	Moderate	Fairly positive	Very positive	Medium	High	Promising
	Streets Maintenance						
	Feedback Management						
ADMINISTRATIVE SERVICES	Publication of Acts	High	Very positive	Fairly positive	High	Medium	Mature
	Electronic Signature						
	Electronic Social Security						
PARTICIPATORY POLICY SERVICES	Participatory budgeting	Moderate	Negative	Very positive	Medium	Medium	Potential not fully expressed
	Participatory Decision-making						

Source: consortium elaboration

As depicted in Table 4 the cases can be clustered across a set of categories of services highlighting some patterns of use: **Human services**, **Administrative services**, and **Participatory services/policymaking**. Concerning human services, the costs of the OGS from a technological standpoint, are typically moderate as the service can be built incrementally by one developer using open source modules. The monetized

benefits are fairly positive, as the input provided by users (the feedback over the service, the suggestion about improving the business plan) directly improved the service delivered. However, the absolute benefits are limited since these type of services do not replace existing public services but simply help improving them. Non-monetized benefits are very important, in terms of capacity to reach out to citizens, increase their satisfaction and trust. Scalability for this type of services is low due to their limited application. It is hard to imagine high levels of collaboration between citizens such as those shown by Kublai or Patient Opinion when dealing with more trivial issues. On the contrary, replicability is quite high (both FixMyStreet and Patient Opinion have already been replicated elsewhere). In regards to administrative services, technology costs are high, especially in the short term, because they involve a reorganisation across all government. Monetary benefits are also high, mainly in terms of costs savings. The non-monetized benefits are more limited, and generally refer to greater transparency and trust in government. Finally, the scalability is very high, as these services do not require extensive citizens input, in most cases are fully automated, and therefore can be more easily scaled. These types of services carry also a good replication potential, however the lack of a political and legal framework might affect their adoption. Participatory decision-making services account for typically moderate technological costs, as the tools do not require an overhaul of the existing core government technology. The monetized benefits appear very limited though, as the input received by citizens is seldom original and highly innovative: citizens input appear far more useful and high quality when it refers to concrete needs and issues, as in the human services cases. On the other hand especially relevant are non-monetized benefits in relation to building trust in government decisions. Finally, both scalability and replicability are limited, as citizens' attention cannot be devoted to follow all government decisions, but only the most important ones, typically very few. As it was the case for Administrative Services, the presence of a solid political and legal framework plays a central role for the replication of these types of services. Increasing the scope of application of the services and stimulating high quality input will in the future increase the impact of this class of services.

Scenarios and Policy Measures

The scenarios have been elaborated building on the case studies as well as on activities carried out in the study. More in particular the case studies carried out provided clear inspiring examples, the classification of which, along the class of service delivered, was the basis for the elaboration of the scenarios. Finally the scenarios workshop presented the study team with the opportunity to enrich the scenarios hypothesized and to provide other examples of drivers and bottlenecks, as well as to elaborate a preliminary set of policy recommendations, further refined by the study team. Each of the four scenarios elaborated describes a different outcome for OGS (Table 5).

Table 5 – Future Scenarios of OGS

SCENARIO	DESCRIPTION	IMPACT	CASES
DEVELOPING OPEN DECISIONS	Policy decisions are taken with the fundamental input of citizens in online discussions	Citizens trust government more, are willing to pay taxes and less likely to vote for populists Public policies are more effective as stakeholders feel ownership and collaborate	Tartu Participatory Budgeting - Parlement et Citoyens IoPartecipo
FEDERATING COLLABORATIVE HUMAN SERVICES	Public services of genuine added value are systematically designed and implemented with the involvement of citizens and business	Public spending on similar level but quality of services is higher and also citizens satisfaction Less mistakes and waste in delivering services, higher trust in service delivery	Kublai, PatientOpinion. FixMyStreet

FEDERATING ADMINISTRATIVE SERVICES	Services are integrated across government, and provided through composable modules that are re-used and integrated automatically. Any services provide API access for integration	Spending is significantly reduced because of savings in service delivery and reduced rate of mistakes Government spend less in developing customised software, but reuse software built by others Companies and business save time and money thanks to automated, proactive services Market of business built online services based on and integrated with government-built software	Di@vgeia NemID Interoperable data gathering for e-social security
END OF OPEN GOVERNMENT	Transparency, collaboration and participation did not deliver on their promises, leading to a return to traditional eGovernment	Public policies are designed top-down, in a technocratic way, based on the available scientific evidence Human services are delivered by expert civil servants or outsourced to the private sector Administrative services are delivered by large, centralised organizational units, supported by software built on demand by large IT corporations Public Sector Innovation disappears from the policy agenda	

Source: consortium elaboration

Building on the scenarios, Table 6 provides an overview of the recommended policy measures to boost Open eGovernment Services, structured by the general policy objectives and type of stakeholder the recommendation applies to.

Table 6 – Overview of the of Policy Recommendations for OGS

Policy Objectives	European Union	Member States	Citizens/business
OPENNESS AS A GRADUAL LEARNING PROCES	Guidance modules for OGS audit Open spaces for discussion MOOC on OGS Global knowledge exchanges Internal OGS roadmap	Identify priority services for OGS Carry out OGS audit Prioritize low-input OGS Ensure learning and fine-tuning of services after launch Early involvement of users	Develop OGS without replication to existing ones and reusing existing solutions. Provide feedback on existing OGS
ADJUST THE INSTITUTIONAL FRAMEWORK	EU statement of principles Support MS deployment Provide political recognition internally Foster adoption of DSI building blocks	Adopt action plan Ensure "collaborative by design" principle in government services Provide guidelines to civil servants	Publicly support government OGS leaders and private OGS developers
DESIGN CLEAR INCENTIVES	Provide best practice guidance on incentives for civil servants Adapt EU staff regulation Create centre of competences Recognize the effort of OGS in budget distribution	Adapt staff regulation Create centre of competence Recognize the effort of OGS in budget distribution Integrate procurement with innovation activities. Ensure feedback to citizens	Ensure uptake of OGS Proactively launch OGS in collaboration with government.
DISSEMINATE PROACTIVELY	EU dissemination campaign Web based repository Live high profile events	Public, high reach events for citizens Restricted events for civil servants Monitor dissemination	Take part in web dissemination activities and live events
IMPROVE THE EVIDENCE BASE	Clarify limitation of public sector innovation Set up a repository of best practices Elaborate easy to use evaluation and benchmarking framework	Systematically deploy evaluation throughout OGS	Business to report publicly on OGS run by them. Citizens to participate in evaluation activities.

Source: consortium elaboration

Introduction

Purpose of the Study

The current social, economic and technological developments are leading towards the transformation of the way public services are delivered. A new generation of eGovernment Services is emerging, which main feature are the collaboration and the openness dimension, in terms of open data, open services and open processes. For that reason, within the scope of the study, new Generation of eGovernment Services are qualified as Open eGovernment Services (OGS).

The first part of the study aims at understanding WHAT Open eGovernment Services are by providing a robust and shared definition and through the elaboration of a taxonomy of all related concepts. Moreover, the first part of the research activity also delves into the potential economic and non-economic value of OGS. In this respect, the study provides an assessment of costs and benefits resulting from the analysis of selected Open eGovernment Services, also aggregated and extrapolated across Europe and EEA countries, as well as an analysis of the non-monetized benefits.

In a nutshell Open eGovernment Services (OGS) are **open, collaborative and digital based services** characterised by a **deliberate, declared and purposeful effort to increase openness and collaboration** through technology in order to deliver **increased public value**. The open, collaborative and co-production features exist in all phases of the design, deployment, implementation and delivery of the service.

Collaboration is understood in multidimensional way. It can happen at different level and between different stakeholders. Citizens, businesses and the civil society can collaborate directly with the public sector or indirectly for instance by utilising Open Government Data that are released by the public institutions. When talking about OGS the role played by the government can range from the one of asset provider, enabler or direct collaborator. Privately developed applications which deliver **public value** may also be considered OGS if the government has played some sort of **"responsive role"** (taking the lead of the service once it is implemented or supporting the private initiative).

The second part of the research focus on HOW the public sector should innovate to foster the use of Open eGovernment Services. Namely, by addressing the following interrelated questions:

- How ICT can help public sector innovation, in terms of increasing its impact and removing the bottlenecks to wider use?
- How does public sector innovation enable open government?

Public Sector INnovation (PSIN) can be defined as the process of generating new ideas, and implementing them to create value for society either through new or improved processes or services (EU Expert Group on Public Sector Innovation, 2013). In this respect public sector innovation is the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes efficiency, effectiveness or quality. In the study, the focus is on the analysis on initiatives that affect exclusively innovations inside the public administrations rather than innovation elsewhere in society, such as support to innovation in NGOs or support to social entrepreneurship. Also, the scope of the research is limited to innovation related to Open eGovernment Services and not of the public sector innovation per se.

In fact the added value of this part of the research is on highlighting what are the drivers and barriers for the Public Sector Innovation towards Open eGovernment

Services, as well as the provision of a set of actionable policy recommendations and policy measures.

Structure of the Tasks and Methodology

The study encompasses a varied set of methodologies in line with the scope of each activity and sub-activity. As mentioned above the study is structured into three interrelated tasks:

- 1) The creation of a clear set of definitions and taxonomy allowing defining WHAT are Open eGovernment Services;
- 2) An analysis of Costs and Benefits, both monetized and non-monetized, to understand WHY OGS are important;
- 3) The assessment of HOW public sector innovation happens and how the implementation of OGS can be accelerated by mean of appropriate policy measures.

Related to **Task 1**, the methodology for the elaboration of the definition and the taxonomy builds on a systematic literature review, to ensure taking into account the most up to date available evidence and definitions. The literature review was also an important task as it allowed defining a long list of cases matching the shared OGS definition and categorisation included in the taxonomy. The long list of cases was further shortened so as to produce a final list with 10 of the most interesting and representative case studies of OGS for the Analysis of the Value. Throughout the study, a series of online stakeholders engagement activities was undertaken such as online posting, newsletter disseminations and webinars. According to the scope and spirit of the research, which is based on co-creation and collaboration, the study team reached out to communities active in this domain and posted online the interim results asking interested parties to share knowledge/validate the project findings as well as asking stakeholders to submit any relevant case of Open eGovernment Services they were aware of.

The Methodology adopted for **Task 2** is organised into subsequent activities. Firstly, the study team has identified the most promising case studies fitting the definition of OGS and contacted the case representatives. In partnership with case owners, study team tailored the Analysis of Value to the specificity of each case and collected the relevant qualitative and quantitative data. Lastly, the quantitative results of the Cost Benefit Analysis were aggregated on the cases and projected the macro estimation results at the EU level.

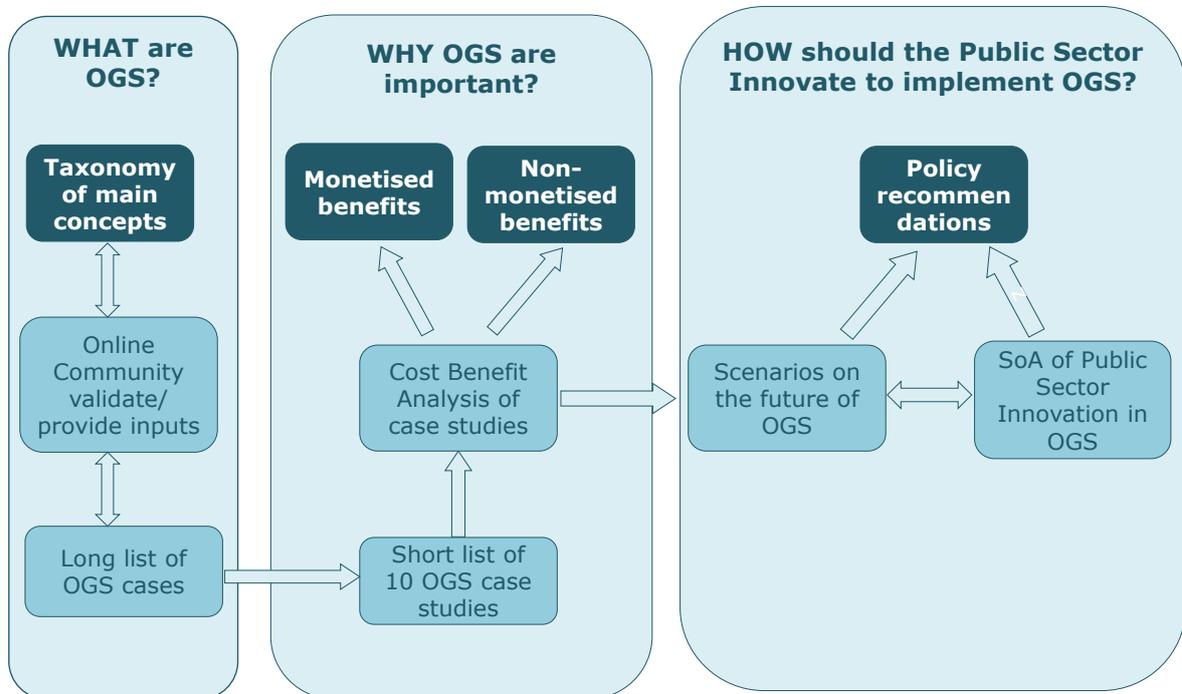
Finally, **Task 3** activities consisted of a series of stakeholder engagement activities aiming at strengthening the evidence gathered on what are the drivers, barriers and policy instruments for the Public Sector Innovation and the implementation of OGS. Drawing from the literature review of Task 1 and in line with the results of the Analysis of the Value of OGS the study team identified a list of drivers and barriers, afterwards presented to the list to high-level interview respondents and to web survey respondents, which were asked to provide their perceptions and qualitative inputs on what were the drivers, barriers and policy instruments for the implementation of OGS. The interviews targeted 60 interviewees: 20 business representatives, 20 public officials, and 20 civil society representatives. As for the web survey, more that 200 stakeholders responded.

In the final part of the project a Scenario Workshop was organised to brainstorm and gather valuable inputs/contents from high-level stakeholders. Four different scenarios on the possible future of OGS were presented to the workshop participants. Three scenarios forecast a future success of one of the three main categories of services while the fourth hypothesized the possibility of the failure of OGS. Participants were split in different round tables and each grouping were discussing one of the four

scenarios, they were asked to provide their perception on the drivers and bottlenecks for the adoption of OGS as well as setting an initial list of policy recommendations. The stakeholders inputs gathered during the interviews, web survey and scenario workshop delineate the state of the art (SoA) of OGS.

In Figure 1 - Overview of the architecture of the work is illustrated the main logical relationships between the project outputs (indicated in the dark green boxes). The taxonomy created in Task 1 serves as the basis for the development of the methodology and baseline for the Cost Benefit Analysis of Task 2. The data from the cases is used to provide a listing of cases' tangible and intangible benefits including a macro estimation projection at EU 28 level. Moreover, both the taxonomy and the baseline of Task 2 inform the development of the state of the art on Open eGovernment Services for Task 3, while the cases provide input in the development of the scenarios. Finally the gap between the scenarios and the state of the art will be the basis for the development of the recommendations.

Figure 1 - Overview of the architecture of the work



Source: consortium elaboration

Structure of the Document

The document is organized in two main parts:

- **Part I** is devoted to the Analysis of the value of OGS. To this aim, it presents the literature review describing the main concepts related to OGS, the definition and taxonomy of OGS, and ultimately the analysis of their value both in monetized and in non-monetized terms.
- **Part II** is devoted to the assessment of how the Public Sector can become an Agent of Innovation through ICT in the Context of OGS. In this respect, Part II presents the drivers and barriers for OGS innovation resulting from the stakeholder engagement activities, the future scenarios on OGS and a set of actionable policy recommendations and policy measures. A general conclusion summarizes both Part I and Part II. Finally the annexes depict the bibliography, the case studies and the description of the scenario workshop.

1 Part I: Analysis of the value of OGS

1.1 Main concepts related to OGS

The following section provides background knowledge on the main concepts that underpin the idea of Open eGovernment Services. It is necessary to take one step backwards and explain what we refer with "traditional government" and "eGovernment" in order to build up a clearer picture of what are OGS.

1.1.1 Review of concepts related to "Traditional Government"

Government is a public institution set up by a community of people to address issues and problems for the common good beyond the ability of self-organisation or private, individual action.

There are two main definitions of **Public**:

- Public as non-private, meaning that it can be used by anyone, and it is open or available to people in general rather than being restricted. For instance a public library/restroom/telephone/beach is a public property;
- Public as related to the State. In this case public is relating to, paid for by, or working for a government e.g. she was elected to a public office; public spending/funding, public education/housing.

In 1995 Mark Moore in his book *Creating Public Value* (Moore 1995) coined the term **Public Value** to encapsulate an essential difference between the public and the private sector. According to Moore, public value can be seen as the total societal value that cannot be monopolised by individuals, but is shared by all actors in society and is the outcome of all resource allocation decisions.

Public services are services offered to the general public in the public interest (COM(2011) 900 final) with the aim of developing **public value**. The dynamics of public value can be represented as a direct correlation among three main pillars (Coats & Passmore 2008):

- **Authorisation** is the process of answering the "**what question**": What purpose does this public service exist to fulfil?
- **Creation** is about answering the *how* question: What form of service delivery will meet public expectations and allow for continuous improvement?
- **Measurement** is about answering the success question: How do we know if this public service has achieved its objectives?

Public Services are **publicly funded** activities arising from **public policy and/or legislation (public law)** aimed at the collective benefit of the public, and accountable to and governed by a **political process**.

We can propose **three main categorizations of public services**. The classification of the Functions of Government (COFOG) from the OECD (2011) comprises:

- General public services
- Defence
- Public order and safety
- Economic affairs
- Environmental protection
- Housing and community amenities
- Health

- Recreation, culture and religion
- Education
- Social protection

As for general public services, the classification includes:

- Executive and legislative organs, financial and fiscal affairs, external affairs;
- Foreign economic aid;
- General services;
- Basic research;
- R&D general public services;
- General public services n.e.c.¹;
- Public debt transactions;
- Transfers of a general character between different levels of government.

The COFOG classification is a standard one and very much used in public sector literature and statistics. It is basically a mix between the standard sectorial divisions used in the **organisation of the State itself** and the basic functions with respect to the **governed population**. We can deem it an official classification.

A second type that is used in the European System of Accounts (ESA, see Eurostat 1995: par 3.82-3.87; Eurostat 2001: p. 37 and pp. 112-137) distinguishes between:

- **Individual services**: those that are consumed by **individual households**;
- **Collective services**: those that are provided **simultaneously** to the society as a whole.

This distinction – which more or less coincides with the one found in the public economics literature, i.e. between **private goods with externalities** (individual services) and **public goods** (collective services) where consumption is 'non rival' and nobody can be excluded from it, is exemplified as follows:

- Individual services:
 - Education services;
 - Health and social work services;
 - Elective social security services;
 - Other personal and community services (i.e. recreation and cultural services, sewage and refuse disposal services, sanitation and similar services, road maintenance, etc.);
- Collective services:
 - General public administrative services (tax, population and business registry services, permits,);
 - Provision of services to the community as a whole (e.g. defence, justice, police, fire brigade);
 - Compulsory social security services.

It is easy to see that some of the **public services are entirely based on information** and are thereby digitally delivered: they process information and produce new information based on output. For instance, citizens provide the information that is continuously stored in population registries and the governments produce identity cards and passports that, apart from the fact that they are printed on paper, they display **publicly certified information**. Web 2.0 is crucial in this respect, as it emphasizes community-based input, interaction, content sharing and collaboration, more pervasive network connectivity and enhanced communication

¹ Not elsewhere classified.

channels. Thereby it is through Web 2.0 tools that the citizen is able to provide information and input to the government.

On the other hand, there are services that are delivered face to face and/or that provide a tangible output: utilities companies maintaining the sewage or road systems of a community or the police officer patrolling the neighbourhood to protect the resident of the community. Between these two extremes of what we call "information processing and producing services" and "tangible output services" there is wide scope for a mixture of these two (i.e. health services are information intensive but are produced face-to-face and by using concrete machinery). It should be stressed, to avoid any ambiguity of the meaning, that "information processing and producing services" can either be informative only or fully transactional (i.e. I sent my tax return information and I get back the certified information that I paid taxes, and all of this can occur through an end-to-end digitalised process). In the former, the collaborative information input from third parties is directly embedded and used in the production and delivery process. In the latter, the collaborative information input can indirectly help the re-definition and steady improvement of the service delivery.

Secondly, with the expression "**collaboratively produced public services**" one then implies that there are also **non-collaborative and adversarial services**. Paradoxically, however, one could claim that even before Web 2.0 all of the "information processing and producing services" were collaborative **inasmuch as government can produce them only by receiving information input from the constituencies**. Yet, there is still a basic insight to uncover. While there is an exchange of information, some public services are adversarial and based on the positive side of the concept of the conflict of interest. Typically, **adversarial** services are those falling within the monopolistic prerogatives of the State that define its sovereignty. The quintessential one, using the Weberian definition of the State, is the monopoly on the legitimate use of the means of **violence**. It is difficult to imagine collaborative production process in the **defence sector**. Another example is the prerogative of the state to collect taxes and tributes. While tax services are the most digitalised ones, we believe their production should not be collaborative in the **Web 2.0 sense**, since they must be adversarial and based on a positive conflict of interest. While many would claim that the online world is challenging it, the state still holds the monopoly on certified and legally valid personal identity and cannot open to free web 2.0 collaboration the production of identity cards and passports. This second consideration directly leads us into the third concerning the distinction between mandatory administrative services and elective human services.

Thirdly, we must consider the following distinction (Codagnone 2009):

- **Collective and mandatory public administration administrative services.** These are services that citizens must use as they concern obligations legally enforced by the government (paying taxes, various registrations requirements, permits, personal identity, etc.).
- **Individual, elective and opportunity-providing human services.** By this we mean services providing for the general welfare and basic living requirements of individuals, families, and communities (case assistance based on need and eligibility, workers' compensation, unemployment insurance benefits, child welfare, medical assistance, disability services, housing services, job opportunities, schools and higher education, services to the community as a whole such as: utilities, road safety, protection from crime, etc.).

Finally, we must add a brief specification on the distinction above with what concerns the specificity of businesses that to some extent differ from citizens' position vis-à-vis public administrations. As per citizens, also on businesses the government regulations impose providing some information requirements needed for administrative mandatory services. For businesses alike, there are public services that produce opportunities

(i.e. R&D funding, etc.). Yet, in relation to business, there is a third important category of public services: permits or certifications/protections that, if granted/provided, become a source of business opportunities and revenues. One illustrative example might be a permit to build a new housing or industrial facilities. Another example is the recognition and protection of a patent. Both of them, and many others, are type of decision-based services that usually need complex information coming from different sources and which are particularly based on technical expertise. As we have seen from the above discussion the expression "services" (and public services in particular) is varied, thereby in the analysis that follows we will be more specific about what is meant.

Related to public value, **Social Innovation** can play an effective role of enabler or game changer by proposing innovative and sustainable social services models which ideation and implementation require a stronger involvement of private and civil society players together with the public actor and the active participation of civil society. Whereas these considerations are true in all the sectors of our economy, they are mandatory in those sectors in which societal challenges are related to relevant societal needs which lack of economic interest from the private sector business perspective, and cannot be anymore longer afforded by the public sector alone. Under these perspectives Social Innovation can be seen as: "a solution to relevant societal needs as well as an increase in the ability of social actors to participate in this solution as a vital condition for economic growth. In this way, innovative solution to social problems will be not only more efficient, but also more sustainable and they will go beyond previous solutions..." (Phills, Deiglmeier and Miller, 2008).

In the same way social innovation is open, collaborative and experimental, involving production by large numbers of people working independently on collective projects without normal market structures and mechanisms, and it is aimed at producing new public services, such as mobile banking and payments in countries where the banking system is insufficiently developed.

1.1.2 Review of concepts related to "eGovernment"

eGovernment can be defined as the use of information and communication technologies (ICTs) to improve the activities of public sector organisations.

In this respect, according to the "eGovernment for Development Information Exchange" project, the activity of eGovernment includes:

- **eAdministration:** improving government processes and the functioning of public administration
 - In this respect the activities of eGovernment deal with cutting process costs; managing process performance (planning, monitoring and controlling); making strategic connections in government among agencies, levels and data stores; creating empowerment by transferring power, authority and resources.
- **eCitizens-eParticipation/eServices:** connecting citizens. Such initiatives deal particularly with the relationship between government and citizens either as voters/stakeholders, or as users of public services:
 - Providing citizens with details of public sector activities, in order to make public servants more accountable for their decisions and actions;
 - Increasing the input of citizens into public sector decisions and actions (democratisation or participation);
 - Improving the services delivered to members of the public along dimensions such as quality, convenience and costs;

- **eSociety**: building external interactions, i.e. building relations between public agencies and other institutions, such as other public agencies, private sector companies, non-profit and community organisations.
 - Improving the interaction between **government and business**;
 - Building the social and economic capacities and capital of local communities;
 - Creating organisational groupings to achieve economic and social objectives. In this regard the public sector can act as a partner or **facilitator**.

The **transformation and innovation** of the public sector, affecting the way public services are implemented and delivered, concerns the way public value is created (IPTs 2007). In this respect the EC Expert **Group Report on Public Sector Innovation** (European Commission 2013b) defines innovation in the public sector as the process of generating new ideas and implementing them to create value for society.

In this view ICT is transforming the ability of the public sector to implement and deliver public services, and thereby to produce public value. The **following technology** paradigms are enablers of innovation in public services design and delivery include big data and predictive analytics, offering new service opportunities for citizens and businesses; social networking, which offers new ways to deliver public services; mobile technology, allowing citizens to access public services from anywhere at any time; open and big data, allowing the co-production of new public services and ensuring a transparent process in service delivery/implementation; and finally cloud-based solutions, transforming interoperability and service provision. More in particular this latter category refers to a collection of public services serving as 'building blocks', which can be offered in an open, and interoperable way and reused and combined by public administrations and third parties as part of other services (Deloitte 2011). In this respect the project will also investigate the role for third parties that build on open data, open services and open processes to provide a new service.

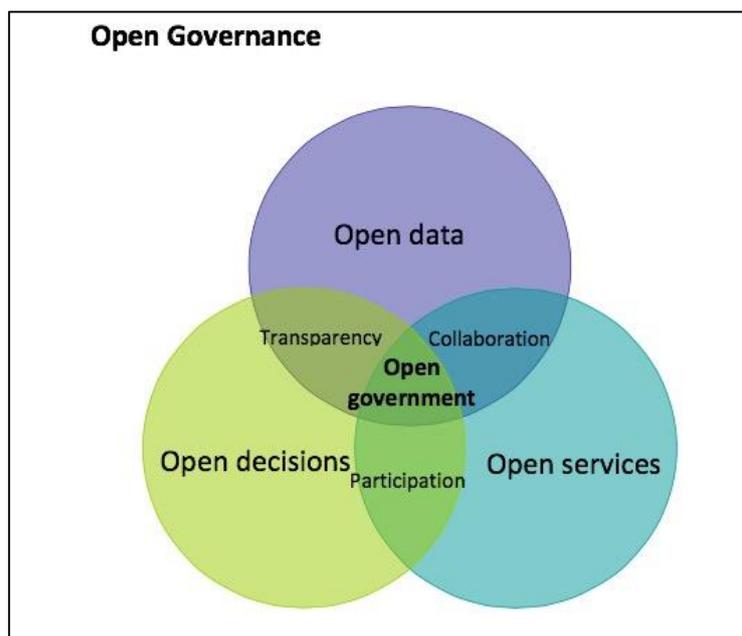
1.1.3 Review of Open eGovernment Services

Over recent years we have witnessed a multiplicity of new definitions of ICT-enabled government, each emphasizing a particular aspect: open government, government as a platform, collaborative services, government 2.0, public sector innovation, digital government, governing by network and others.

Open government is defined by the OECD (2005) as "the transparency of government actions, the accessibility of government services and information and the responsiveness of government to new ideas, demands and needs". The notion of **open government** has been articulated by the Obama administration into collaboration, transparency and participation, three dimensions that have also been taken up by the EU eGovernment Vision Paper².

² As reported by the EU eGovernment Vision Paper, the original source of the picture is <http://www.govloop.com/profiles/blogs/three-dimensions-of-open-government>, with the additional input from the H2020 Consultation Workshop (31/01/2013), Study on Collaborative Production in eGovernment - SMART 2010-0075 as well as talk of D. Tapscott at TED Global 2012 on radical openness – four principles of the open world.

Figure 2 - Key dimensions of open government



Source: Govloop

All these three dimensions have deep historical roots.

Transparency, intended in the Open Government Directive as "accountability by providing the public with information about what the Government is doing" dates back to the *Enlightenment* reaction against absolutist regimes (Linders & Wilson 2011) Sweden approved its Freedom of the Press act in 1766 which was concretely a Freedom of Information Act (FOIA). The principle is that the burden of proof falls on the government, not the person asking for information. In the US, transparency emerged as a major issue after the Second World War, and the FOIA was approved in 1966. Today, most EU countries have such act.

Participation, intended as the possibility for members of the public "to contribute ideas and expertise so that their government can make policies with the benefit of information that is widely dispersed in society" is obviously rooted in direct democracy so dates back to at least the Greek City-States.

Collaboration, intended as "partnerships and cooperation within the Government, across levels of government, and between the Government and private institutions" in order to improve the effectiveness of government is rooted in the subsidiarity theory and the role of the non-profit sector, which is already well described in De Toqueville's description of the United States: "Americans make associations to give entertainments, to found seminaries, to build inns, to construct churches, to diffuse books, to send missionaries to the antipodes; in this manner they found hospitals, prisons, and schools" (Toqueville, 1893). Today it is recognized that voluntary sector has played an important role in the development of welfare services and in relation to the emergence of the welfare state, and this issue has taken central role in the last 20 years. The Maastricht treaty establishes "cooperation between [the European institutions] ... and charitable associations and foundations as institutions responsible for welfare establishments and services".

All these dimensions have been heavily impacted by the Internet as a disruptive innovation: transparency through availability of open data; participation through e-democracy initiatives; and collaboration through social media and other collaborative online software, often open source such as Ushahidi.

The definition of "**open**" deserves further analysis. There is a fundamental intertwine between the technological dimension, where open refers mainly to the open source software, and the government dimension, where open refers to accountability and freedom of information. The definition provided by the Open Knowledge Foundation includes three dimensions:

- **Released under an open license** that allows use, redistribution, modification, separation, compilation, non-discrimination, propagation, application to any purpose and no charge
- Available for access at a "**reasonable one-time reproduction cost**, preferably downloadable via the Internet without charge".
- Provided in **open format**, i.e. in a convenient and modifiable form such that there are no unnecessary technological obstacles to the performance of the licensed rights. Specifically, data should be machine-readable, available in bulk, and provided in an open format (i.e., a format with a freely available published specification which places no restrictions, monetary or otherwise, upon its use) or, at the very least, can be processed with at least one free/libre/open-source software tool.

The general definition of "open" can be expressed into the concepts of open data, open software and open services. Open data can be freely used, modified, and shared by anyone for any purpose. In this respect the key features of openness include the availability and access at a reasonable reproduction cost and in a convenient and modifiable form; the possibility to reuse and redistribute the data, which must be provided under terms that permit reuse and have to be machine-readable; and finally universal participation, according to which everyone must be able to use, reuse and redistribute the data. This set of principles will increase transparency, will boost social and commercial value, as well as social participation and engagement of citizens.

The same goes for open source software, which is a type of software where everybody has access to the software's source code and can freely use, modify and distribute it. The combination of source code access and reusability of open source software provides more options than just redistribution of software to another actor. It also makes it possible for other actors to improve the source code and share the improved product with the original user of the software and with other users.

Finally open services are interoperable and reusable services that can be taken up and combined by public sector and third parties in order to provide their own value-added services to their customers. Open services ought to be easy to be accessed and exploited in order to develop applications. Open services management requires having complete solutions to support the development, publication and distribution of new services but at the same time solutions to manage their access (including security and payment) and validation (for instance the possibility to test them before their usage). In this respect open services should be re-usable by the mean of an open ICT architecture and innovative technological approaches (more on that in § 3.3). The reuse of public services by both different public administrations and third parties could make a significant contribution to the move towards the collaborative model of eGovernment and the reorientation of online service provision towards the creation of public value shared by all actors in society.

In the re-use of open data, open software and open services third parties have a central role (Deloitte 2010). In fact citizens could become engaged much more collaboratively in producing, combining, embedding, re-packaging and delivering a variety of core services. In this respect third party involvement can thus be key to delivering higher value to society, provided that the government open up their data in

accordance with the Public Sector Information Directive³, and move from a monolithic and closed approach to a more open form of service delivery providing re-usable services that third parties can integrate into their own new form of service delivery.

The term **Government 2.0** has been often used to illustrate the translation of web 2.0 principles in the government context, especially for what concerns the use of applications that facilitate interactive information-sharing and collaboration based on the notion of connectivity and user-centred design and facilitating large-scale participation and collaboration in terms of creating, editing, ranking and distributing content. One of the fundamental aspects of government 2.0 is the metaphor of "government as a platform" developed by (O'Reilly, 2011): the idea that government should refrain from trying to deliver directly the services, but rather create the conditions (by opening up data and services) for third parties to deliver the services. The metaphor of the platform refers to the strategy of Facebook and Apple, companies that rather than focussing on providing all services to all users opened up to third party providers releasing Software Development Kits that enabled, for one thing, the emergence of the App Economy which is now estimated to worth 63 billion Euros by 2018 (Breslin et al. 2014). The notion of a positive-sum game is equally included in the TAO government, proposed by Codagnone and Osimo and taken up in the EC vision of eGovernment in preparation of the 2011 – 2015 Action Plan.

The concept of Public Sector Innovation is strictly related to the others that focus on how OGS are delivered. According to European Commission (2013a), the four principles of Public Sector Innovation are:

- **Co-design and co-creation of innovative solutions** (with other Member States, other parts of government, businesses, the civil society and citizens). In this sense it is useful to distinguish among co-design, co-production and co-creation. Co-design consists in defining a problem and then finding a solution; on the other hand co-production is the attempt to implement the proposed solution; co-creation is then the combination of both. In this respect service co-creation requires collaboration of stakeholders with public service actors in the design, production and delivery phases;
- **Adopting new and collaborative service delivery models** (across public, private and non-governmental actors, both within and across national borders);
- **Embracing creative disruption from technology** (the pervasive use of social media, mobility, big data, cloud computing packaged in new digital government offerings);
- Adopting an **attitude of experimentation and entrepreneurship** (government itself needs to become more entrepreneurial).

Co-creation or collaborative service delivery emphasize the involvement of citizens and business in the service delivery. It is further articulated, according to Voorberg et al. (2014), in citizens' initiative, co-design, co-implementation, depending on the roles of citizens (whether they initiate the process, they collaborate in the design of the service, or they provide input into the service). The study on collaborative production of eGovernment (Osimo, Szkuta, Pizzicannella, & Zijstra, 2012) further elaborates on that arguing that collaboration should not be considered only as government "crowdsourcing" work, but as a multidirectional relationship where data and services are provided alternatively by government, civil society and the private sector, leading to a multiplicity of combinations. The most commonly known open government services, are provided by civic developers on top of open government data (such as public spending monitoring applications) or by government crowdsourcing some specific activities or decisions (such as in participatory budgeting initiatives). Similarly,

³ L 345/90. Official Journal of the European Union. 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information.

at the other extreme, it is clear that commercial crowdsourcing (such as the Netflix prize netflixprize.com) lie outside the domain of our interest. There are three areas, which are not commonly considered as fully part of open government but can't be overlooked:

- **Inter-agency collaboration and individual civil servant's entrepreneurship:** cases such as Intellipedia (the US inter-agency intelligence knowledge sharing platform) or Ambtenaar 2.0 (the community of open government civil servants launched born out of the independent individual initiative of a Dutch civil servant) show that transparency and collaboration are useful also within government;
- **Peer-to-peer support and social innovation:** initiatives which do not make use of open government data and are developed independently of government but are important in providing public value, such as Ushahidi.org, the collaborative mapping platform often used in crisis management
- **Commercial apps built on top of open government data:** the idea of government as a platform implies that some public services will be delivered by commercial third parties, such as Google Transit, Silverrail and Public Transit Community, which inform users about public transport timetables and transit in general. Some other examples include WeatherSource and OpenWeatherMap, which provide information on weather.

Table 7 - Different combination of citizen/government collaboration

Service Provider Data source	Government	Citizens / NGOs	Business
Government	Inter-agency collaboration and entrepreneurship	Open Gov apps Access to own personal data by citizens	Commercial apps Public private partnerships
Citizens	Civic crowdsourcing	Peer-to-peer support and social innovation	Private crowdsourcing

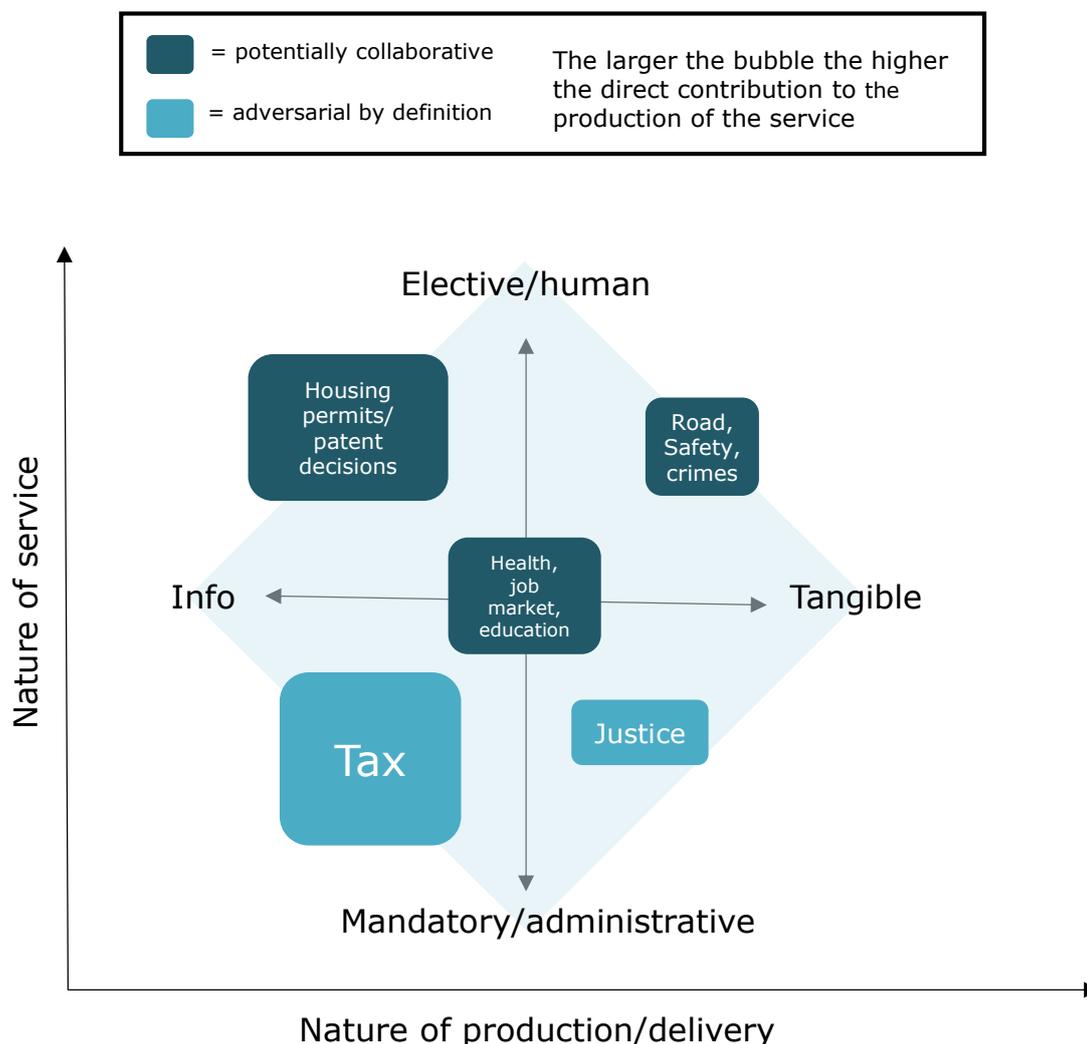
Source: elaboration of collaborative eGovernment study

Participation in public services production

Based on the above distinction of public services considered we are able to draw a detailed picture and point out all the relevant dimensions to test and preliminary map public services, identify where collaborative production is more likely to happen, how it might work and what is its **efficiency-effectiveness** impact.

We do this by commenting the typology of public services presented below:

Figure 3 - Typology of public services



Source: Consortium elaboration

Among the various dimensions considered, typology is mainly based on the following two:

- Nature of the service production/delivery ranging from **"information processing and producing services"** to **"tangible output services"**;
- Nature of the services: **General and mandatory public administration administrative services** versus **Elective and opportunity-providing human services** (we include in this classification granting business permits or recognition of special rights such as on patents).

The size of the bubble conveys how directly can the collaborative input enter into the production of the services. The colour distinguishes the quintessential adversarial services (where collaboration is to be ruled out except for very innovative cases that we may find during the research for this study) and those clear candidates for collaborative production processes.

Tax is clearly the type of public function where the potential direct input into the production is greater. In fact, the tax collection processes have been the first to be

digitalised and put online. What is more, in some countries, the law on intermediaries imposed the digital tax return. This is by definition an adversarial and conflict of interest based aspect of public administration where we see no space for collaboration and where we normatively think that such collaboration is not positive from the perspective of liberal democracy, except for report on fraud. In general, we see that the collaboration related to all policies and laws pertaining to the prerogative of the modern state sovereignty (i.e. justice) is difficult to be put in place and not necessarily beneficial.

The area of services where the collaborative information input enters directly into the production process is that of granting permits and special right recognition to business. Those services require highly complex input from technical expertise to reach a decision, so the involvement of those requesting the permit /recognition of patents and of peer technical expert can greatly improve the knowledge basis of decisions, speed up the process, and reduce the need for public employees to look for information from explicit knowledge as they get it directly from its tacit source.

On the other hand, in the top right quadrant, we inserted those services that are delivered not in terms of certified information or decision but in much more concrete, visible and face-to-face fashion. The streetlights are part of the road safety maintenance that local government provide to their community. On the other hand, one could also imagine that the local government can use the information from citizens to put online new information aimed at providing alerts to drivers until the identified problems are fixed.

Finally, there are traditional elective human opportunities providing services that fall somewhere in the middle of the distinction between "information processing and producing services" and "tangible output services" such as health, education, job market services where the collaboration input can partly go in the design of the service and partly in the production.

This distinction deals with the definition of services as entities. In real life, services are a combination of different aspects. For instance, human services (e.g. children education support) often imply some degree of compliance with administrative services (e.g. ID cards).

It is important here to mention a channel through which citizens, businesses and NGOs, can be involved in the co-creation and co-production of public services. This is social innovation, which is by itself process of co-creation, since it seeks the collaboration of multiple stakeholders. Successful **social innovation** relies on the **participation of different stakeholders**, and one of its central elements is that it deliberately seeks the active participation of citizens and grassroots organizations in order to produce social outcomes that really matter. In this way social innovation really addresses societal needs and challenges. The success of innovation depends on the involvement of various actors (organizations, professionals and citizens) during the innovation process (Bekkers, Tummers, and Voorberg, 2013). Thereby, social innovation can be considered as a process of co-creation.

Participation in policy making

The term eParticipation means the participation of citizens to policy making through electronic means. According to the OECD (2011) democratic political participation by citizens must entail the ability to get informed, to be consulted, and take part in:

- **Information:** one-way relationship where government produces and delivers information for citizens;
- **Consultation:** two-way relationship where citizens provide feedback from government. Government sets the agenda and manages the process;

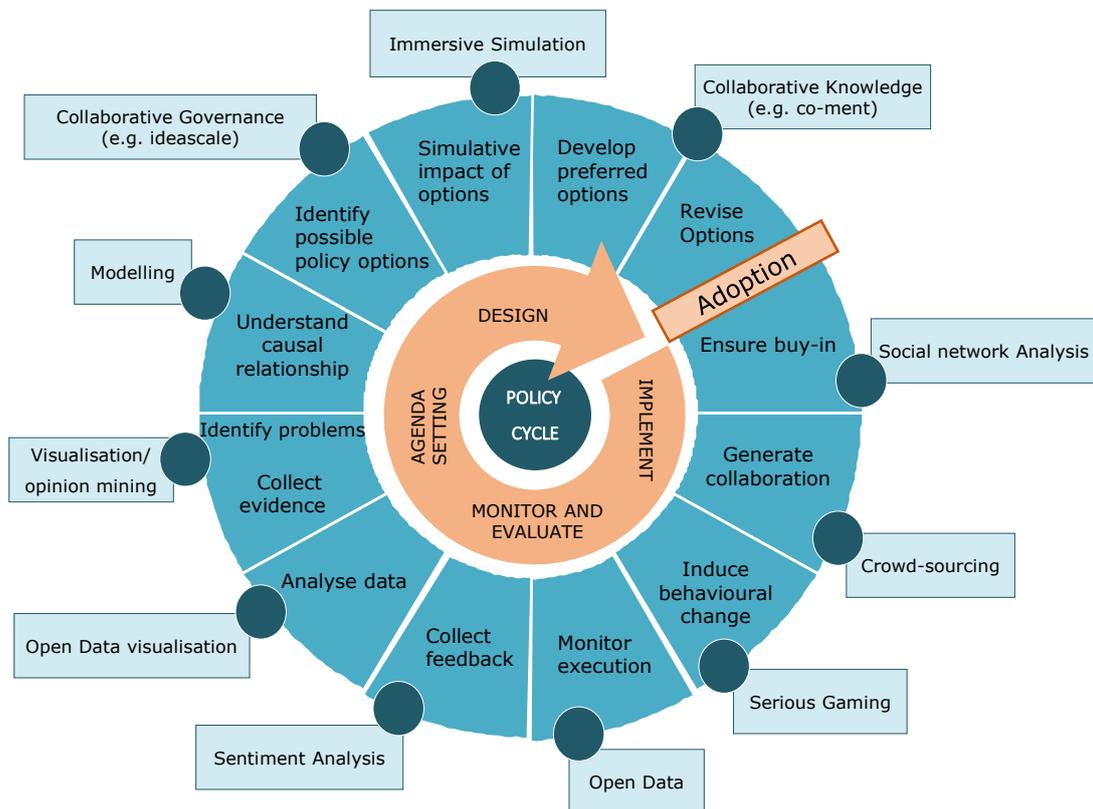
- **Active Participation:** partnership with government in which citizens active engage in defining process and content of decision making.

According to Macintosh (2004) there are three main levels of participation:

- **E-enabling**, which deals with supporting those who would not typically access the Internet and take advantage of the large amount of information available;
- **E-engaging**, concerned with consulting a wider audience to enable deeper contributions and support deliberative debate on policy issues;
- **E-empowering**, concerned with supporting active participation and facilitating bottom-up ideas to influence the political agenda.

The concept of eParticipation is strictly related to the one of open policy-making, which aims at exploiting collective intelligence in policy-making, including crowdsourcing. It includes stakeholders input throughout the policy cycle under the assumption that knowledge is decentralised and citizens-expert can help improving the quality of policies (Osimo, Mureddu, Onori, Armenia, & Misuraca, 2013). Open policy-making is not only useful in the design and evaluation of policies, but it can be a wider support throughout all the phases of the policy cycle.

Figure 4 - Innovative methods throughout the policy cycle phases



Source: Crossover Roadmap

The policy cycle starts with the **agenda-setting phase**, where the problem is identified and analysed. In this section, visualization, opinion mining and sentiment analysis can help to identify the problems at an early stage. Focus groups can also be used to identify the problem to cope with, as well as to disentangle the casual relationships behind the problem, gathering baseline data and information, understanding the causal roots that need to be addressed. Focus groups in this phase can be also used for understanding local perceptions of a particular subject or topic, especially for sensitive issues.

Once the problem is clearly spelled out, we move to the **policy design phase**, where collaborative solutions are useful to identify the widest range of options, by leveraging collective intelligence. In order to facilitate the choice of the most effective option, iterative prototyping and focus groups supports decision-makers by refining solutions that are more likely to work in practice, questioning hidden assumptions and suggest ways of framing a problem. Collaborative governance enables then to develop further and fine-tune the most effective option, for example through commentable documents. An open approach to policy design can also ensure the take up by citizens. In this respect also Delphi surveys and interactive workshops have a pivotal role in gathering collective insight from stakeholders, while visual harvesting is useful to put order in the discussion and in summarizing the main findings and decision to be translated into policies.

Once the option is developed and adopted, we enter into **policy implementation**. In this phase, it is crucial to ensure awareness, buy-in and collaboration from the widest range of stakeholders: social network analysis, crowdsourcing and serious gaming are useful to deliver this.

Already during this implementation phase, we move into the **monitoring and evaluation**. Open data and online engagement allow stakeholders and decision makers to better monitor execution; together with sentiment analysis, they can be used to evaluate the impact of the policy, also through advanced visualization techniques.

Whilst citizens' participation into policy making is considered generally as having a purely democratic scope the links between participation and economic competitiveness have been highlighted into the scientific research. As explained by Hoskins, B. Kerr, Jo H. Abs, J. Germen Janmaat, Morrison, J. Ridley, R. Sizmur, J. (2012) economic competitiveness and social cohesion are interrelated and may well be mutually reinforcing each other. In fact countries that have the characteristics of being highly competitive tend also be highly participatory with high levels of social cohesion, for example, the Nordic countries.

1.2 Definition and Taxonomy

The following sections lay down the foundation of the taxonomy by an introductory set of definitions. The taxonomy which is the result of a desk research, is tested against real cases and stakeholders inputs. It is represented into a set of tables and graphics

1.2.1 Definition of Open eGovernment Services

As already stated in the introduction, Open eGovernment Services (OGS) are **open, collaborative and digital based services** characterised by a **deliberate, declared and purposeful effort to increase openness and collaboration** through technology in order to deliver **increased public value**. The open, collaborative and co-production features exist in all phases of the design, deployment, implementation and delivery of the service. Collaboration is understood in multidimensional way. It can happen at different level and between different stakeholders. Citizens, businesses and the civil society can collaborate directly with the public sector or indirectly for instance by utilising Open Government Data that are released by the public institutions. When talking about OGS the role played by the government can range from the one of asset provider, enabler or direct collaborator. Privately developed applications which deliver **public value** may also be considered OGS if the government has played some sort of **"responsive role"** (taking the lead of the service once it is implemented or supporting the private initiative).

In this respect the main features of OGS are:

- **Openness:** effort to publish elements and components of the service (data, service components, decision support), with respect to traditional eGovernment. Increased openness aims to ensure accountability and enable collaboration. Openness can refer to the publication of open data that were not available before, or to the production of reusable software objects that can be re-composed as in the concept of Service-Oriented Architecture.
- **Collaboration:** recognition that government should not only aim at fulfilling societal and economic needs by direct service provision, but should enable and deliberately pursue the collaboration of third parties. This includes services designed and provided by private players without the awareness of government but that help solving issues related to public services.
- **Technology:** OGS are fundamentally reliant on digital technology to deliver the services. Digital technology is used to provide disruptive innovation in the way services are delivered and is by definition collaborative, through open data, open web tools or collaborative platforms.

All these three aspects must be present for a service to be classified as OGS. As such are **excluded from OGS:**

- Traditional (non-open and/or non-collaborative) eGovernment initiatives for online or mobile service provision;
- Traditional outsourcing of public services to private providers, regulated by contractual arrangements;
- Live participatory initiatives such as town hall meetings;
- Pure citizens-to-citizens collaboration related to general welfare such as online philanthropy and social innovation but not directly related to public services;
- Services provided by the private sector that do not build on open government data and that are not related to public services.

On the other hand, **OGS include:**

- Initiatives for transparency and open data regarding both public service provision and involvement in policy decision, including access to and use of own personal data by citizens;
- Services to citizens and services to companies;
- Services pertaining to all branches of government (legislative, executive, judiciary) where government plays some role, as leader or enabler;
- Services where non-government parties play a different role: from lead, to contributor, to simple input in the design, with or without formal agreements about the role (e.g. contracts)⁴.

Finally, there are aspects that we propose to include in the OGS definition, despite being not designed to increase the collaboration between government and third parties. We define these as **quasi OGS:**

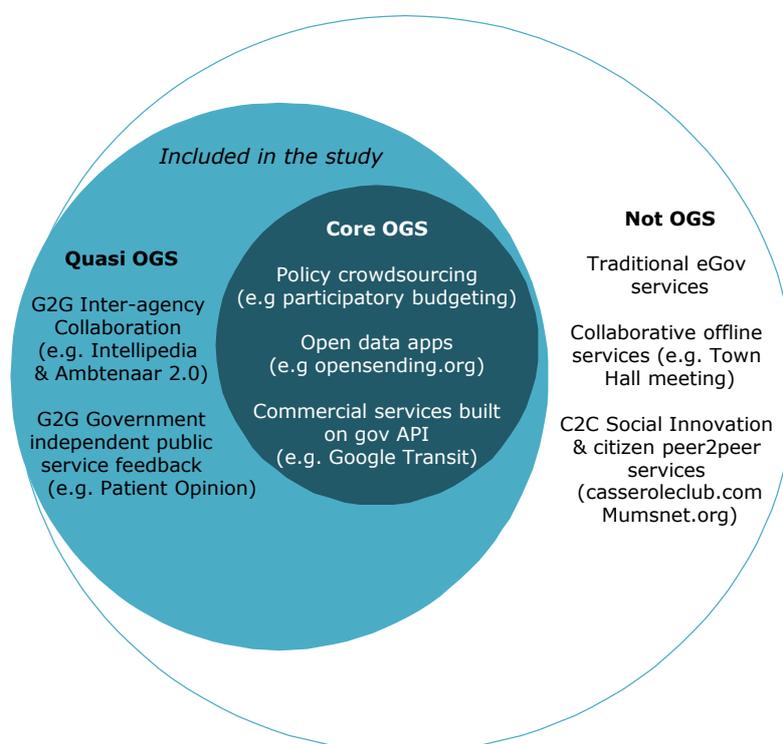
- Services delivered by citizens or private sector without any forms of government initiative, and that do not even rely on open government data, but that directly concern public services and which induce a re-action by government. This includes many services built by citizens with the support of other citizens such as Fixmystreet.com and PatientOpinion.org;

⁴ By nature, Open Government Services are designed in such a way that allows any third party to add value to the services without the need for a request to, a payment to or an agreement by government.

- Government initiatives exclusively aiming at increasing collaboration within government, such as social networks of civil servants and inter-agency knowledge sharing platforms. These forms of intra-government collaboration are mentioned in different policy agendas, such as the EU Public Sector Innovation Group which "co-creation with other parts of government" (European Commission 2013a) and the collaboration aspect as mentioned in the US Open Government directive. This form of collaboration is different from traditional government collaboration (such as Interoperability Frameworks) insofar it aims to create enabling conditions for collaboration from whatever agencies are interested to collaborate, rather than planned collaboration through formalized agreements.

Figure 5 summarizes this analysis.

Figure 5 - Conceptual model of the definition of OGS



Source: consortium elaboration

This scheme helps defining what are Open Government Services, but still leaves room for ambiguity with regard to the "limitations" of public services because of the blurring of the boundaries between private and public players. It has to be clarified that Open Government Services "act upon" the standard definition of public services described in section 1.1 "Main concepts related to OGS". In other words, what falls outside what is defined in that section also falls outside our definition of OGS. Moreover, the definition provided fully embraces the notion of government as a platform, i.e. when government provides open data and open services that enable the public at large to build added value services. These second-level services can be, but not necessarily are, OGS. OGS that provide similar services to the original public service or add value to it. For instance, Google Transit provides better and interactive information on public transport, and thereby constitutes an OGS. Equally, FixMyStreet does not make use of open data or open services, but acts upon a traditional public service such as street maintenance. On the other hand, services that make use of open government data, but not to deliver public services, do not fall upon our definition of OGS. As an

example, open government data are used by real estate agencies to estimate the house prices: the final service is a more efficient housing market, which is not part of public services and as such is not part of OGS. However, any benefit created by such services, such as job creation, would be considered by the study as an impact of OGS.

Taxonomy of Open eGovernment Services

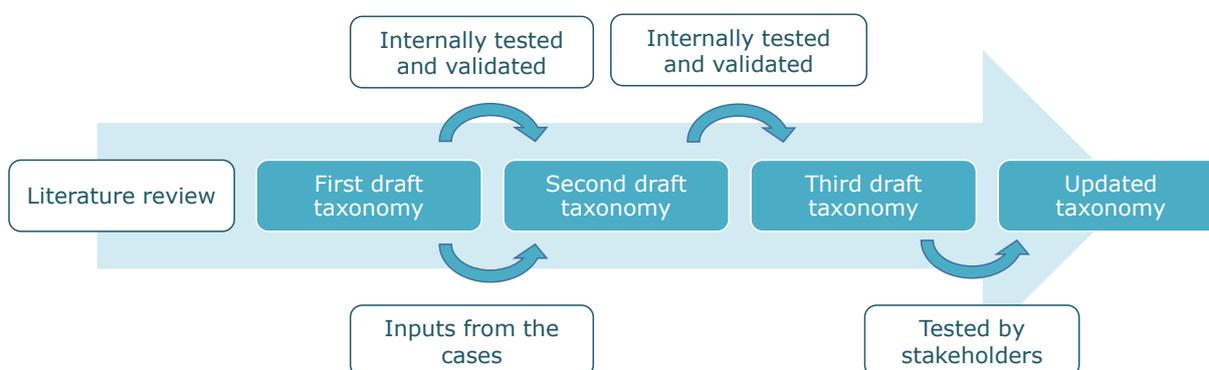
After providing a definition of OGS, the study elaborated a taxonomy of OGS building on the following relevant activities:

- A systematic literature review, ensuring that the most up to date available evidence and definitions was taken into account;
- A dynamic online engagement, that created a meta-community by reaching out systematically to existing communities active in this domain, to be involved in the different phases of the project;
- A thorough mapping of relevant cases of open eGovernment services that enables the creation of a taxonomy.

More specifically, the process for the elaboration of the taxonomy is depicted in *Figure 6*. The proposed taxonomy adds value compared to existing ones as it builds on the integration of existing taxonomies, and has been enriched through a feedback and validation process by the mean of stakeholder engagement and real cases validation.

In particular the process of identification of real cases has been, on the one hand, instrumental in validating the definition and taxonomy (as shown in the figure below) and on the other, useful to map the overall cases available and identify possible gaps for some parts of the taxonomy.

Figure 6 - Procedure for the elaboration of the final version of OGS taxonomy



Source: consortium elaboration

Focusing particularly on the process of cases identification, the main steps accomplished were the following: a long list of OGS cases was drawn, composed of over **250 cases**. The cases were identified mainly via desk research through online repositories and literature. Based on the defined taxonomy, 78 cases were considered "out of scope", while the remaining **174 cases** were further analysed. From this list – apart from using it to validate the developed taxonomy – we also extracted the cases used for our Cost Benefit Analysis, as presented further ahead in section 1.3.2 "Analysis of the Value of Selected Cases".

As mentioned, the first version of the taxonomy, building on the literature review, has been tested and revised by the project partners and validated by the preliminary analysis of the cases. The second draft taxonomy has been enriched and validated by the mean of feedback from the European Commission, as well as from a more thorough analysis of cases and literature sources. The final version of the taxonomy has been enriched with feedback and validation from the relevant stakeholder communities engaged.

During the process of the taxonomy elaboration, a set of challenges were identified:

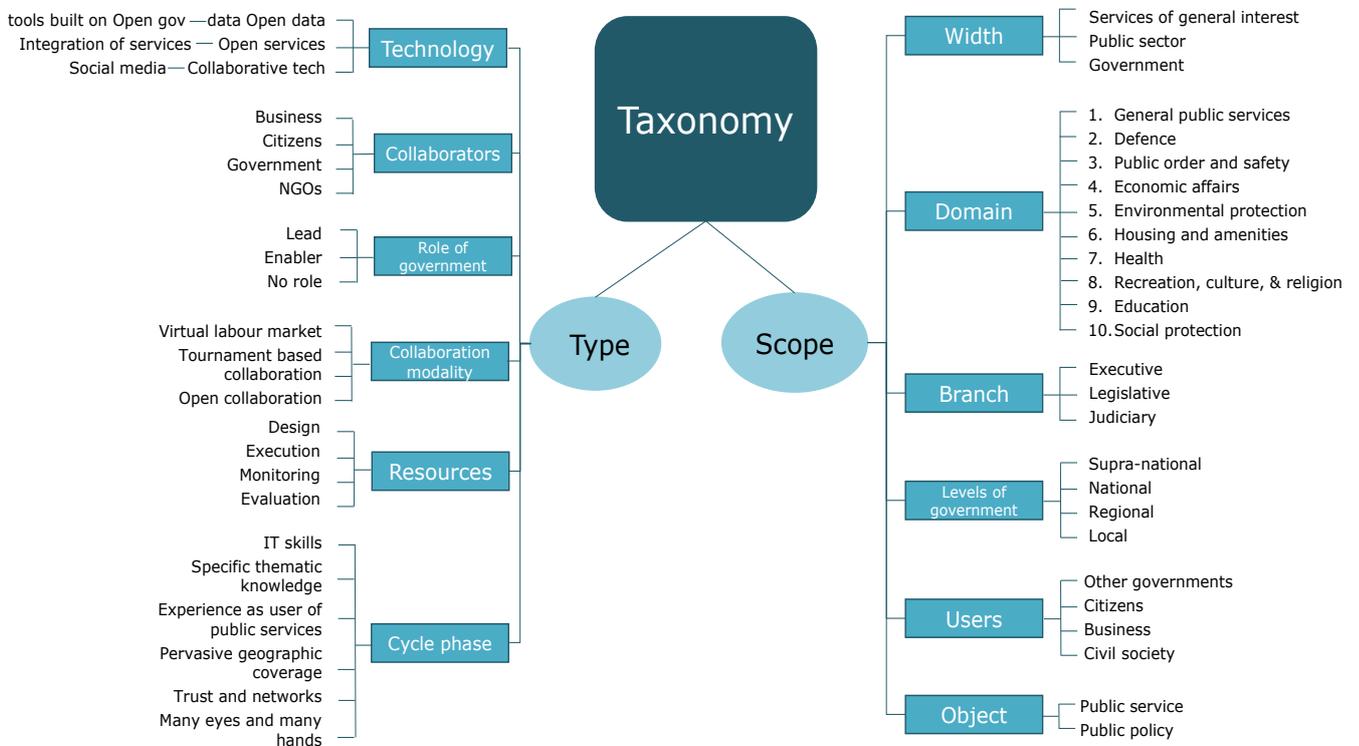
1. There is a semantic ambiguity in the expression "open services". The triadic distinction between open data, open services and open decisions (European Commission 2013a) can be misleading. Open services can be understood as
 - a) Open public services, distinct from open decisions/policy or
 - b) As open technological components to be reused by third parties in the context of Service Oriented Architecture, as opposed to simply reuse of open government data.

In this regard, there is the need to distinguish the triad in two different couples: open data versus open services; and open services versus open decisions.

2. Beside citizens, businesses and government, it is important to consider the specific role of NGOs, which are extremely active in developing OGS;
3. There is an overlap between the co-design / co-implementation distinction and the policy cycle phases. They can be merged under one classification;
4. The central focus of the analysis is represented by actual services, while policies or other support initiatives are out of the scope;
5. In analysing the role of third parties, it's important to distinguish between those taking part in the collaboration and the final users. For instance, it could be that a service to citizen includes some companies as collaborators or vice versa, at least in theory.

Based on these findings, the final taxonomy is structured as in Figure 7 below.

Figure 7 - Proposed taxonomy



Source: consortium elaboration

In the remaining of the section the taxonomy depicted in Figure 7 will be thoroughly explained. In particular there is a distinction between the taxonomy of scope and the taxonomy of types of OGS.

Concerning the scope of OGS, the relevant categories are:

- Main elements of the taxonomy (width)
- Domains of the taxonomy
- Branch of the government (power)
- Levels of government
- Actors that can benefit from OGS (users)
- Object of the taxonomy

The relevant categories are thoroughly explained in the boxes below.

Table 8 - Width

Width - indicating the main elements of the taxonomy
<p>Services of general interest. This class of services provide an essential safety net for citizens and helps promote social cohesion in areas such as health care, childcare or care for the elderly, assistance to disabled persons or social housing. Such services involve tasks and functions related to citizen`s welfare and participation, and refer to the supply of basic infrastructure and services for businesses. Clearly OGS are a subset of services of general interest.</p>
<p>Public sector. This concerns the part of the economy providing various government services, including such services as the military, police, public transit and care of public roads, public education, along with health care and officials working for the government itself. Public sector leads the design and implementation of OGS, even if in collaboration with citizens and businesses.</p>
<p>Government. It is an institution set up by a community of people (e.g. nation, state, city, region, association, federation) to address issues and problems which resolution is beyond the ability of self-organisation or private, individual action.</p>

Source: consortium elaboration

Table 9 - Domains of the Taxonomy

Domains of the taxonomy
<p>General public services. It includes executive and legislative organs, financial and fiscal affairs, external affairs, foreign economic aid, general services, basic research, R&D General public service</p>
<p>Defence. It includes military and civil defence, foreign military aid, R&D related to defence</p>
<p>Public order and safety. It includes police, fire-protection services, law courts, prisons, R&D related to public order and safety</p>
<p>Economic affairs. It includes general economic, labour and commercial affairs, agriculture, forestry, fishing and hunting, fuel and energy, mining, manufacturing and construction, transport, communication, related R&D.</p>
<p>Environmental protection. It includes waste and water waste management, pollution abatement, protection of biodiversity and landscape, related R&D</p>
<p>Housing and community amenities. It includes housing development, community development, water supply, street lighting, R&D related;</p>
<p>Health. It includes medical products, appliances and equipment, outpatient, hospital and public health service, R&D related to health;</p>
<p>Recreation, culture and religion. It includes recreational and sporting, cultural services, broadcasting and publishing services, religious and other community services, R&D;</p>
<p>Education. It includes pre-primary, primary, secondary and tertiary education, post-secondary</p>

non-tertiary education, education no definable by level, subsidiary services to education, R&D
Social protection. Services related to sickness and disability, old age, survivors, family and children, unemployment, housing, social exclusion

Source: consortium elaboration

Table 10 - Branch/power of government

Branch/power of government
Executive. This branch is the part of the government having the authority and responsibility for the daily administration of the state as well as having the power to execute the law. Top leadership positions in the executive branch include the head of government, the defence minister, the interior minister, the foreign minister, the finance minister, and the justice minister.
Legislative. This branch is the law making body of a state or anyway a political unity and has the power to enact, amend, and repeal public law. The main actors related to the legislative branch are deliberative assemblies that debate and vote upon bills.
Judiciary. This branch interprets and applies the law in the name of the state, providing a mechanism for the resolution of disputes.

Source: consortium elaboration

Table 11 - Levels of Government

Levels of government
Supra-national. An international organization, or union, whereby member states transcend national boundaries or interests to share in the decision-making
National. This is the level of the state, for example EU Member State level
Regional. This is a form of public administration, which exists as the lower tier of administration than the central state
Local. This level of administration represents the lowest tier of administration and it includes province, department, county, prefecture, district, city, township, town, borough, parish, municipality, shire, village, and local service district

Source: consortium elaboration

Table 12 - Users Benefiting

Users benefiting
Other governments. OGS can be used to strengthen the boundaries and communication between governments. For instance in some regions we are seeing close collaboration between metropolises from different countries for what concerns Smart Cities initiatives which are often co-created by citizens
Citizens. OGS services can be created with the collaboration of citizens, who can for instance provide information or participate to the creation of the service
Businesses. Idem for the businesses, which can be involved in the design of the service or build services using the government as a platform

Source: consortium elaboration

Table 13 - Object of the Taxonomy

Object of the taxonomy
<p>Public services. Activities that are publicly funded and arise from public policy and that are for the collective benefit of the public, accountable to and governed by a political process. This includes both administrative and human services, and obviously represents the core scope of our taxonomy</p>
<p>Public policy. This is the principled guide to action taken by the administrative executive branches of the state with regard to a class of issues in a manner consistent with law and institutional customs. In most case public policy builds on national constitutional laws and regulations. Public policy does not relate only to the legislative branch, but also to the executive. It is related to the concept of "open decisions" as in European Commission: "A vision for public services" (2013a)</p>

Source: consortium elaboration

Regarding the taxonomy of types of OGS, to be identified as such, a service must fulfil at least one feature of each category:

- Type of technology adopted
- Types of collaborators in service provision
- Role of government
- Type of resources
- Collaboration modality
- Phase in the policy cycle

Also in this case, the relevant features are explained in the boxes below.

Table 14 - Technology Used by the Service

Technology used by the service
<p>Open data. Initiatives based on open government data, released typically in bulk formats through open data portals. An example of such projects is http://wheredoesmymoneygo.org/, which visualizes data based on open government data.</p>
<p>Composable services. This category regards the mechanism by which services are combined to fulfil a business or operational process (Deloitte 2011), and thereby concerns initiatives reusing not just data but software components. Relative this point, it is crucial the view of services as open technological components to be reused by third parties in the context of Service Oriented Architecture, according to which different object composing the service are separated in terms of responsibility from a business oriented point of view and interact through Application Programming Interfaces (Rest / Soap, XML / JSON). For instance, Unit4 Access Point (https://ap.unit4.com/) builds on PEPPOL services to provide API access that integrates with invoicing services of business and government. This technological approach helps in understanding what kind of services could be opened up, what will the level of granularity be, who will use the service and how to use them. In this respect our taxonomy builds also on Deloitte (2011), which developed a service taxonomy and methodology in order to identify the building blocks of public services delivered online starting from the service categorization by Josuttis (2007), who distinguishes among:</p> <ul style="list-style-type: none"> • Process Public Services which represent actual workflows or business processes, combining other (basic and/or composed public) services through service orchestration; • Composed Public Services: based on other services which are combined into a new composed service; • Basic Public Services, which implement basic business functionality and include Basic Data Services (reading or writing data from or to one backend system), and Basic Logic Services (representing fundamental business rules). <p>Based on this distinction the study by Deloitte (2011) was able to identify a set of Fundamental Services. More in particular Deloitte (2011) defined a Fundamental Service as a basic public service (both data and logic based) that "is autonomous and that is provided by a single responsible role, and receives as input only the output from basic data services, documents or</p>

objects produced by citizens, businesses or administrations".

Other technologies can also be used to support different forms of human collaboration, such as collaborative tools and social media. For instance, Commentneelie.eu allowed anyone to comment on speeches by former EC VicePresident Neelie Kroes.

Source: consortium elaboration

Table 15 - Types of Collaborators

Types of collaborators in service provision ⁵
<p>Citizens. Individual citizen and NGOs can have an active role by providing data or launching online tools (e.g. Fixmystreet.com is a platform launched by an NGO and which enables citizens to provide data)</p>
<p>Business. It can be involved in the design phase (e.g. NemHandel) or directly build services on top of government data. Examples of the latter include Google Transit, Silverrail and Public Transit Community, which inform users about public transport timetables and transit in general, or WeatherSource and OpenWeatherMap, which provide information on weather</p>
<p>Other government agencies and civil servants. Services can be collaboratively built by different part of the public service and individual civil servants. For instance, http://ambtenaar20.ning.com/ is a social network for civil servant launched by an individual civil servant on a voluntary basis</p>

Source: consortium elaboration

Table 16 - Role of Government

Role of government
<p>Lead. Government itself can launch OGS. For instance, the UK NHS choices service includes the possibility for users of health services to provide feedback</p>
<p>Enabler. Any service built thanks to the increased openness and collaboration, based on the initiative of citizens business or NGOs. Typically all the apps built on top of open government data fit into this case, such as the OpenBilancio service which analyses spending data</p>
<p>No role. OGS can be built by third parties without the authorisation nor awareness of government, and sometimes in opposition to it. This refers to services that for instance scrape government data and build services on top of it. For instance, FixMyStreet and Farmsubsidy were originally built without any government involvement by scraping data out of PDF reports</p>

Source: consortium elaboration

Table 17 - Type of Resources Used

Type of resources used to provide the service ⁶
<p>IT skills. Developers and hackers are, broadly speaking, more skilled than government at creating applications in a very short time frame, also because of the absence of complex institutional requirements. For instance, opencorporates.com is a far more usable and sophisticated service that government have implemented on managing company information</p>
<p>Specific thematic knowledge. Wikipedia teaches us that everyone has something (s)he is expert on. Peertopatent exploits the technological knowledge on things such as parallel simulation, Netsmum the maternal experience</p>
<p>Experience as users of public services. It is costly and difficult for government to</p>

⁵ This refers to those participating in the provision of the services, while the users are described in the previous section.

⁶ See Osimo, Szkuta, Pizzicannella, & Zijstra (2012)

understand the perspective of users of public services. Open feedback channels such as Patient Opinion highlight problems that government would not think about

Pervasive geographic coverage. In many cases, citizens have a more pervasive coverage of the territory than government, at least in populated areas. It is far more effective to let citizens casually signal a problem in a street than to have civil servants travelling up and down the city. This is particularly relevant in disaster situation where only citizens have the information at the right time, such as in the case of crisis where citizens on the ground can share valuable information, if properly managed (as in the services enabled by Ushahidi.org)

Trust and networks. When it comes to daily lifestyle choices, citizens make choices following the recommendations of friends and experts, rather than civil servants. For government to convey messages and induce behavioural change, such as inducing people to live a healthier life as in ActiveMobs, it is well known that you have to take into account the power of imitation and influence of networks (Ormerod, 2010)

Many eyes and many hands. Citizens are more and it is therefore more effective to let them monitor the quality of the data or to help doing large collaborative works such as in the case of DigitalKoot where 80.000 Finnish citizens took part in an online game to digitize and catalogue old newspapers and journals

Source: consortium elaboration

Table 18 - Collaboration Modality

Collaboration modality ⁷
Virtual labour market. This includes a reward for each participant for the work carried out, often through platforms such as Amazon Mechanical Turk. However, this is very rarely used in the context of OGS
Tournament based collaboration. This refers to competition where the monetary reward goes only to the winner. Inducement prizes are organised in this way, and crowdsourcing platforms such as challenge.gov use such method. This is also the principle of hackathons
Open collaboration. Most of the times, OGS leverage the voluntary and collaborative effort of citizens to contribute to the public good through any of the resources listed above.

Source: consortium elaboration

Table 19 - Phase in the Policy Cycle

Phase in the policy cycle in which collaboration is provided
Design. Third parties are involved in the collaborative definition of the service and policy. For instance, companies have been involved in the design of NemHandel, or citizens contribute to the design of the mid-term review of the Digital Agenda for Europe in 2012
Implementation. Third parties actually help delivering the service or policy, for instance by providing data or work contributions as in the case of DigitalKoot where citizens helped to digitize ancient journals held by the National Library of Finland
Monitoring. Third parties can be involved by providing public open review of public spending as in the case of Monithon
Evaluation. Citizens can be involved in the open evaluation of public services, for instance by providing feedback on hospitals (as in the case of Patient Opinion)

Source: consortium elaboration

As already mentioned, the taxonomy presented was tested against the identified long-list of 176 cases of OGS. In terms of scope, the vast majority of cases ($\approx 75\%$) pertained to the executive branch of government, while the remaining part to the legislative sector; only 3 of the identified OGS cases applied to the judiciary.

⁷ See Prpi, Taeihagh, & Melton (2015)

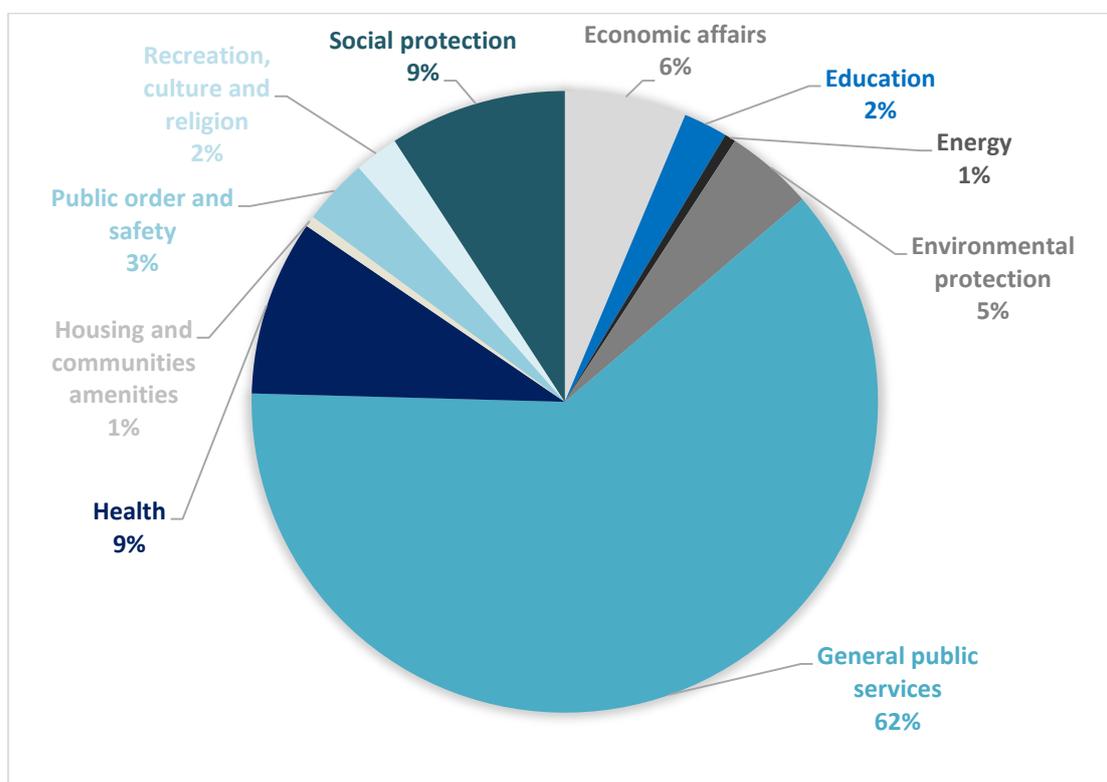
Consistently, the majority of initiatives identified referred to public services ($\approx 85\%$), rather than to open decision-making in public policy.

With regard to the phase of service or policy cycle, about half of the identified initiatives referred to the "implementation" phase, while the remaining part equally split among the "design" and the "evaluation" phase of OGS.

When it comes to the types of collaborators mainly involved, the slight majority is represented by NGOs ($\approx 55\%$), confirming the important role that they play in this domain. Government of course has also a prominent role in managing these initiatives ($\approx 25\%$ of cases). On the other hand, the low number of initiatives lead by businesses is quite surprising (only 8 cases out of 176).

Finally, the following figure shows distribution of identified OGS cases across governmental sectors (based on COFOG classification). Many initiatives - in particular related to open data - are crosscutting and referring to general public services. However, many different sectors are covered by the cases.

Figure 8 – Distribution of mapped OGS cases accordingly to governmental sector



Source: consortium elaboration

1.2.2 Use of the Taxonomy in the Study

The number of potential combinations of the elements of the taxonomy is clearly vast and it would not be possible to cover them all in the Study. Consequently, the focus was placed on specific strategic priorities, and a range of different services considered that ensures coverage of the widest range of impacts. To this end, clusters of COFOG sectors were used as a high-level segmentation:

- 1) **Human services** refer to services to citizens (and in some cases companies) that provide concrete support, such as health, education, and culture. These services mainly refer to COFOG 6 to 10⁸; they related to the executive branch. The final users as well as the source of collaboration are citizens and business, rather than government. The collaborative dimension in this category of services is when citizens rely on their experience as users of public services, by providing very specific, concrete, localised knowledge about an issue: for instance a hole in the street, the quality service of an hospital, how to write a business idea for fund raising.
- 2) **Administrative services** include those services which are compulsory, they are necessary to the functioning of government even though they do not provide visible service to users. They concern mainly COFOG 1 and 4, the executive branch, and cover collaborative services to citizens and business and other government agencies.
- 3) **Participatory services/policymaking** refer to the open, participatory decision-making services. They do not refer to a specific COFOG, but rather to the policy-making aspects across government. As such, they refer both to the legislative and executive branch.

Furthermore, following Waller and Weerakkody (2016), we can elaborate a new refinement of this categorisation by **policy instrument type**. Waller and Weerakkody (2016) define policy instruments as "the tools that governments choose from to intervene in the economy, society and environment to make change, such as taxes, benefits, licences, information campaigns and more tangible things like public services and infrastructure". Clearly, the classification by type of services remains, while the introduction of the instrument used to carry the service allows a further refinement. In fact Administrative Services are categorized as based on information provision (i.e. providing information, data, or allowing the self-collection of information), and based on transactions (e.g. taxes, registration or entitlements). In the same way, Human Services are distinguished into public services (e.g. health) and public goods (e.g. roads and platforms for public use). Finally, the services based on Policy Participation are defined as processes to choose policies and instruments.

Table 20 - Sub-classification of Services by Instrument Type

OGS Service type	Instrument sub-class	Examples
Administration (Information provision)	Information Provision	Public health campaigns, health advice website
	Data Publication	National statistics, census data, performance data
	Self-service Information	National archives, law databases, company information
Administration (Transactional)	Taxes and Duties	Personal tax, corporate tax, sales tax, import duty, fuel duty, alcohol duty

⁸ Developed by the OECD, the Classification of the Functions of Government (COFOG) classifies government expenditure data from the System of National Accounts by the purpose for which the funds are used.

	Registration, Permits and Standards	Passport/ID card, driving license, birth registration, trading permit, parking permit
	Entitlements, Grants, Subsidies, Loans	Unemployment benefit, pensions, housing/care allowance, research grants, student support
Human	Public Services	Utilities, mail, health, education, welfare, transport, emergency, waste, accommodation
	Public Goods	Roads, railways, airports, parks, broadcasting, museums, libraries, public housing, "platforms" for public use
Policy	Processes to choose policies and instruments	Consultation, deliberation, discussion, debate, petitioning, voting, e-participation

Source: consortium elaboration

The sub-categorisation based on instruments provides a sufficient level of distinction to highlight important differences between types of OGS while retaining a high-enough level to be manageable and easily related to the real world.

1.3 Value of OGS

In order to assess the value of Open Government Services from a quantitative and qualitative perspective, the study team has carried out a Cost-Benefit analysis and an analysis of non-monetized benefits of a set of OGS initiatives. In the following sections, the main outcomes are presented. A first point of departure is taken by briefly introducing the methodology behind the both type of analysis along with the rationale followed for selecting the case studies. The second part of the section focuses on presenting both the quantitative as well as qualitative results of the analysis especially in the form of costs, monetized/non-monetized benefits, projections of results at EU level. A final paragraph presents a summary of the main findings.

1.3.1 Methodology for the Analysis of OGS Value

In order to successfully carry out Cost-Benefit Analysis it is firstly necessary to provide a comprehensive and detailed framework allowing the categorisation of the costs and benefits assessed. As a starting point the actors operating in the field of innovative IT enabled government services can be described:

- **Government/PA:** including both national and local administration implementing Open eGovernment Services;
- **Citizens:** including private citizens participating in Open eGovernment Services;
- **Businesses:** including private entities operating in the Open eGovernment Services domain;
- **Researchers/NGOs:** including mostly not-for-profit entities.

Hence Open eGovernment Services call for a further transversal categorisation, as actors belonging to the above categories may assume different roles in relation to each specific OGS:

- **Government:** including both national and local administration implementing Open eGovernment Services;
- **Co-creator:** including different actors spanning from citizens to NGOs and private businesses, which actively collaborate in the development of Open eGovernment Services (e.g. banks and other private entities that collaborated for the development of the Slovenian interoperable data gathering system for e-social security);
- **End user:** including citizens and other public and private entities, which act as final users of the services created (e.g. citizens reporting street faults in the case of FixMyStreet).

The categorisation above is the one that has been used for the Cost-Benefit framework presented in this study. However, besides the actors involved it is also necessary to point out the different service types included, specifically: Open Data, Open Decisions, Open Services. The table below summarises the costs and monetized benefits that have been used for the quantitative section of the analysis (for a more detailed list of the cost and benefit indicators chosen please refer to annex 3.2).

Table 21 - Costs/Benefits Overview

COSTS
SET-UP/INVESTMENTS COSTS: referring to the initial set-up costs sustained for developing and implementing the solution.
OPERATIONAL COSTS: referring to the costs sustained for running the system.
MAINTENANCE COSTS: referring to the costs sustained for maintaining the systems as fully operative.
OTHER INVESTMENT COSTS: including additional investment costs for scaling, upgrading or improving the service.
BENEFITS
DIRECT CASH BENEFITS: referring to the direct benefits generated by the adoption of eGovernment
TIME SAVINGS: referring to the benefits generated by reduced time in work routines and processes as a result from the adoption of eGovernment services
INFORMATION BENEFITS: referring to the benefits generated by enhanced information sharing and data resulting from the adoption of eGovernment services
RISK BENEFIT: referring to the benefits generated by enhanced security of data
FUTURE COST AVOIDANCE: referring to the benefits generated by a reduced need for future government capacity expansion, future operating costs, lower cost for future projects

Source: consortium elaboration

In order to complete the assessment of the values of Open eGovernment Service non-monetized benefits have also been included in the study. Those benefits we refer to are non-quantifiable in monetary terms within the scope of our study, meaning that finding data on monetary benefits would fall beyond the scope of the project and/or would prove too cumbersome. In the table below we present the categories according to which we evaluate the non-monetized benefits stemming from the cases we studied.

Table 22 - Evaluation Framework of OGS Intangible Benefits

CATEGORY	BENEFIT	EXAMPLES
EFFECTIVENESS	Reduced administrative burden for the businesses/citizens	Reduced use time, reduced travel time, Reduced need for multiple submission of data for different services and events.
	Increase in the value that users receive from the service	Extra tools and functionality for users, personalized and integrated services, enhanced customer service, improved response time to events, higher reliability and consistency of services.
	Increase in inclusiveness of services	Easier access to services, higher availability of service types, greater convenience of users.
EFFICIENCY	Better organizational, management and IT architecture of the services	Services integration, higher communication between public agencies, improvement in business processes, more effective use of existing (e and non-e) infrastructure and reduced capacity waste.
	Increase empowerment of	Improve in skills and autonomy of public

	civil servants providing the service	servant, increase in public servants' decision-making power.
DEMOCRACY	Improve access to and reliability of information	Improved access to policy decisions.
	Enhance transparency and accountability of decision-making	Publication of own budgets by governmental agencies.
	Enhancement in civic participation to policy making	Use of online platforms for interaction and consultation.

Source: consortium elaboration

The Selected Cases, Baseline Definition and Collection of Evidence

In this section, it is highlighted the processes and choice taken to identify the 11 selected cases. The study team mapped out a long list of cases identified throughout the literature analysis and the screening of on-line material. Moreover, a consultation was launched within professionals' communities, as well as on social networks, to gather information about additional initiatives.

Overall, the long list summed up to a total of 183 cases, which were then shortlisted to 30 cases based on the level of maturity, data availability, country coverage and business case. After establishing a successful contact with the case owners the study team conducted an analysis of data availability, in order to define the final list of cases to be analysed.

Within this list of cases, the study team finally selected the 11 examples based on:

- **Availability of data and feasibility of the assessment.** The service should have been operational for several years, data should be available and stakeholders should be ready to share information. Data availability and collaboration of involved actors is crucial to reach the objective of evaluating cost and benefits.
- The **coverage of the taxonomy** areas as defined in the previous Interim Report. As discussed above, since it is not possible to cover each single item of the Taxonomy, the focus was maintained on specific strategic priorities:
 - **Coverage of different services** ensures that the widest range of impacts is considered. Based on the taxonomy developed by the project, we covered different **COFOG sectors**, which can be clustered "**administrative services**" (COFOG 1 to 5) and **human services** (COFOG 6 to 10);
 - Beside this "service" dimension, we also include **participatory policy cases**;
 - Moreover, the team assessed selected initiatives based on their business cases: the type of **involved collaborators** and the role they played accordingly to the **service cycle phase** (design, execution, monitoring and evaluation), are the two key aspects of the business case. Our aim is that of understanding and analyzing different ways in which an Open eGovernment Service may arise and be maintained. Moreover, the existence of a **legal framework** behind the adoption of the service has been also taken into consideration.
 - Open enabling factors (e.g. presence of open data) have been also included.

- **Largest possible coverage of European countries.** The geographical location of the OGS may affect its impacts. Moreover, there are countries that are more prone to the use of open web-based services, as they have better infrastructure or historical tradition of collaboration between public and private stakeholders. Analyzing similar services in different countries gives the opportunity to shed light on these specificities, and better understand the effects of an OGS.

The final list of selected cases, mapped against the taxonomy, is depicted in Table 23.

Table 23 - The Selected Cases Mapped Against the Taxonomy

Case	Service	Business Case		Legal Framework	Open enabling factors	Country
		Key Collaborators Involved	Cycle Phase			
FixMyStreet UK (Oxfordshire, Lewisham)	Human	NGO, Citizens, Governmental Bodies.	Execution Phase	No	Yes	UK
FixMyStreet Belgium (Brussels)	Human	Businesses, Citizens, Governmental Bodies.	Execution Phase	No	Yes	BE
Interoperable Data Gathering for e-Social Security	Administrative	Businesses, Governmental Bodies.	Execution Phase	Yes	No	SI
Tartu Participatory Budgeting	Policy	NGO, Citizens, Governmental Bodies.	Design Phase	Yes	No	EE
IoPartecipo	Policy	Citizens, Governmental Bodies.	Design Phase	Yes	No	IT
PatientOpinion	Human	NGO, Citizens, Governmental Bodies.	Evaluation Phase	Yes	Yes	UK
Di@vgeia	Administrative	Citizens, Governmental Bodies.	Evaluation Phase	Yes	Yes	GR
NemID	Administrative	Citizens, Businesses, Governmental Bodies.	Execution Phase	Yes	No	DK
Kublai	Human	Citizens, Governmental Bodies.	Evaluation Phase	No	No	IT
Parlement et Citoyen	Policy	Citizens and Governmental Bodies.	Design Phase	No	Yes	FR

Source: consortium elaboration

The extensive discussions on the cases of OGS that took place in preparation of the analysis of value allowed the study team to elaborate a further refinement of the OGS criteria, which is depicted in the table below. Interestingly the study team distinguished between two classes of openness (to the general public or within the public sector), different typologies of collaboration (co-design, operation, feedback, decision), and different use of technology (as an enabler or as a final product).

Table 24 - Sub-classification of OGS Criteria

Criterion	Code	Definition
Openness	O1	Open to the general public
	O2	Shared only within the public sector or restricted group
Collaboration	C1	Collaboration in designing an end product
	C2	Collaboration arising in live operation of the end product
	C3	Collaboration in feeding back on the operation of the end product
	C4	Collaboration influencing the decisions of others; no tangible product
Technology	T1	Technology enables the end application
	T2	The end product is a technical component

Source: consortium elaboration

Additionally, we can cross-tabulate the coverage of the cases against the sub-classification by policy instruments as defined in Section 1.2.2, and shown in Table 18.

Table 25 - Mapping of Cases to Sub-classification of Services by Instrument Type

OGS Service type	Instrument sub-class	Examples	Cases
Administration (Information provision)	Information Provision	Public health campaigns, health advice website	Kublai content
	Data Publication	National statistics, census data, performance data	Di@vgeia open data
	Self-service Information	National archives, law databases, company information	Di@vgeia records
Administration (Transactional)	Taxes and Duties	Personal tax, corporate tax, sales tax, import duty, fuel duty, alcohol duty	NemID
	Registration, Permits and Standards	Passport/ID card, driving license, birth registration, trading permit, parking permit	NemID
	Entitlements, Grants, Subsidies, Loans	Unemployment benefit, pensions, housing/care allowance, research grants, student support	Interoperable Data Gathering for e-Social Security
Human	Public Services	Utilities, mail, health, education, welfare, transport, emergency, waste, accommodation	Patient Opinion
	Public Goods	Roads, railways, airports, parks, broadcasting, museums, libraries, public housing, "platforms" for public use	FixMyStreet UK FixMyStreet Belgium Kublai platform
Policy	Processes to choose policies and instruments	Consultation, deliberation, discussion, debate, petitioning, voting, e-participation	IoPartecipo+ Parlement et Citoyen Tartu Participatory Budgeting

Source: consortium elaboration

Finally in Table 27 below is depicted the combination of the classifications presented in the tables presented before. It is at this point that patterns emerge of combinations of service type, instrument type and OGS criteria sub-classifications.

Table 26 - Sub-classification of OGS Criteria per service type

OGS sub-classes	
Administrative/Transactional:	O2 C1 T2
Human/Public Goods:	O1 C2 T1
Human/Public Services:	O1 C3 T1
Policy Process:	O1 C4 T1

Source: consortium elaboration

The class of Administrative/Information Provision instruments naturally embraces Open Data, but within the selected cases there is not a full coverage of the range of potential collaboration suggested in literature to be enabled by the provision of open data. Consequently, here we see the pattern O1 C3 T1, i.e. collaboration in the feedback on service provision, but expect that in practice other forms of collaboration exist.

With the other patterns identified however, literature and common sense suggest that they may be more definitive. With Administrative/Transactional processes we would expect data and systems to be very tightly controlled and secured, with technical components potentially being influenced by collaboration with the public at design stage but thereafter shared only within the public administration or limited and strongly-managed external partners like banks.

With Human/Public Goods, we are talking mainly about physical things built and managed with public resources, such as roads, parks, public buildings, statues, common spaces and so on, where there is clearly scope for the involvement of the public in their operation and maintenance either as active volunteers or looking out for problems (like reporting potholes through FixMyStreet). The cases are focussed on roads, but the principle extends to other public goods. We might also expect the possibility of collaboration in design and feedback in relation to Public Goods.

Note that the Tartu Participatory Budgeting case is classed as a Public Good instrument with C2 collaboration as the political choice had already been made to allocate the budget to building a public structure, and the citizen collaboration lay in the implementation of that decision. Had citizens been involved in deciding the size of the budget and how to spend it, then it would have been a Policy Process case and potentially O1 C4 T1.

Human/Public Services apparently, according to literature, present many opportunities for openness and collaboration, yet closer examination reveals a number of challenges. Note here that "public" means state-funded and politically accountable, governed by laws and rules about the spending of public money in a way where all citizens are treated the same through prescribed procedures regarding assessment of entitlement. Healthcare illustrates a key distinction if we consider and contrast public health provision (entitlements equally available to all) with private provision (based on ability to pay) or voluntary provision (typically focussed on a particular group, for example a cancer support charity). This implies that scope for collaboration in the operation of a public service *per se* is very limited, as this is not the same thing as having collaborative contributions in a mixed economy of providers in a particular sector such as healthcare provision. Government policymaking on what form that totality of provision takes might be open to C4 collaboration. Our Patient Opinion case is of C3, feedback and we conclude that C3 feedback is likely to be the most common

form of OGS in this class. We also conclude that the extensive terminological confusion around "public service" highlighted earlier in this report has led to speculation in literature about opportunities that are in fact not well-founded.

In the class of Policy Processes, we are in the territory of the various forms of citizen e-participation supporting the taking of a policy decision, covered elsewhere in this report.

The refined classification of the case studies depicted in Table 27 has been used for the definition of the future scenarios of adoption of Open eGovernment Services presented in 2.2.

Table 27 - Instrument-Based Analysis of Cases

Case	Service	Key Collaborators Involved	Main Instrument	OGS Sub-class	Notes
FixMyStreet UK (Oxfordshire, Lewisham)	Human	NGO, Citizens, Governmental Bodies.	Public Good (Infrastructure)	O1 C2 T1	This is an example of "many eyes", one of many possible methods of monitoring the status or condition of a physical public good. Others include sensors (e.g. IoT), surveys, inspections, etc.
FixMyStreet Belgium (Brussels)	Human	Businesses, Citizens, Governmental Bodies.	Public Good (Infrastructure)	O1 C2 T1	This is an example of "many eyes", one of many possible methods of monitoring the status or condition of a physical public good. Others include sensors (e.g. IoT), surveys, inspections, etc.
Interoperable Data Gathering for e-Social Security	Administrative	Businesses, Governmental Bodies.	Entitlement (Benefits)	O2 C1 T2	This is a set of code modules designed to reduce admin burden for social security data collection. Reusable within PA. [No public involvement]
Tartu Participatory Budgeting	Policy	NGO, Citizens, Governmental Bodies.	Public Good (Structure)	O1 C2 T1	Plebiscite process to allocate 1% of capital budget to community projects. One way of allocating a community project fund pot, which could also be for Grant instruments.
IoPartecipo+	Policy	Citizens, Governmental Bodies.	Policy process	O1 C4 T1	Online discussion of policy proposals from politicians, structured and facilitated, open with feedback, on platform available to other PAs. Extension of traditional engagement and consultation.
Patient Opinion	Human	NGO, Citizens, Governmental Bodies.	Public Service (Healthcare)	O1 C3 T1	This is an example of service user feedback on the operational functioning of a public service organization, applicable to other instances. It is one of a set of sensing methods including surveys, outcome measures, etc.
Di@vgeia	Administrative	Citizens, Governmental Bodies.	Self-service Information (Public records)	O1 C3 T1	Open data & open API obligatory & contemporary publication of legislation, decision and action records from public bodies. Electronic publishing of public records. Transparency goals; enables scrutiny, but is feedback acted on?
NemID	Administrative	Businesses, Governmental Bodies.	Various Transactional (Web component)	O2 C1 T2	Common secure login tokens (userid, password, single-use code) for accessing banking and public authority systems. [No public involvement.]
Kublai	Human	Citizens, Governmental Bodies.	Public Good (Virtual platform)	O1 C2 T1	State-provided platform for collaborative development of start-up funding proposals, with advisory staff participation. Alternative to entrepreneur clubs, business advisors etc. as public services.
Parlement et Citoyen	Policy	Citizens and Governmental Bodies.	Policy process	O1 C4 T1	Online discussion of policy proposals from politicians, structured and facilitated, open with feedback, on platform available to third parties. Extension of traditional engagement and consultation.

Source: consortium elaboration

1.3.2 Analysis of the Value of Selected Cases

The aim of this paragraph is to present the main findings from the analysis of the selected cases. A table has been inserted in relation to each case in order to summarise the main outcomes emerging from the quantitative analysis in terms of: monetised benefits, costs, net benefits, projections at EU28 level. In addition, non-monetised benefits have been also included in order to support the analysis with some qualitative findings. Every case has been clustered into the service typologies introduced in paragraph 1.3.

Concerning the methodology of the Cost-Benefit Analysis, we are comparing the costs and benefit of carrying out the Open eGovernment Service in its current form, with the costs and benefits of providing the same service in a standard way. In this respect we present the limitations of such an approach from a methodological standpoint when it comes to case-based generalisation:

- The comparison between traditional ways of delivering a service and OGS might be misleading because technology could provide the service to a much higher number of people with respect to traditional services, even without a real need. This is why in computing the potential savings of OGS we chose a number of individuals taken into account, which is generally reasonable.
- From a methodological standpoint, it is not possible to project the cost benefit analysis carried out for each case at European level for OGS services "as a whole", but only for each specific kind of service. Firstly, the range of services we consider does not cover the entire range of OGS services at European level. Secondly, we analysed singular cases, and not all the variety of cases related to each service typology.
- In our analysis we make a comparison between the current situation in which the OGS are used, and the past situation in which the services were provided in a "traditional" way. This would clearly be interesting, even though the comparison is often impossible as in some cases the system was too different, such as in "Interoperable Data Gathering for e-Social Security", or because this type of service was not even implemented, such as in "Parlement et Citoyen";
- In our analysis we consider only "first degree" effects, i.e. the immediate effects of the use of the service. We do not take into account second degree effects.
- As we will see a lot of benefits from OGS are non-monetized, or in any case non measurable from a monetary point of view. In this regards we will avoid arbitrarily assigning a monetary value to such benefits.

The cost-benefit analysis has been carried out on all the 10 cases selected. However, this section will present only the 8 cases out of the 10 shortlisted on which the projections were calculated. The cases for the extrapolation and projections have been chosen based on the level of maturity and the data availability. Clearly, there can be more innovative cases, that anyway exist for a short time and thereby do not have the data required for the analysis. Moreover, the chosen cases represent typical initiatives applicable to different contexts and countries.

Human services

Streets Maintenance - FixMyStreet:

The FixMyStreet service, launched and run by the NGO mySociety since 2007, has become an important tool for several local public administrations in order to enhance street maintenance. The service works by entering a postcode (or by enabling the website to locate the user automatically) along with the description of the problem

that need to be fixed. The issues reported by citizens are then emailed directly to the relevant Councils. Different types of problems can be reported via the service spanning from potholes or broken streetlights to dangerous pavements and street cleaning. The system can be defined as an Open eGovernment Service, more specifically:

- **The openness dimension** is characterised by the possibility for every citizen to access online reports and datasets according to the different areas where the service is operating;
- **The collaboration dimension** is defined by the possibility for citizens to report problems and street faults along with the possibility for the public administration to actively take action by addressing them;
- **The technology dimension** is characterised by the ICT infrastructure and more specifically the platform and app, which enable citizens to report problems and local authorities to display and eventually address them.

In order to provide a better and more detailed quantitative analysis it has been decided to focus on the implementation of the service in specific counties/cities areas instead of considering the country as a whole. The areas chosen are Oxfordshire County and the London Borough of Lewisham in the United Kingdom that represent two of the most successful cases of the adoption of the service. However, the extrapolation and projections have been calculated only on the data from Oxfordshire County considered as more suitable and representative. Due to the above-mentioned reasons Table 28 includes only the figures from Oxfordshire (for further details and data also on Lewisham please refer to Annex 3.2).

The overall costs sustained for the implementation of the service in Oxfordshire amount to approximately €210,000 including: start-up costs (2012), costs for running the system (2012-2015), costs for monitoring and evaluating the system (2012-2015), dissemination costs (2012-2015), additional investment costs (2016). Similarly, monetized benefit account for about €790,000 and include: reduction in staff costs for all transaction (12/15 estimated), reduced costs through reduced physical presence (16/17 estimated), lower costs for future projects (16/17 estimated). Based on the data mentioned above the overall net benefits amount to approximately €580,000. This savings have been multiplied for all the English districts, weighted by their dimension in terms of population, finding a saving for all England equal to almost €47,000,000. This amount has finally been projected at European level, taking into account the different size of countries in terms of population, leading to an amount at EU28 level equal to approximately €430,000,000 for the four years considered. The main caveats concerning these projections regards especially the assumption that the same level of take up in all the regions is considered. Obviously the take up will depend on the level of engagement of the population in public policy making. Moreover, it has been assumed the same level of quality of infrastructure. Moreover, our projection does not take into account the different level of prices and the different currencies in Europe.

Concerning non-monetized benefits the main one that have been found are related to all the three categories: effectiveness, efficiency and democracy.

Table 28 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
€794,941	€208,483	€580,758	€430,014,860
Non-Monetized Benefits	Democracy	<ul style="list-style-type: none"> Increased transparency of the local administration which can give feedback to each reporting individual about the completion of the job. 	
	Effectiveness	<ul style="list-style-type: none"> The service enables users to receive quick feedback responses from local authorities. The service enables every citizens via their smartphones or computers to report problems. 	
	Efficiency	<ul style="list-style-type: none"> Improvement in street maintenance and low capacity waste. 	

Source: consortium elaboration

Feedback Management - Patient Opinion

Patient Opinion is a not for profit organisation which was founded by Dr Paul Hodgkin in 2005 with central office in Sheffield, UK. The platform works by enabling patients to provide details about their experiences in hospitals and health care institutions in the area in which they live. The platform will then email the story to the relevant health services, which in turn can provide an answer directly via the Patient Opinion platform. Patient Opinion can be defined as an Open eGovernment Service, more specifically:

- **The openness dimension** is characterised by the possibility for patients and citizens to freely consult feedback and reports on each health institution;
- **The collaboration dimension** is defined by the reporting activities which enable patients to provide feedback to health institutions;
- **The technology dimension** is defined by the online platform which enables patients to be directly in contact with health institutions.

The area chosen for applying a cost-benefit analysis is Scotland, which represents one of the most publicly, recognized successful cases of the implementation of Patient Opinion inside the United Kingdom.

The overall costs sustained for the implementation of the service in Scotland amount to slightly more than €600,000 including: costs for running the system (2013-2015), additional investment costs (2013-2015). Monetized benefits account for €33,000,000 and refer to the overall amount of costs that the Scottish NHS would have spent to establish a feedback system with the same functionalities as Patient Opinion (2013-2015 estimated). Based on the data mentioned above the overall net benefits amount to approximately €32,000,000. For what concerns this class of services we implemented a projection of the benefits gained by the adoption of the system in Scotland by making the hypothesis that all the EU countries would adopt the same system. More in particular we multiplied the benefits by the number of countries weighted for the population as a proxy of the quantity of patients and complaints. Considering a net benefit for adopting the system equal to almost €32,000,000 in 3 years, the benefits at European level, with the adoption of the system by all the European countries in the same time-span, would amount to approximately € 3,000,000,000. The main caveats from the analysis concern the assumption that a number of complaints produced is proportional with respect to the population. In addition, the different level of prices and the different currencies in Europe have not been taken into account.

Concerning non-monetized benefits the main one that have been found are related to all the three categories: effectiveness, efficiency, democracy.

Table 29 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
€33,009,671	€602,253	€32,407,318	€3,109,519,176
Non-Monetized Benefits	Effectiveness	<ul style="list-style-type: none"> The service enables patients to receive direct answers from nurses or staff members therefore increasing the value of the service compared to traditional feedback systems The service empowers every patient to report, via a direct and fast channel, any kind of experiences he/she had therefore increasing the overall inclusiveness of the service. 	
	Efficiency	<ul style="list-style-type: none"> Thanks to the feedback provided by patients it is possible for health institutions to improve their service and internal processes. 	
	Democracy	<ul style="list-style-type: none"> The service enables every patient to freely access the feedback provided by other patients in relation to a specific health institution. The service increases the transparency of health institutions which are encouraged to answer to patients' feedback, with the answers directly uploaded on the Patient Opinion platform. 	

Source: consortium elaboration

Support to entrepreneurship - Kublai

Kublai is an open and collaborative environment consisting in a platform where creative individuals can present project ideas that can be discussed, refined, and developed into viable projects. The project has been initiated in 2008 by the Department of Development Policies of the Italian Ministry of Economic Development with the aim to help individuals that lack capability to gain access to funding both public and private, to turn ideas into real world social innovation projects with a concrete economic and employment impact at the local level. Despite limited monetary benefits, the project has provided a number of non-monetized services deemed very useful by users. The service can be considered an OGS for the following reasons:

- **The openness dimension** concerns the fact that all the information in the platform including comments, feedback and training material, is provided openly and for free.
- **The collaboration dimension** is defined by the peer-to-peer support provided by the users of the platform to other users presenting a project by the mean of comments.
- **The technology dimension** is represented by the central role played by the online platform of Kublai, which allows asynchronous communication. Another crucial role has been played by synchronous communication tools such as Second Life.

The overall costs sustained for the development of the service amount to approximately €1,500,000 including: start-up costs (2008), costs for running the system (2009-2014), communication and dissemination costs (2009-2014). Similarly, monetized benefits amounted to approximately €1,500,000, belonging to the category of cost avoidance. Considering that in Italy from 2008 to 2013 have been created an average of 276,538 new companies, and that on Kublai have been presented in the

same period an average of 96, the share of project treated with Kublai would amount to 34,7 every 10,000. This, considering the only Eurostat data available according to which in 2012 have been created 2,315,377 new companies in EU28, brings to a projected benefit at European level equal to approximately € 54,000,000. The caveats in relation to this case are the following: the cost-benefit analysis assumes a certain amount of time spent in providing a comment, equal for each comment provided, and the same amount of comments for all the projects registered. Moreover, projections do not take into account the different level of take up of peer-to-peer and of traditional services in the rest of Europe as well as the different effectiveness of peer to peer and traditional services in Italy and in all Europe. Finally, the different costs over time of peer-to-peer and traditional services in Italy and in all Europe have not been taken into consideration along with the different level of prices and currencies in Europe.

Concerning non-monetized benefits the main one that have been found are related to the categories: effectiveness and efficiency.

Table 30 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
€ 1,509,120	€1,441,514	€67,606	€54,340,467
Non-Monetized Benefits	Effectiveness	<ul style="list-style-type: none"> • Joining and participating to Kublai is very easy and does not involve a lot of bureaucracy. Moreover, prospective entrepreneurs do not have to spend a great deal of time and resources in filling applications for public funding as they are helped by the supporting staff. • Prospective entrepreneurs receive a high value service, especially from the feedback from the staff. In this regard non-monetized benefits include: <ul style="list-style-type: none"> ▪ Acquiring a culture of collaborating and sharing ▪ Improving the project idea ▪ Acquiring professional skills ▪ Opening partnerships with peers ▪ Acquiring visibility and capacity to attract funding ▪ Acquiring collaborations with PA • Kublai engaged prospective entrepreneurs that before were excluded from public support 	
	Efficiency	<ul style="list-style-type: none"> • Public servants involved in the project increase their IT and business skills, and are empowered by the fact that they see a concrete impact of their action. 	

Source: consortium elaboration

Administrative services

Electronic Social Security - Interoperable Data Gathering for e-Social Security:

The Slovenian government decided to implement the "Interoperable Data Gathering for e-Social Security" in 2010 following the "National Strategy on Electronic Services Development and Electronic Data Exchange" launched in 2009. The Slovenian government decided to implement the "Interoperable Data Gathering for e-Social Security" with the aim of reducing the efforts by applicants but also to simplify the decision process in relation to the allocation of different social security measures. The system is composed of 4 flexible and reusable building blocks and it has been

developed in cooperation with several public and private stakeholders. The system can be defined as an Open eGovernment Service, more specifically:

- **The openness dimension** is characterised by the possibility for different institutions within the public administration to use the building blocks. In the near future the use of the system might be also extended to private entities therefore enhancing even more its "open" features;
- **The collaboration dimension** is defined by the co-design activities which enabled different stakeholders to actively design the service and suggest valuable inputs for its implementation. Thanks to the co-design of the service it was possible for the public administration to successfully implement a service which fitted with the specific needs of the institutions using it;
- **The technology dimension** is characterised by the interoperable building blocks which enables to manage the different types of data enquiries.

The overall costs sustained for developing and implementing the service amount to approximately €3,500,000 including: start-up (2011), costs for running the system (2012-2015), dissemination costs (2012-2015), system maintenance costs (2012-2015), additional investment costs (2012-2015). Similarly, monetized benefits amount to slightly more than €65,000,000 and include: reduced data transaction costs (2012-2015), future cost avoidance (2012-2015). Based on the data mentioned above the overall net benefits amount to approximately €62,000,000. Projecting the net benefits by the number of European countries weighted for their dimension in terms of population, we achieve an overall benefit equal to approximately € 15,255,000,000. The main caveats concerning these projections regards the assumption that the same number of people covered is proportional to the population in all countries. For instance, the hypothesis in Slovenia is to examine 274,000 people: the ratio of people examined with respect to the population would be the same for all countries considered. Moreover, our projection does not take into account the different level of prices, the different relative prices, and the different currencies in Europe.

Concerning non-monetized benefits the main one that have been found are related to all the three categories: effectiveness, efficiency, democracy.

Table 31 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
€65,380,000	€3,488,490	€61,891,510	€15,254,829,543
Non-Monetized Benefits	Effectiveness	<ul style="list-style-type: none"> • Reduction of users time thanks to leaner and faster online processes. • Enhanced capability of central institutions to take decisions in the e-social security field in a more precise way avoiding mistakes and therefore increasing their reliability towards citizens. 	
	Efficiency	<ul style="list-style-type: none"> • The full automation of the process allow an enhanced communication and data flow between public institutions and between public and private institutions. 	
	Democracy	<ul style="list-style-type: none"> • Improved access to information made available by data sources. 	

Source: consortium elaboration

Publication of Acts - Di@vgeia

The Di@vgeia programme was launched in 2010 by the Ministry of Administrative Reform and e-Government with the aim of pushing all government institutions to upload their acts and decisions on the internet in order to make them fully available to the public. The system can be defined as an Open eGovernment Service, more specifically:

- **The openness dimension** characterised by readily available information on the portal that can be accessed by every citizen or institution;
- **The collaboration dimension** defined by the active participation of citizens envisaged by the platform which enables the civil society to monitor the publications of documents and acts along with the possibility to report potential maladministration issues;
- **The technology dimension** is characterised by the online platform of Di@vgeia along with its implementation Di@vgeia II which upgraded some of the functions of the previous functions along with implementing new ones.

The overall costs sustained for the development and implementation of the service amount to €1,700,000 including start-up costs (2013 for Di@vgeia II). Monetized benefits amount to a total of approximately €26,200,000 including savings generated thanks to a reduction of printed documents (2010-2015 estimated). Considering a net benefit amounting to approximately €24,500,000 for 5 years, the benefits at European level considering the adoption of the system by all the European countries in the same time-span would amount to slightly more than €1,000,000,000. The main caveats concerning this case are related to the assumption that a number of government documents produced is proportional to the population in all the EU countries. Moreover, our projection does not take into account the different level of prices and the different currencies in Europe.

Concerning non-monetized benefits the main one that have been found are related to the categories: effectiveness and democracy.

Table 32 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
€26,208,000	€1,700,000	€24,508,000	€1,147,641,639
Non-Monetized Benefits	Effectiveness	<ul style="list-style-type: none"> • Thanks to the materials uploaded online it is possible for everyone with an internet connection to get access to all the documents; therefore inclusion and empowerment as well as access to information are enhanced via the Di@vgeia service. 	
	Democracy	<ul style="list-style-type: none"> • By publishing official documents and acts online it is possible for every Greek citizen to constantly monitor the activity of policy makers and eventually report potential cases of maladministration to the relevant controlling bodies. • Policy making is also improved thanks to a better scrutiny of the public of the decisions made. 	

Source: consortium elaboration

Electronic Signature - NemID

The NemID login service, which has been developed and implemented in Denmark since 2003 aims to simplify bureaucratic processes and administrative procedures for citizens and civil society. The system enables Danish citizens to access a wide range of public administration services and online banking and tax services by entering an individual user name, password and code. The system can be defined as an Open eGovernment Service, more specifically:

- **The openness dimension** of the system is defined by the possibility for end-users to access different public administration services along with online banking via the unified log-in system;
- **The collaboration dimension** of the system is defined by the different types of collaboration which took place especially in the form of user test and citizen participation in the different phases. Moreover, collaboration with private companies can be also included since a private supplier in cooperation with both the financial and the public sector has developed the system;
- **The technology dimension** of the system is defined by the ICT platform that has been developed in order to enable Danish citizens to access online services of the public administrations and banks.

The overall costs sustained for the development and implementation of the service amount to approximately €55,000,000 including: start-up costs (2007), overall operational costs (2012-2015), additional investment costs (2012-2015). Similarly, monetized benefit amount to approximately €540,000,000 and refer to reduced data transactions costs thanks to a reduction in the use of postage and paper (2012-2015). The net benefits for the Danish central administration amounted to approximately €490,000,000, i.e. €122,000,000 per year. Considering the adoption of the system at European level, the total benefits weighted for the dimension of countries in terms of population amount to approximately €44,000,000,000 in the four years considered. In this case the caveats are related to the assumption of the same level of take up of the system in all the European countries; the different level of prices and the different currencies in Europe have not been taken into account.

Concerning non-monetized benefits the main one that have been found are related to the categories: effectiveness and efficiency.

Table 33 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
€537,455,976	€54,940,000	€482,515,976	€43,751,025,062
Non-Monetized Benefits	Effectiveness	<ul style="list-style-type: none"> • Reduction of users travel time thanks to leaner and faster online processes. • The system enhances communication between citizens and the public administration and enhanced services integration. 	
	Efficiency	<ul style="list-style-type: none"> • Thanks to the unified login system users can access different online services with the same credentials. 	

Source: consortium elaboration

Participatory services/policymaking

Participatory Budgeting - City of Tartu

Tartu, the second largest city of Estonia, is the first city in Estonia that opened up its budget-designing process in 2013. Citizens of Tartu can decide how 1% of the annual investment budget is spent. The service can be defined as an Open eGovernment Service, more specifically:

- **The openness dimension** is one of the main features of Tartu Participatory Budgeting. Although in narrow terms it is about the selection of public-investment objects, the objectives of the service are much wider and aim at open decisions more generally: to increase awareness of the reasons and logic behind public budgeting so that decision-making within the city government will be understood better and trust for these decisions will increase;
- **The collaboration dimension** is defined by the involvement of citizens in the design on the service, especially taking in account their experience as users of the public service. Based on the feedback of the users, the system has been developed further. An NGO has been involved in the design, implementation, monitoring and evaluation. The main motivation for collaboration with the external NGO has been related to the expert knowledge in the fields e-democracy and e-governance in specific organisations to increase credibility and legitimacy of the process;
- **The technology dimension** is characterised by the possibility to cast votes using Estonian ID cards and the digital-signature infrastructure.

The overall costs sustained for the implementation of the service amount to approximately €80,000 and include: start-up costs (2013), costs for running the system (2014-2015), dissemination costs (2014-2015), system maintenance costs (2014-2015), additional investment costs (2014-2015). Since Tartu Participatory Budgeting is aimed at improvements in democracy, transparency and community development, monetized benefits have not been in the main focus, and thus such benefits have not been monitored. Based on the data mentioned above the overall net benefits amount to approximately - €80,000. For this case of participatory budgeting we implemented a projection of the costs sustained in the city of Tartu by hypothesizing the adoption of the same project by cities of similar size at European level, considering thereby the number of cities with a population between 50,000 and 150,000. The computation for cities of analogue dimension decreases the bias in terms of structural differences. Taking into account all these considerations we see that the total costs for implementing and running the system so far amount to almost €80,000, while there are no monetary benefits envisaged. Taking into account the number of cities of similar size in Europe (891 according to Eurostat data), the expenditure in adopting the systems would be approximately €70,500,000. Concerning this specific case the main caveats regards especially the limited size of participatory budgeting out of the budget for all the cities considered, i.e. €140,000, about 1% of the annual investment budget in Tartu. Moreover, our projection assumes that participatory budgeting is used on the same proportion of the budget in all cities considered. Additionally, it does not take into account the effect of participation on the quality or efficiency of decisions and the take up is considered as equal to the same proportion of the average size of cities in the range considered. Finally, even though the cities considered are of similar size, structural differences due to the administrative systems may still occur. Different level of prices, the different relative prices, and the different currencies in Europe have been not taken into consideration.

Concerning non-monetized benefits the main one that have been found are related to the categories: efficiency, democracy.

Table 34 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
N.a	€79,233	-€79,233	-€70,596,603
Non-Monetized Benefits	Efficiency	<ul style="list-style-type: none"> This kind of services empowers civil servant as it increases the legitimacy of their actions. Moreover civil servants, by managing the service, are able to increase their engagement skills. 	
	Democracy	<ul style="list-style-type: none"> More information about the logic of public budgeting and the of the limited public resource available. Decision-making processes within the city government are better understood, and trust increased. Citizens are empowered as they are able to take part to the decision-making process. 	

Source: consortium elaboration

Participatory Decision-making - PetC

Parlement et Citoyens (PetC) is a platform where Members of the Assemblée Nationale (the French Parliament) publish their proposal for feedback and enrichment by the people before they are discussed in Parliament. It has achieved high rates of participation with thousands of citizens involved. It has been reused for dedicated consultation, such as the government consultation on the Digital Strategy (Republique Numerique) with equally impressive results. It has also managed to reach out beyond the "usual suspects", with half of participants reporting "some" or "no" interest in politics. The service has been launched by individual citizens, organised in a news NGO, without public funding and independently from government, in partnership with existing NGOs and MPs. The service represents an OGS for the following reasons:

- **The openness dimension** characterised by the fact that law proposals are readily available on the portal and can be accessed by every citizen or institution;
- **The collaboration dimension** defined by the active participation of citizens envisaged by the platform which enables them to revise and provide input in law proposals;
- **The technology dimension** is represented by the central role played by the online platform of PetC.

The overall costs sustained for the implementation of the service amount to €500,000 and refer to set-up costs (2011-2015). There are no monetized benefits as such. Interviewed MPs report that the crowdsourcing does not substitute existing lobbying, so that the work is additional to the traditional policy discussions and lobbying. Based on the data mentioned above the overall net benefits amount to approximately -€500,000. The projection for this type of service amount to more than -€3,000,000. In this case the caveats regard the use of system as a complement of lobbying and live meetings, and not as a substitute. In addition our projection does not take into account the effect of participation on the quality or efficiency of decisions, it considers the same level of take up in all the countries considered. Finally, it does not take into account the different level of prices, the different relative prices, and the different currencies in Europe.

Concerning non-monetized benefits the main one that have been found are related to all the three categories: effectiveness, efficiency, democracy.

Table 35 - Overview of Benefits/Costs, Projection

Monetized Benefits	Costs	Net Benefits	Projection at EU28
N.a	€500,000	-€500,000	-€3,827,822
Non-Monetized Benefits	Effectiveness	<ul style="list-style-type: none"> The service empowers every citizen to provide input to the decision-making process. 	
	Efficiency	<ul style="list-style-type: none"> This kind of services empowers civil servant as it increases the legitimacy of their actions. Moreover civil servants, by managing the service, are able to increase their engagement skills. 	
	Democracy	<ul style="list-style-type: none"> Clearly the decision-making process is under a deeper scrutiny and it is more transparent. A lot of citizens that before did not take part in politics because discouraged or not interested, and some citizens that before did not even vote, thanks to PetC are able to take part to policy making. 	

Source: consortium elaboration

1.3.3 Main findings from the analysis

The previous analysis showed clearly which are the monetary and non-monetary advantages of OGS; but also the limitations of such an approach from a methodological standpoint when it comes to case-based generalisation. However, the information collected can still be used for identifying similarities and patterns across the three categories introduced in paragraph 1.3. The table below presents an overview of the different cases examined in the previous paragraphs.

Table 36 - Value of Open eGovernment Services

Area	Service	TECHNOLOGY COSTS	MONETIZED BENEFITS	NON-MONETIZED BENEFITS	SCALABILITY	REPLICABILITY	CONCLUSION
HUMAN SERVICES	Support to entrepreneurship	Moderate	Fairly positive	Very positive	Medium	High	Promising
	Streets Maintenance						
	Feedback Management						
ADMINISTRATIVE SERVICES	Publication of Acts	High	Very positive	Fairly positive	High	Medium	Mature
	Electronic Signature						
	Electronic Social Security						
PARTICIPATORY POLICY SERVICES	Participatory budgeting	Moderate	Negative	Very positive	Medium	Medium	Potential not fully expressed
	Participatory Decision-making						

Source: consortium elaboration

Concerning human services, the costs of the OGS from a technological standpoint, are typically moderate as the service can be built incrementally by one developer using open source modules. The monetized benefits are fairly positive, as the input provided by users is considered concretely useful (the feedback over the service, the suggestion about improving the business plan). However, the benefits are limited since these type of services do not replace existing public services but simply help improving them. Non-monetized benefits are very important, in terms of capacity to reach out to citizens, increase their satisfaction and trust. Scalability for this type of services is low due to their limited application. It's hard to imagine high levels of collaboration between citizens such as those shown by Kublai or Patient Opinion when dealing with more trivial issues. On the contrary, replicability is quite high (both FixMyStreet and Patient Opinion have already been replicated elsewhere).

In regards to administrative services, technology costs are high, especially in the short term, because they involve a reorganisation across all government. Monetary benefits are also high, mainly in terms of costs savings. The non-monetized benefits are more limited, and generally refer to greater transparency and trust in government. Finally, the scalability is very high, as these services do not require extensive citizens input, in most cases are fully automated, and therefore can be more easily scaled. These type of services carry also a good replication potential, however the lack of a political and legal framework might affect their adoption.

Participatory decision-making services account for typically moderate technological costs, as the tools do not require an overhaul of the existing core government technology. The monetized benefits appear very limited though, as the input received by citizens is seldom original and highly innovative: citizens input appear far more useful and high quality when it refers to concrete needs and issues, as in the human services cases. On the other hand especially relevant are non-monetized benefits in relation to building trust in government decisions. Finally, both scalability and replicability are limited, as citizens' attention cannot be devoted to follow all government decisions, but only the most important ones, typically very few. As it was the case for Administrative Services, the presence of a solid political and legal framework plays a central role for the replication of these type of services. Increasing the scope of application of the services and stimulating high quality input will in the future increase the impact of this class of services.

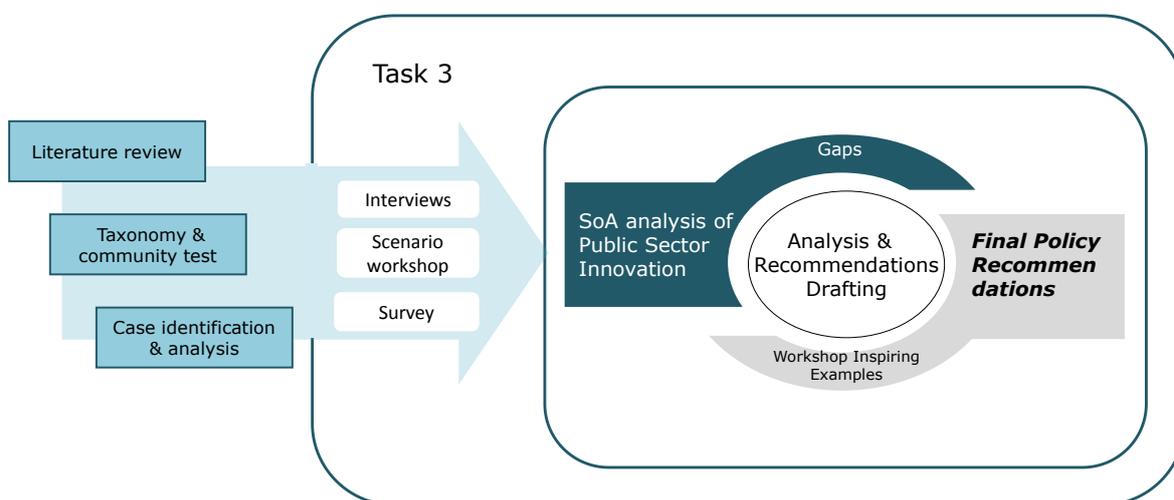
2 Part II: Public Sector as an Agent of Innovation through ICT in OGS context

2.1 Drivers and Barriers for OGS Innovation

The current chapter starts with the main findings from the existing literature, underpinning the major researches that have been conducted on PSIN in the context of OGS. The report goes from the general to the more specific, starting with public sector innovation in general, moving on to literature specifically covering the drivers, barriers and policy instruments for open data-driven and open collaboration based PSIN. Complementing the literature review, we then introduce empirical findings on drivers, barriers and policy instruments for OGS innovation, both from web survey as well as from interviews.

The final scope of part II and output of the project lays down into the elaboration of final policy recommendation. The graphic below indicates the methodological steps that led towards the analysis and the drafting of the recommendations. The literature review activity, the taxonomy and the case identification led towards the identification of drivers and barriers for Public Sector Innovation for Open eGovernment Services. This list of drivers and barriers previously identified have been discussed and enriched from a content point of view thanks to the results of the interviews, web survey activities as well as stakeholders point of view gathered during the scenario workshop. The state of the art of Public Sector innovations as well as the gaps identified through the scenario exercise of the scenario workshop fed into the drafting of the final policy recommendations.

Table 37 - Inputs for the final policy recommendations



2.1.1 Drivers, Barriers & Policy Instruments for OGS PSIN: Key Hypothesis

As a first step a systematic review of the scientific and policy analysis literature on drivers and barriers for OGS innovation and policy instruments was carried out. A systematic review includes a comprehensive, exhaustive search for evidence, where items are selected using clear and reproducible eligibility criteria, critical appraisal of

items for quality, and synthesis of results according to a pre-determined and explicit method.

Using relevant keywords (such as public sector innovation, innovation drivers and barriers, open collaboration innovation, service co-production, open data, public sector innovation lab, tournament based collaboration) high number of publications were found, mostly from 1995-2016. They were further narrowed down considering the focus of the OGS project and the direct relevance to it. Altogether 91 academic and policy reports were found relevant.

In addition, in March 2016 an extensive literature review, closely related to the topic, was released. It is a systematic and detailed analysis of public sector innovation literature by De Vries, Bekkers and Tummers (2016). They screened around 10,000 studies and carried out in-depth analysis of 181 studies.

One of the first conclusions is that research on **public sector innovation**, concerned with "the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes efficiency, effectiveness or quality" (Albury 2005) has increased considerably. From 2000s, the literature has rapidly grown on public sector innovation and on related changes in governance (see, e.g., Hartley 2005, Verhoest et al. 2006, Moore and Hartley 2008, Pollitt and Bouckaert, 2011).

De Vries, Bekkers and Tummers (2016) adopts the umbrella concept of "antecedents" to denote influential factors in public sector innovation at different levels. According to their definition, an antecedent can act either as a driver or barrier to innovation depending on the context and level of analysis. A similar idea has also been expressed by several other authors, e.g. Bekkers et al. (2013) and Nasi et al. (2015), who argue that it is often the specific context that determines whether a factors acts as a driver or barrier to innovation. De Vries et al. (2016) divide the antecedents into four main categories: 1) environmental level (the context external to public sector organizations); 2) organizational level (the structural and cultural features of an organization); 3) innovation level (intrinsic attributes of an innovation); and 4) individual level (characteristics of individuals who innovate).

In a similar vein, the main barriers highlighted in the European Commission's report "Powering European Public Sector Innovation" (2013), which is perhaps the most influential policy document on public sector innovation, can be categorised into environmental, organisational and individual-level factors, including:

- **Weak enabling factors or unfavourable framework conditions:** scattered competences, ineffective governance mechanisms, diverse legal and administrative cultures, resource constraints to develop and deploy staff and to finance rollout, and inadequate coordination within and across organisations to share, spread and scale up successful initiatives.
- **Lack of leadership at all levels:** preference for caution and failure-avoidance to creativity (finding new paths to success), rigid rules and risk-averse managers who discourage staff and stifle the diffusion of innovative ideas.
- **Limited knowledge and application of innovation processes and methods:** an often absent access to capabilities (systems, skills, tools and methods), lack of collaboration (with other parts and levels of government, businesses, citizens and third sector organisations).
- **Insufficiently precise and systematic use of measurement and data:** inadequate information on sources of new and improved products, processes and services; lack of monitoring of the benefits for policy outcomes.

More recently, Waller and Weerakkody (2016) point out that public administration (in the EU at least) is subject to the Rule of Law so that politicians and administrative bodies must act to carry out their functions and processes (i.e. administer their policies) as set out in legislation. This limits the ability of the employees to innovate, and especially where administrative processes like the collection of taxes or distribution of public money is concerned, rules out a great deal of innovation, openness and collaboration with the public. Indeed it is a fundamental principle of the EU that governmental processes will be carried out consistently, predictably and without bias, in accordance with the law. This is a pre-requisite to economic growth and the elimination of corruption, favouritism and fraud, regrettably these last being the outcome of much "public sector innovation" in areas where the Rule of Law is not sacrosanct and enforced. This observation points to the greatest opportunity for PSIN lying at the **pre-legislative, i.e. policy design**, stage of policymaking. Nevertheless, in **human services** in particular, there may be scope within the law for local discretion and variety in operational processes to emerge, provided there is proper political authority and accountability in place.

Numerous other studies also conclude that innovation within the public sector is driven and constrained by multiple factors that can be related to the individuals involved in innovation as well as organisational and broader environmental context. However, most of the public sector innovation research is focused on goals like increasing effectiveness and efficiency, while only very small number of studies is focusing explicitly on OGS-related goals like involving citizens and private partners (De Vries et al. 2016, 9).

Looking at the drivers and barriers to **ICT-based open collaboration innovations**, the following key conclusions can be made.

First, democracy has continuously evolved and even undergone drastic changes – from face-to-face, via territorial to transnational societies⁹. Most recently, the Internet fosters this transformation as it challenges the concept of state sovereignty and need for representation. Arguably, e-democracy as a transnational, location independent way for citizens to interact with their state and be able to communicate and deliberate in the way of a strong democracy, can be considered the concept for a third transformation following Dahl (1989).

The opportunities of technology-driven collaboration have so far scarcely been seized. Existing evidence points to the lack of transformational impact of ICTs on public sector organizations and processes (Hindman 2009, Norris 2010). Especially, online collaboration and participation initiatives seem to have a hard time delivering the expected outcomes (Sæbø et al. 2011, Bannister and Connolly 2012, Prosser 2012), mobilizing a sufficient number of active users (Edelmann et al. 2012, Epstein et al. 2014) and engaging the disengaged segments of society (Karlsson 2012, Lidén 2013). In fact, many of these challenges seem to be characteristic to public sector ICT projects more generally (see, e.g., Heeks 2003, Dwivedi et al. 2013). It is thus no wonder that the technological determinism of early proponents of e-government has become widely criticized as idealistic and erroneous (Norris 2010, Rochet et al. 2012), and is now increasingly being replaced by calls for a more sophisticated understanding of the various factors that affect the use and outcomes of ICT-based open collaboration innovations (Dwivedi et al. 2013).

⁹ This section is based on Toots, M., Kalvet, T., Krimmer, R. (Forthcoming in 2016). Success in eVoting – Success in eDemocracy? The Estonian Paradox. In: EPART 2016. Springer; Toots, M. 2016. ICT-driven Co-creation in the Public Sector: Drivers, Barriers and Success Strategies. Manuscript.

Recent studies explicitly point to the need to distinguish between different types of e-government public sector innovations as different barriers and drivers apply. For example, Chadwick (2011) stresses the difference in the factors that matter in the success and failure of e-government public sector innovations in general and those that become important in the case of ICT-based open collaboration innovations. While the focus of e-government literature has traditionally been more on online service provision and internal processes (Freeman and Quirke 2013), the democratic functions of e-government are receiving increasing attention from both practitioner and research communities, illustrated by the growth of online participation initiatives and the emerging research fields of e-democracy and e-participation (Medaglia 2012). Specifically, it has been strongly recommended to further examine the relationships between the dependent and independent variables, study the contingencies affecting causal relationships in particular contexts (Dwivedi et al. 2013) and conduct more interdisciplinary studies of the diverse contextual factors that affect the outcomes of e-government innovations (Medaglia 2012).

The success and failure of ICT-based open collaboration innovations has been associated with a variety of factors similar to those outline above for public sector innovation. A key success/failure factor seems to be their level of **integration into organizational procedures and political processes** (OECD 2003, Council of Europe 2009, Freeman and Quirke 2013). Open collaboration innovations should have a **clear mandate** (Council of Europe 2009) and **involve decision-makers from the outset** (Scherer et al. 2010). Integration can be seen as a key prerequisite for impact, which to date seems to be limited at best (OECD 2003, Scherer et al. 2010). So, political will/support and leadership (Council of Europe 2009, Heeks 2005) and commitment by the government (Panopoulou et al. 2010) are important drivers.

Another set of factors can be associated with **organizational culture**, attitudes and **political support**. In addition to organizational culture, **broader cultural preconditions** for such initiatives to be successful include a developed civil society, social trust and an open political culture (Council of Europe 2009, Freeman and Quirke 2013). Other broader environmental preconditions include access to technology, and trust in democratic institutions, processes and other citizens (Council of Europe 2009).

The failure of many related initiatives has been attributed to **overlooking the demand side and citizen's perspective** (Hsiao et al. 2012). Empirical evidence of e-participation tools suggests that their take-up has thus far been globally low (Edelmann et al. 2012). Neither have e-participation initiatives brought more people in decision-making, engaging just a narrow "elite" of politically active citizens (Karlsson 2012, Hindman 2009, Lidén 2013). Variables explaining participation include prior interest in politics, internet skills, younger age and high level of education (Lidén 2013), which is very similar to participation patterns in offline contexts (Navarro and Font 2013).

Also, the challenge of attracting users implies the need to reckon with their needs and capabilities by **engaging users in designing open collaborative tools** (Council of Europe 2009, Talpin 2013). Effective participation in the democratic debate presumes particular requirements to system design, such as information accessibility and competent moderation (OECD 2003, Venkatesh et al. 2003). At the same time, existing institutional settings and governmental organisation with possibly slow pace of institutional development can act as a barrier for institutions of governance to act on the informational outcomes of e-participation projects (Dwivedi et al. 2015). Also, the overall application of "Web 2.0 paradigm" (interaction, collaboration, user-generated content, participatory models) in a country is important as generates favourable context for the application of public sector open collaboration tools (Lidén 2013, Wigand 2010).

Also, the acceptance of any ICT-based collaborative tools tends to be determined by their perceived usefulness and ease of use, the two central concepts in technology acceptance theories. It is assumed that user acceptance is higher for systems that require **less effort**, while demonstrating **clear benefits** for the user. User acceptance is affected by the degree of consideration of stakeholders' expectations and needs in system design, user-friendliness of the tool, accessibility of relevant information, information about the use of citizens' input and feedback to participants (Council of Europe 2009, Medaglia 2012, OECD 2003).

In sum, most of the barriers to collaborative e-government innovations are similar to any kind of ICT-led innovations in public sector. However, some barriers can be considered more specific to open collaboration. Based on theoretical and empirical literature, open collaboration innovations are challenged by various barriers. These include often a lack of administrative and political championing, poor integration into organizational procedures and broader political processes, lack of easily demonstrable impact, unfavourable cultural context, hostile attitudes to citizen engagement, and the difficulty of matching different expectations and capabilities in designing systems intended to engage diverse user groups.

Regarding the drivers and barriers **to open data driven Public Sector Innovation** the following can be noted.

Even though open data is a relatively new direction in e-government studies due to the infancy of the concept, the phenomenon itself is widely regarded in the academic community potentially as one of the most promising aspects of the ICT-driven public sector reforms. It is presumed to be an effective tool to promote transparency, effectiveness and efficiency in government in a more cost-effective manner mostly due to citizen-sourcing or crowd-sourcing and increased civic engagement. Koski (2015) argues that the impacts of opening up government data can be divided to economic impacts and to other social impacts. Economic impacts can be assessed at the level of firms, citizens and households, public sector and the economy as a whole, and the most notable potential economic impacts for firms are growth and increased productivity via the efficiency improvements and via the development of new products and services enabled by open data. For citizens, the most important economic benefits of open data are likely to arise from free access to data instead of using chargeable data resources and from the time savings. For public sector organizations, opening up data resources offers cost savings and an opportunity to improve efficiency of service provision. Other potential social impacts of opening up government data concern, for instance, the transparency of government and decision making, education, health, citizens engagement, environmental impacts, sustainability and transportation.

Academic research in the area, aimed especially at understanding driving forces in the diffusion of open data both at the international, national and local levels and locating associated challenges, risks or barriers in the public administration, economic and even political contexts, is quite intensive and encompasses many dimensions.

There are studies, for example, on the drawbacks of an arguably over simplistic view among many practitioners and scientists on the benefits and limitations of open data (Janssen et al. 2012). Various risks are identified and are related to the political, economic, institutional, legal and technological aspects, confirming the need to take an interdisciplinary look and addressing various levels and aspects. The research methods and approaches that the researchers apply in their studies embrace a wide range of possible tools and instruments, including interdisciplinary research frameworks and using both quantitative and qualitative approaches in their investigations such as statistical, content and structural analysis, observations and survey analysis, interviews, case studies and comparative analysis.

One of the key issues identified is opposition from government agents themselves to publish data, the unpredictable nature of government support in the sphere, and lack of political communication between providers and re-users of open data (Martin et al. 2013, Barry and Bannister 2013). This is reinforced further by **lack of knowledge** on open data and open data based governance (for limited understanding of concept by policymakers see Janssen, 2011) and by the fact that in many cases shift to open data challenges **existing organizational procedures and routines**, while carrying risks (of failure). **Misinterpretation** of open data and open government concept among many public administration practitioners has been identified as clear barrier (Yu and Robinson 2012), including overly simplistic view on open data as a tool (Conradie and Choenni 2012) to promote transparency of government among many practitioners and academics (Janssen et al. 2012).

Low priority given to open data based PSIN by politicians can lead to **legislative barriers**. This is related both to the lack or ambiguity of regulatory basis of the open data-driven projects, challenging the flow of datasets from government agencies to other actors and in inconsistency of the policies and activities in the sphere (Ganapati and Reddick 2012). Even if legislative barriers do not exist, civil servants might expect further guidance in the form of strategies. Thus, one of the fundamental barriers identified relating to open data based PSIN is a **lack of strategies** on how to foster the re-use of open data by third parties, i.e. businesses and citizens as end-users (Veenstra and Broek 2013).

Also, information security and data protection issues are raised, especially in finding the balance between public and private information (Huijboom and Broek 2011), confidence in open data (O'Hara 2012) and possible abuse of open data.

Increasingly, **barriers from user perspective** are emphasized by various researchers. These include lack of user perspective vision in the government open data policies and barriers associated with the use of data by the end-users, i.e. citizens and businesses such as the access to data and information justice (Johnson 2014), usability, misinformation, unfriendly interfaces, etc. (Zuiderwijk et al 2012).

Several drivers for open data-driven PSIN have been also identified in literature.

One of the most important drivers of the open data as a tool of public sector innovation is **demand by civil society and business community**. This is motivated by possible benefits in public sector reforms such, for example, as the growth of collaboration and participation of the members of civil society in the public sector, which might result in emergence of innovative channels of communication outside of the traditional bureaucratic realms of the public administration system (Davies 2010).

Another key driver often emphasised in the open data movement is an argument that open data could presumably promote **transparency** in government due to the publication of government related activities in the public domain without any copyright restrictions for scrutiny and re-use (Janssen et al. 2012). Relatedly, **economic efficiency** of open data-driven projects is also important; it can lead potentially to cost-effectiveness of public administration processes due to increased participation from non-governmental sector, businesses and citizens (Shadbolt et al. 2012).

Finally, open data could promote **innovations overall**. One of the promising aspects of open data as a political concept is an emergence of new platforms to boost innovative ideas on how to improve governance at all levels of public administration due to increased public knowledge and, more importantly, rise of collaboration between government and citizens and among citizens themselves in the sphere (Huijboom and Broek 2011).

In conclusion regarding the drivers and barriers, some barriers and drivers are more strongly present in the literature as compared to others in the case of PSIN. The categorisation of the drivers and barriers along the lines of De Vries, Bekkers and Tummers (2016) and European Commission (2013) is fruitful. Due to the aim of the project the further focus will be mostly put on environmental level (the context external to public sector organizations) and on organizational level (the structural and cultural features of an organization) as both the literature on open collaboration innovations and on open data-driven public sector innovation emphasize mostly the external context and organisational level issues. We will consider individual level issues (characteristics of individuals who innovate) still, without detailed explicit and systemic focus on it. As we aim for relatively short and general survey and interviews on OGS, we will neither differentiate between open collaboration innovations and open data-driven public sector innovation in the survey design, while making the distinction in the analysis, still, as drivers, barriers and suitable policy instruments will be possibly different.

The literature review along the previous lines suggests to focus on the following **organisation-level barriers** that could act as significant barriers to open government innovation in public sector organizations:

- Lack of knowledge of open government
- Lack of access to relevant technologies
- Lack of technological skills and competences
- Lack of incentives to innovate
- Lack of human resources
- Lack of funding
- Existing organizational procedures and routines
- Organizational culture
- Low priority given to open government innovation by top managers
- Low priority given to open government innovation by civil servants
- Risk of failure.

Of the **broader environmental barriers** that could act as significant barriers to open government innovation the following seem to be dominant:

- Unfavourable legislative and regulatory framework
- Lack of appropriate policies
- Strategies and standards
- Existing institutions
- Existing administrative and political culture
- Lack of political support/leadership
- Ineffective innovation governance
- Lack of cooperation and coordination within the public sector
- Lack of collaboration between the public and private/non-governmental sector.

And, the following could be considered as **drivers** for PSIN:

- Leadership of top administrative managers
- Leadership of top political managers
- Competitive pressure from other public sector organizations
- Demand for open government innovations by citizens/private and non-governmental organizations

- Scarcity of resources
- Availability of excess (slack) resources
- Wish to increase the efficiency of public sector operations/public services
- Wish to increase the effectiveness of public sector operations/public services
- Wish to increase the transparency of public sector operations/public services
- Wish to keep up with technological development, Socio-economic problems (e.g. unemployment)
- Global 'grand challenges' (e.g. environmental problems, sustainable development, etc.)
- Wish to generate public value, Wish to improve the organization's reputation, Wish to follow the success of others and International benchmarks/scoreboards.

Public e-services could be developed by public organisations internally although typically public e-services development has taken place via **public procurement**, the act of acquiring, buying goods, services or works from an external source, often via a tendering or bid process. Such activities are generally geared towards efficiency in public money spending as a first priority. This understanding is also reflected in the World Trade Organization's (WTO) agreement on public procurement.

However, there is a growing awareness among policy-makers around the world that public procurement has a potential in driving and spurring innovation, referred to as **public procurement of innovation** (PPI) (see, e.g., European Commission 2008, 2009, 2011; OECD 2011, Izsak and Edler 2011). Forming a large part of government spending, public procurement has been rediscovered as a way to complement more common innovation policy-making instruments such a provision of R&D grants, support for training and mobility, and equity support (see, e.g., Edquist et al. 2000, Lember et al. 2014, Uyarra et al. 2014).

In the following we follow a broad definition of public procurement *of* innovation, that ascribes public procurement a broad role in inducing innovation and stresses that innovation is not limited only to new products, but it is also about new capabilities (organizational and technological) as well as about innovation diffusion and gradual upgrading that the government purchasing decisions can stimulate. Rolfstam has defined this broader perspective as "purchasing activities carried out by public agencies that lead to innovation" (2012, 5). The more focused notion of public procurement *for* innovation (or public technology procurement), which "occurs when a public organization places an order for the fulfilment of certain functions within a reasonable period of time (through a new product)" (Edquist and Zabala-Iturriagagoitia 2012, 1758) can be considered to be a special case of the broader definition. (see also Edler and Georghiou 2007, Hommen and Rolfstam 2009)

However, various **barriers influence public procurement of innovation**. First, there is a **strong legacy of ideas that shape PPI policy-making**. (Neo-liberal) ideas have become embodied in international and bilateral treaties redefining and severely restricting policy space available to governments to implement PPI (Wade 2003, Gallagher 2005), further reinforced by recent contractionary fiscal policies. Second, the public administration reform trajectories, although varying to a great extent from country to country (Pollitt and Bouckaert 2011), have emphasised more lean public sector. The contemporary public procurement culture is deeply rooted into **the short-term efficiency idea**, which is further reinforced by the prevalent accountability mechanisms employed in public sector. The idea of PPI is much more difficult to legitimize under the contemporary ideological milieu of public administration that is defined by new public management, efficiency and austerity principles rather than risk-taking that is inherent in PPI. For civil servants there is little

to be gained from successfully implementing a risky project, whereas failure to do so almost always leads to direct or indirect penalties. In addition, to bring about change in PPI policy-making is difficult due to extremely **decentralized public procurement systems** that most industrialized as well as developing countries have. In order to pursue PPI policies across public sector, the decentralized context necessitates strong central coordination not only between various purchasing authorities, but also public procurement and innovation policy communities. This kind of coordination is, however, difficult to achieve, and not less so because of the sweeping agencification and decoupling reforms that have taken place in public sectors during the past decades around the globe (Verhoest et al. 2011). Also, there are **public management capacity** of PPI, such as designing and using proper performance criteria instead of input criteria, building and nurturing effective cooperation and interaction mechanisms between procurement stakeholders etc. (see Lember et al. 2015 for more details).

Regarding the ICT procurement, it is the **risk-averse and short-term oriented public procurers** and **inflexible legal conditions** that are considered to be the key reasons behind the slow uptake of PPI. Relatedly, more **coordination**, better **incentives**, **regulatory change** and **awareness raising** among public procurers are suggested to remedy the problems.

Another key trend that can be observed in the recent literature is related **to public sector innovation labs** that are mostly to (re)design public services delivery, processes and/or organisations. These are generally cross-government bodies or independent organisations whose mission is to generate ideas for the renewal of the government's (or also the social and private sectors') operations. They put collaborative practices and co-creation at the heart of their activities.

Denmark is a leading example in Europe through the establishment of MindLab in 2002. "MindLab is a cross-governmental innovation unit which involves citizens and businesses in creating new solutions for society... We are a part of three ministries and one municipality: the Ministry of Business and Growth, the Ministry of Education, the Ministry of Employment and Odense Municipality and we form a collaboration with the Ministry for Economic Affairs and the Interior... MindLab is instrumental in helping the group of owners key decision-makers and employees view their efforts from the outside-in, to see them from a citizen's perspective. We use this approach as a platform for co-creating better ideas" (MindLab 2016). Other examples include the Helsinki Design Lab, an initiative of Sitra, the Finnish Innovation Fund and NESTA's Public Services Lab.

A review of 35 of such labs concludes that such labs, although prominent in many modern public management strategies, are yet far from becoming influential parts of public sector. Such labs are rather unique organizations and diverse in their mission, expected to act as change agents within public sector and enjoy large autonomy in setting their targets and working methods. They are typically structurally separated from the rest of the public sector and expected to be able to attract external funding as well as 'sell' their ideas and solutions within the public sector. Also, they tend to be small structures, specializing on quick experimentations and usually lack the capabilities and authority to significantly influence up-scaling of new solutions or processes. The main capabilities of innovation labs are their ability to jump-start or show case user-driven service re-design projects. Interestingly, IT capabilities seem to be not that prominently present in the studied i-labs. (Tönurist et al. 2015) This all, again, refers to many opportunities as well as to threats in relation to the development of open government services.

Finally, there are **tournament based collaboration** (incl. hackathon, app contest), where experts collaborate intensively on a problem-focused projects and **open**

collaborations, where public organizations post their problems or opportunities and seek for voluntary contributions (Baraniuk 2013; Briscoe and Mulligan 2014).

Johnson & Robinson (2014) argue that at all levels, governments around the world are moving toward the provision of open data, that is, the direct provision to citizens, the private sector, and other third parties, of raw government datasets, controlled by a relatively permissible license. In tandem with this distribution of open data is the promotion of civic hackathons, or "app contests" by government. The civic hackathon is designed to offer prize money to developers as a way to spur innovative use of open data, more specifically the creation of commercial software applications that deliver services to citizens. They conclude that such civic hackathon has the potential to act in multiple ways, possibly as a backdoor to the traditional government procurement process, and as a form of civic engagement. Empirical evidence shows that provision of open data and the incentive the hackathon result in the development of new apps that address place-specific needs and wants, benefitting citizens of that particular jurisdiction. At the same time, empirical evidence also shows that such applications are sometimes ignored or forgotten, leading to limited adoption.

In one of the recent and related empirical studies Mainka and colleagues (2015) report of related challenges, including the **political challenge** (fear to lose power) and **privacy issues** (not clear who will be the owner of open data and who will be accountable for them).

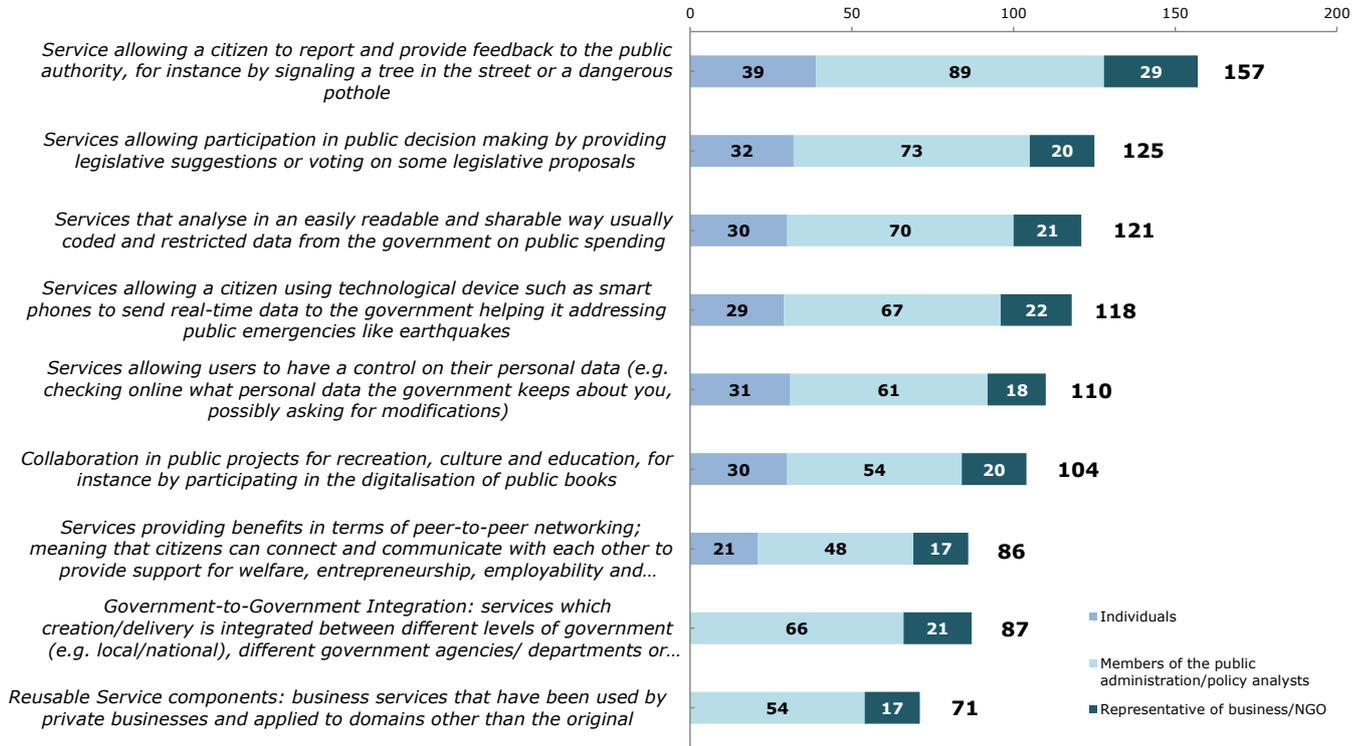
So, literature review indicated that the most common **policy instruments** are public procurement and grants. The latter is still the most widely used R&D and innovation policy instrument. However, when considering the OGS related focus and especially open collaboration and open data related aspects, then other policy instruments could possibly become more important due to their suitability for public sector innovation generally as well as on collaboration more specifically. This justifies our focus on public procurement of innovation, public sector innovation labs, tournament based collaboration and open collaborations. As literature on those topics is rather limited our empirical data gathering is especially important here.

2.1.2 Drivers, Barriers & Policy Instruments for OGS PSIN: Empirical Findings

In the following we will provide the joint results from the web survey and from the interviews. In fact both interviews and the web survey address the same issues and they were designed in parallel in order to ensure a final comparative analysis to cross check and validate specific results. Specifically the web survey provides more quantitative results (although some qualitative inputs were gathered from respondents) whereas the interviewing process complements with qualitative results the output from the web survey (although some quantitative statistical data was gathered by aggregating the number of specific interviews responses). Altogether 60 interviews were carried out and around 200 people responded to the Web Survey with respondents coming from 25 EU countries.

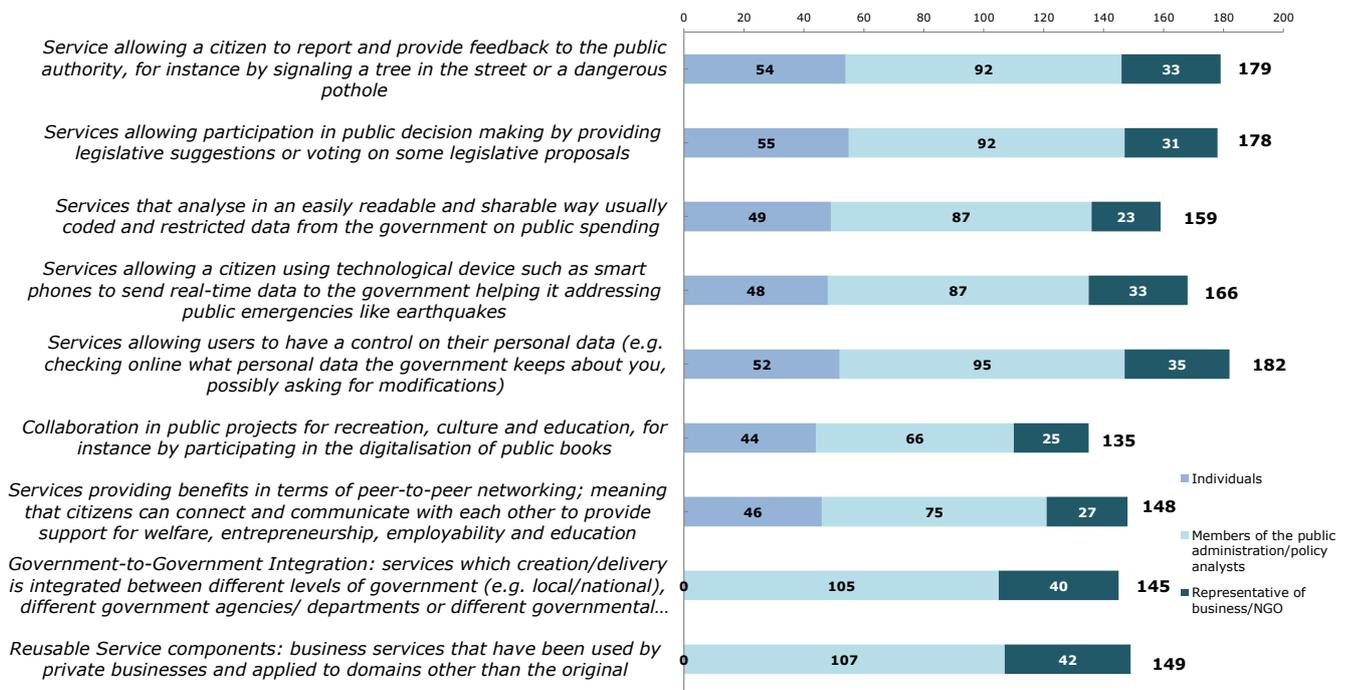
Awareness is different regarding different OGS types. Awareness is highest on the service that allows a citizen to participate in the delivery of public services. For instance, FixMystreet, one of the cases of our Cost Benefit Analysis allows to provide reports and feedback to the public authority on street faults and maintenance issues. Indeed, it is also one of the most popular in terms of actual people usage and effectiveness.

Figure 9 - Are you aware of any of the following Open eGovernment Services?



Source: web survey, all category of respondents (responses from 201 interviewees)

Figure 10 - Would you ever use any of the following Open eGovernment Services?

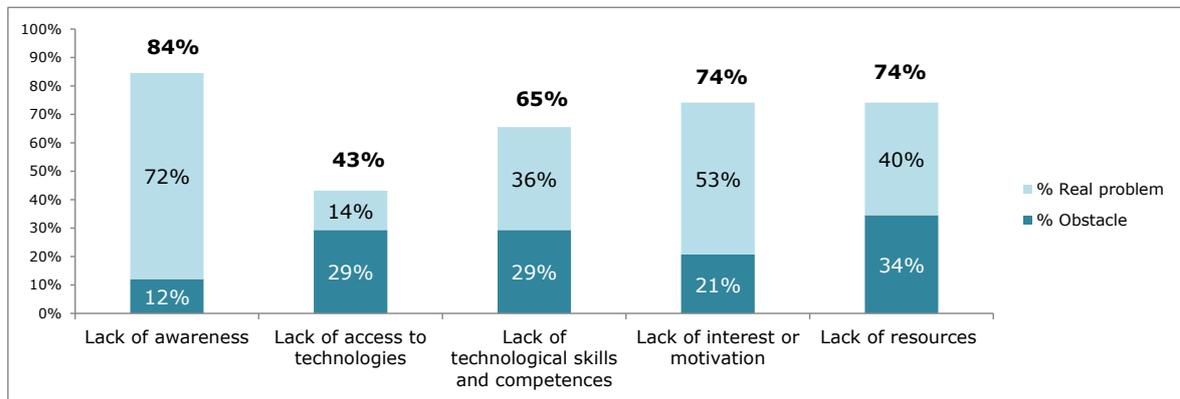


Source: web survey, respondents from all categories, (responses from 201 interviewees)

The graphic above shows that there is generally a great interest in the possible use of OGS. Although there is a narrow difference between listed items, it appears that "Services allowing personal data control", "services allowing participation in public decision making" and services "allowing to report street faults and provide feedback to the public authority" are generally the ones that seem the most promising.

The **barriers for the adoption of OGS from citizens** were addressed both to interview participants as well as to survey respondents. In the web survey respondents were being asked to rate from a scale from 1 to 5 where 4 represents in the graphic below an obstacle whereas 5 stands for a real problem or a very serious obstacle.

Figure 11 - Barriers for the adoption of OGS (individuals)
(% of respondents that identified the item as a "real problem" and "Obstacle")



Source: web survey, category respondents "individuals"

Open Government usually focuses on the engagement of people intended as stakeholders of public services for the common good. What may not be clear to citizens/business about many Open eGovernment Services is their potential benefit in comparison with traditional mechanisms of interaction. The interview results are consistent with the web survey in recognizing **the lack of awareness as the single most important obstacles for the adoption of Open eGovernment Services from people**, in fact 84% identified such issue as "real problem" and an "obstacle"

People but also government do not know how Open eGovernment Services initiatives can bring benefits. In fact there is a general **low awareness** about services where the public and the private sector jointly design and deliver services or participate into the decision making process. Some interviewees explained that the lack of awareness is due to the fact that Open eGovernment Services are rarely advertised. There is a jungle of information on the Internet and people are not aware of services that are already present. Clear communication and dissemination campaigns are crucial. These should also embed some form of "training-to-use" dimension. As it is complex to find relevant information interviewees posit there may be the need of creating platforms or advocating the use of single places where it is possible for people to access relevant content. So far, there is not a common easily browsable and searchable place where all OGS related to a specific city and/or territory may be found.

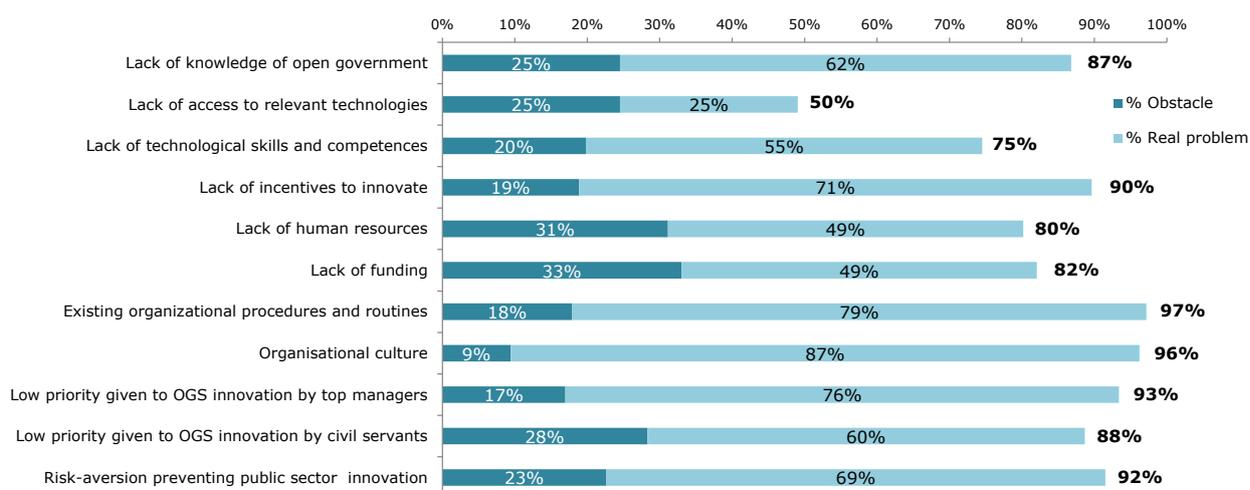
The second most important obstacle for the adoption of OGS from the civil society is people's **lack of interest or motivation as the services are not addressing one's need**. These new services need to have a value proposition otherwise, they will simply be translated into an additional channel of service delivery, which do not develop anything "transformational" to the original service business case. Accordingly, if OGS are well crafted and the interface is suitable there should not be an obstacle preventing people from using OGS. The reason for people's scarcity of interest is epiphenomenal. Yet usability depends on the typology and quality of the service.

The lack of people's participation in the domain of collaborative policy-making may reflect that people are generally uninterested in the political sphere, regardless of whether there is the ICT facet or not. Another aspect of concern is the underlying possibility that within the group of people that has been politically engaged in collaborative decision making there may be a growing lack of trust towards the effectiveness of the public sector action. People that have been involved several times and actively participated to public decision making, but fail at apprehending any change end up criticizing the purposefulness of the service itself and the very same attitude towards collaboration.

Similarly concerning the category of collaborative open services, many that have been created to be open are not always addressing real people's needs. This is partly explained by the differentiation of civil society expectations. This is true both in the public sector as well as in the private one: if a service is not appealing/useful it simply will not be used. EGovernment services may have been built following an administration-centric approach (driving to a low usage of these services) and therefore, ignoring the citizens and other stakeholders needs (citizen-centric approach).

The **barriers for implementation of OGS in the Public Administration** were asked from the public administration/researchers and NGO/business representatives.

*Figure 12 - Organisational level barriers for PSIN in the context of OGS
(% of respondents that identified the item as a "Real Problem" and "Obstacle").*



Source: web survey, category respondents "members of the Public Administration"

The results from the web survey indicate the **low priority given to open government innovation by civil servants and by top managers**. It is connected to another interlinked obstacle, which is the lack of incentives to innovate. Interviewees also identify these obstacles as the most relevant. The interview results also emphasise that **organisational culture and existing organisational procedures** are the most important obstacles.

Organisational culture/procedures are an important obstacle, especially from the the websurvey respondents as 97% identified this as a "real problem" or a "obstacle". In some administrative culture such as Weberian public bodies routines are the core of public service delivery, whereas in other less bureaucratic states there may be more space for service delivery. Often civil servants are not allowed to push for change as they are squeezed in their day-to-day activities. Yet there is a structural and a human dimension to the problem.

Civil servants need to operate within their mandate and legal obligations and they have little capabilities/incentives to innovate. Public administration is subject to the Rule of Law so that politicians and administrative bodies must operate to carry out their functions and processes (i.e. administer their instruments) as set out in legislation. This limits the ability of the employees to innovate.

Additionally the architecture of an administration is important in allowing public servants collaborating at different level of governance with people/business. For instance, services operate at different administrative levels and they often go across the department level. Although there may be a willingness to innovate hindering typically happens at the second level in many administrations.

Yet the human factor is key. The organisational culture can be changed on paper but it is the people that work in that organisation that make up for that culture. Public bodies composed with elder civil servants with 20-30 years of ordinary procedures and routines have difficulties in innovating. organisational procedures have practical purposes, it is somehow effortful and time-consuming having to innovate and adapt to new procedures. There is a mental resistance to change. Investing into the human factor of a public administration may create new opportunities. Younger civil servants, with a strong international culture are less likely to be accustomed to old ways of dealing with things and are more likely to embrace original solutions and spur innovation.

Results from the interviews contend there is a higher responsibility for **top managers** as most of them do not put the collaboration with citizens high on their political agenda. There is a lack of political space and a general reticence from members of the public administration, which are less proactive in working for supporting services which are not empowering civil servants. The problem may come down to the fact that top managers/politicians are often more interested in underwriting policies that have a visible impact. Open eGovernment Services have benefits which are for a great part intangibles and span across the longer term, and empowering people does not bring about short-term benefit as other public policies may do at a first glance.

An interviewee provided another reason why top managers may be fearful in innovating. In some Northern European countries as public services at the moment are efficient and functioning there is a fear of shifting in the way the services are delivered or designed. In fact moving to new systems without the certainty that the new services will be equally functioning is perceived as a risk. Some participants explained that there is the need of having a frontrunner that accept to take the risks and when succeeding it will encourage the others to follow.

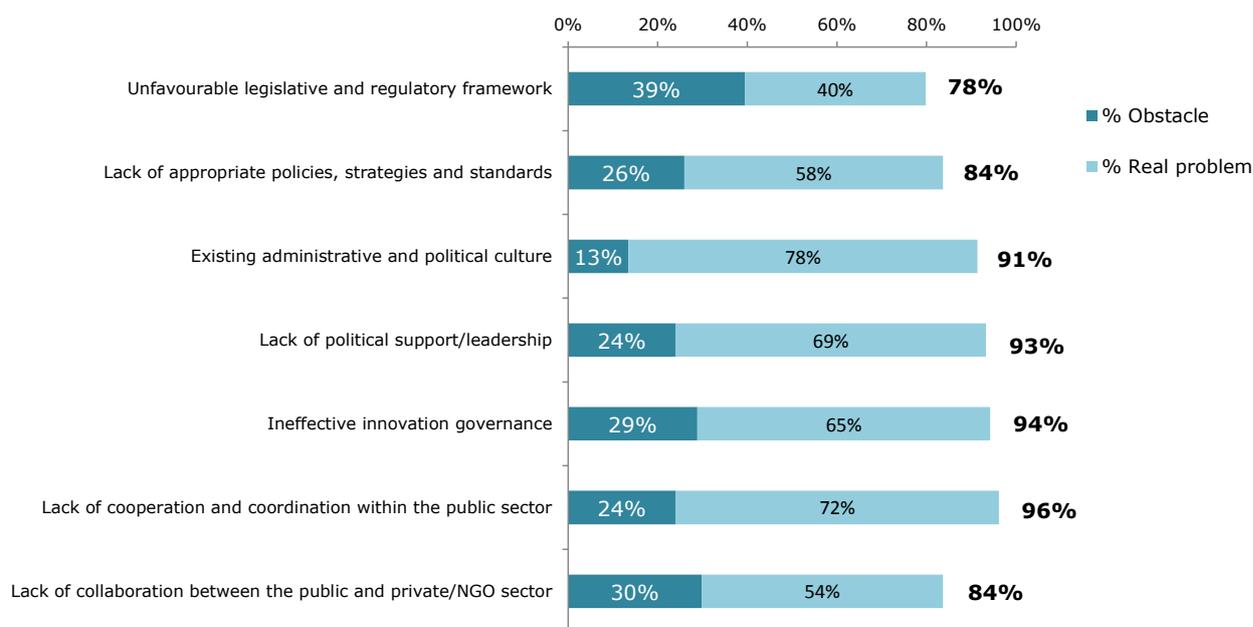
Lack of incentives to innovate from the members of the public administration was perceived as a high-level barrier. In some European countries there is not much desire from the public sector of going into a collaboration with the citizens it is generally not in the country political agenda. This can be explained by their country specific historical administrative culture. For instance the UK has a tradition of collaborative public private relationship and is now one of the countries that is the most keen in embracing Open eGovernment Services, other countries like Denmark are less interested by this type of partnerships.

The web survey and interviews underscored the importance that **the lack of knowledge of Open eGovernment Services** has. Interviewees consider the lack of knowledge as a main obstacle for the implementation of Open eGovernment Services in the public sector suggesting that members of the public administration put innovation in Open Government as a low priority as they do not have the required level of understanding. This statement is endorsed by the results of the survey for which interestingly enough members of the public administration are generally not aware of the existence of Open eGovernment Services.

Other barriers were considered as mid-level one. For instance, **the lack of access to technologies** when referring to public sector innovation is considered a smaller obstacle suggesting that the lack of resources may not be the main problem of OGS innovation. Additionally the public sectors faces different challenges compared to the private sector with respect to gaining the **necessary IT skills** for Open eGovernment Services, as it does not follow the same commercial needs. It was perceived from interviewees that public administrators and decision-makers may not have the skills to understand IT systems. Sub-contracting solves partially the problem. In fact, public institution rarely afford to attract and keep ICT professionals. Some interviewee indicated that experts are deployed at the development level of a project but afterwards these are generally not kept during the maintenance phase when human resources remain minimal.

In the web survey respondents were asked to provide a rating of what they considered as the main **environmental type of barriers** for the adoption of Open eGovernment services.

Figure 13 - Environmental barriers to the OGS implementation in public sector (% of respondents that identified the item as a "real problem" and "obstacle")

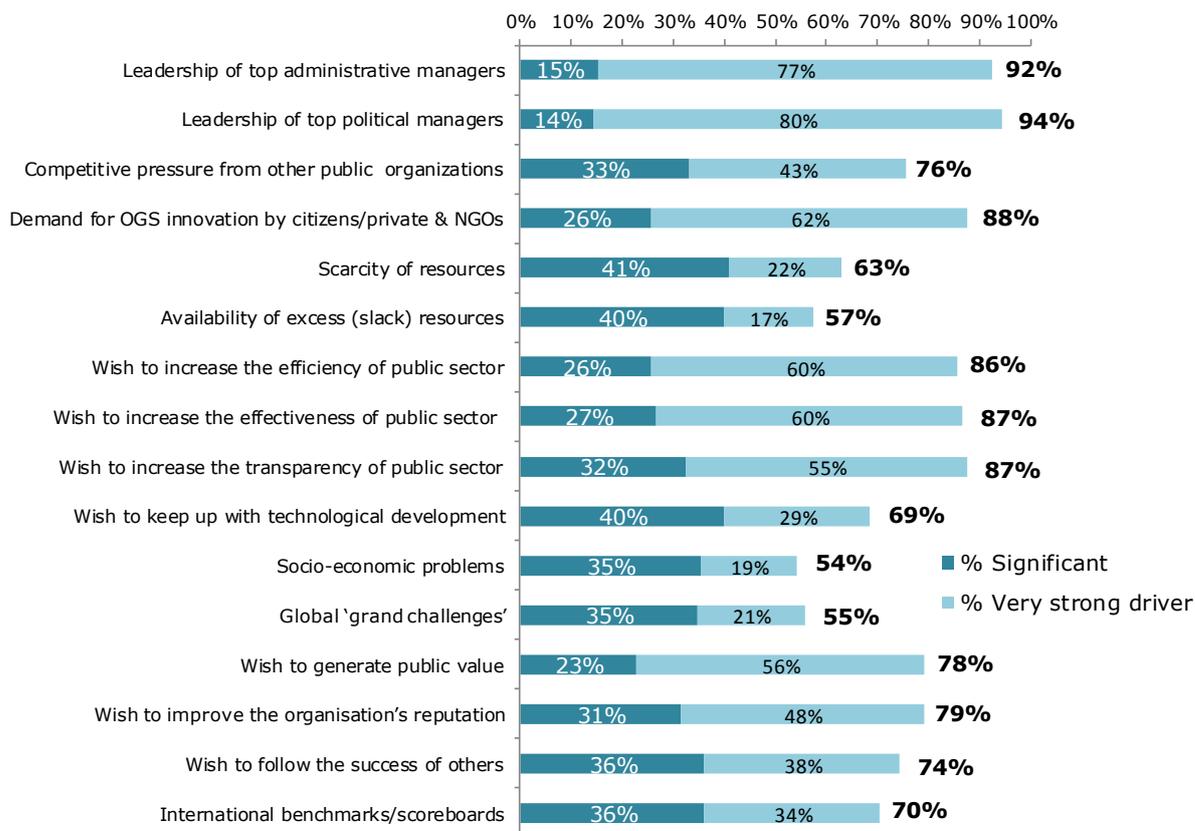


Source: web survey, respondents from "members of the Public Administration"

The main barriers indicated by the public sector are related to the "lack of cooperation and coordination within the public sector", while other issues, such as overall legislative context, administrative and political culture and governance/leadership issues also stand out as well.

Under the **drivers for OGS** we investigated the drivers for the innovation of the public sector in order to implement Open eGovernment Services.

Figure 14 - Drivers for PSIN in the context of OGS



Source: web survey, respondents "members of the Public Administration"

The leadership of top political managers to innovate the public sector is considered the single most important driver. Although leadership of top administrative managers is equally perceived important some interviewees explained than expecting a pivotal role from top managers which are not political appointed is not consistent. Politicians should rather be key political officials championing the idea of Open eGovernment Services.

Leadership is deemed necessary as politicians are in charge of sharing a vision of the future and take initiatives that will be followed by other members of the public administration. Top management leadership is important to transform the whole administrative culture, its organizational legacy and motivate the people that work in it to embrace innovation.

Demand for open eGovernment innovation is an important factor as it brings the demand and the supply together. It is about channelling the demand and informing people. What can sparkle innovation is the demand for services from the civil society as well as the positive competition from another public sector organisation. This driver is important both from the interview results and from the web-survey were 86% of answers considered it a "significant" and a "very strong driver". It shift the attention on the business and people demand for services, as the idea is that new political/economical demand will be the catalyst for the investment for open eGovernment Services. There is a shift from citizens being mere consumers of public services to providers and producers of those services. They want to become the "Prosumers" of the Open eGovernment Ecosystem, co-build the digital identity of the city and participate in the decision-making processes. They want to be heard and empowered. If citizens start expressing a need for Open eGovernment Services governments will start innovating. The relationship between fulfilment and deprivation

of needs will become even more complex in the future society and there will be a push from people that will want a more holistic and integrated approach to services.

Cost is an incredible powerful driver and it forces new way of doing things, opening up in the production process, and how we allocate resources. In fact, in a time of financial constraints there is a need for innovative solutions within the framework of available resources and many benefits in creating open eGovernments services are its cost efficiency. Respondents to the interviews preferred to combine two type of drivers which were both are considered mid-level importance, these are the **wish to increase the efficiency** of the public administration as a driver for the innovation of Open eGovernment Services and the **wish to increase the effectiveness** as another parallel driver. The squeeze on public finances has created renewed momentum for the modernisation of public administrations. Therefore in the transformation of the public sector the most significant drivers are cost savings and increasing productivity through efficiency/effectiveness targets. An interviewee provided an interesting insight. There are risks in talking about efficiency and effectiveness as targets of an administration. If these efficiency gains are immediately scooped up by the Minister of Finance to go to deficit reduction - interestingly enough - improving efficiency may actually not be desired. In contrast, if efficiency gains are reinvested or shared between the Minister of Finance and the proper agencies through an apposite framework then efficiency and effectiveness can be a great driver for innovation in terms of transparency.

Another aspect that was highlighted by interviewees as an important driver **is the competitive pressure from other public bodies**. The underlying explanation factor is that public organisations all want to appear as front-runner and do not want to appear lagging behind.

The fact of public organisations from different countries or at the local level being open to confront themselves and learn from others create virtuous practices. Additionally within the European economic area there are several mechanism of harmonisation and learning from best practices that lead to virtuous examples. Also at the supranational level by putting pressure on countries for innovating can facilitate the process of race-to-the top. Few interviewees disagree with such statements. One explains that at the EU level the competition between governments used to be a driver. Now it is not really anymore at the European level but rather at the local level and city level, with cities trying to brand themselves as smart cities.

Similarly another driver connected to competitive pressure from other organisation that was not perceived as important factor was the role played by **peer pressure and international benchmarks**. In order to drive the adoption of Open eGovernment Service, international organisation such as the United Nations and the European Commission should produce tables or ranking lists on take up. This would put OGS high on the agenda, as international benchmarks help putting pressure on countries to perform better.

On the **instruments/strategies** to use to foster innovation in the field of Open eGovernment Services, the following came out.

Interview results considered **R&D grants for companies/NGOs/research institutions** as playing a pivotal role. Yet they excluded **traditional public procurement** that works on value for money was not perceived effective, as it is difficult to measure the monetary value of Open eGovernment Services innovation

R&D grants for companies/NGOs/research institutions are important at an early stage of development when it is not sure what to do as to stimulate private initiatives in this way facilitating experimenting and learning from it. Grants should be properly framed and the government is compelled to provide specific guidelines in the use of the grants. In general funding innovation is quite important but much of the current

structure for providing R&D in the public sector is not efficient. In terms of money for innovation there is not sufficient finance, the money available is wasted as the governments do not properly allocate them. Grants are helpful in engaging with new partners/projects but the next step needs to be an engagement to co-create and enable new solutions.

Some services funded with grants lack both the human and technical resource to keep the work going on in the long run. Additionally, it is key to provide a system providing feedbacks on what are the outcomes of the project funded as to create communication and information which is all important for innovation.

We are observing a shift from traditional procurement methods to innovative one. Therefore, Innovation friendly public procurements, such as **competitive dialogue and innovative partnership** but also new type of procurement like pre-commercial procurement seem to be promising from the interviews and web survey results in spurring Open eGovernment Services. This is also true for **public sector laboratories**, which receive great public media attention. These are laboratories organised by the public authorities to reach out to the private sector and become partners in solving key social challenged. However promising, so far there are not a great list of labs playing a role in the scaling up of innovation.

New approaches such as **tournament based collaboration including hackathons, app contests, living labs** are interesting ways to involve people from different communities like hackers, developers etc. creating a shared space with a shared set of questions. The interviewee insists on the importance of networks that need to be created across governments and within governments. This is why some interviewees insisted on the importance of them being more community/citizen focused rather than solely technology community focused.

Questions around the value of policy instruments/strategies to spur innovation lead towards the investigation on the general stance the government should have in order to enable Open eGovernment Services. In like manner we asked to our interviewees and the web survey respondents what role the government should have to foster innovation of OGS: should the government be a **leader**, an **enabler**, or simply a **responder to private initiative**?

Whilst the majority of respondents were hesitant between the role as a **leader** and the **enabler** role and they thought it should generally be a combination between the two, overall the answer that was the most recurrent and from a qualitative standpoint had the highest weight was the **government having the role of enabler**. The web-survey results highlighted a more clear-cut result as 43% considered the importance of the enabling role and 20% the one as a leader

The role as an **enabler** was understood by respondents in the sense that public administrations should act as orchestrator, facilitator and enabler of public services fostering the involvement and encouraging other stakeholders such as citizens, businesses, developers community, entrepreneurs to collaborate and co-create a new set of Open eGovernment Services of high economic and social interest. Governments cannot be the single providers of public services. It is necessary to empower other stakeholders and incentivise them to take a more active role. In order to do that adapting regulations for an innovative friendly environment allowing for collaboration with the private sector is key. Some things need to be defined at the centre level and only government can authenticate individuals to standards required legislation, but the private and voluntary sector are better at implementing and innovating.

Additionally, if the government is a leader of an initiative, it will need to respond to critiques; in contrast the enabling role is a more flexible way of letting the society initiate the services tailored to their needs. The government should be agile and let market forces drive innovation. This is interesting from a practical standpoint.

Government are not in charge for all services and this is why the enabler role has great relevance. If the local government has no direct mandate on producing a certain service it can still create and enable initiatives.

However many respondents considered that the government should be both the **leader** and **enabler**. Specific service does not have the strength of moving forward without leadership. They need to be decided at the government level that have a view of all services available and better understand how to feed the citizens' needs. With the multiplication of tools and services that are all different, the government should define specific guidelines. Some answers point at the role of the public sector in respect with fairness or equality of opportunity. Benefits from the incredible innovation produced by market forces are not redistributed and opportunities for competition and innovations are reduced if the government is not at the forefront.

2.2 Future Scenarios

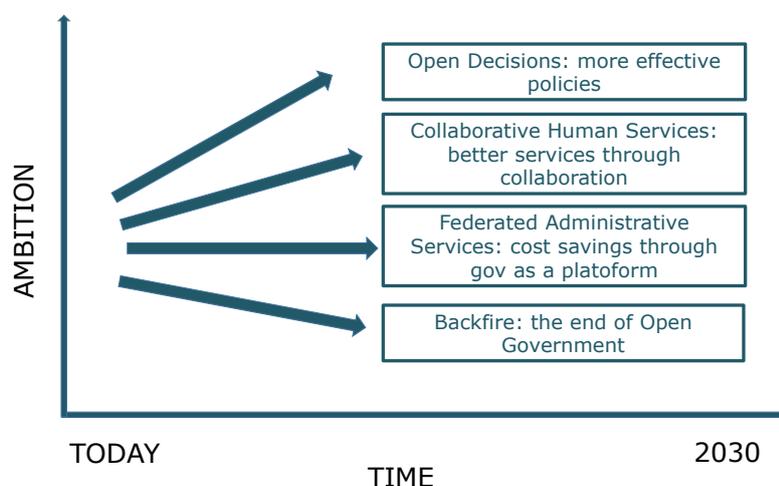
Building on the case studies classification (see in particular Table 27) as well as on the scenario workshop the study team elaborated a series of future scenarios on the future of Open eGovernment Services.

Specifically, the study team elaborated four scenarios describing a different outcome:

- Developing Open decisions;
- Fostering Collaborative human services;
- Federating administrative services;
- The end of open government.

The scenarios have to be taken as intellectual tools useful to understand the pathways of future development of OGS. Moreover, it has to be noted that those are parallel and not alternative scenarios. In fact, the only real alternative would be between a scenario in which the OGS are adopted (either open decision making, human or administrative services, or a combination of the three), and a scenario depicting the end of Open Government. As it can be seen from **Error! Reference source not found.**, the most ambitious scenario deals with the development of Open Decision making to elaborate more effective public policies. On the other hand, the less ambitious scenario describe the return to traditional e-Government. As depicted in the figure below, ambitious initiatives related to participatory policy can help deliver long-term such as trust, while administrative services are more effective to deliver short-term benefits such as cost savings.

Figure 15 - Future Scenarios



Source: consortium elaboration

In the following paragraphs the scenarios are extensively described.

2.2.1 Scenario One: Open Decisions

In this scenario, the main policy decisions are taken with the key input from citizens. Online discussions become the norm, and part of the policy cycle. Any decision deemed "of public interest" is published for open consultation of at least one month, both in the executive and legislative branch. These open consultations allow anyone to provide comments and vote on other's proposals.

On average, each consultation involves 1000 participants, but some of them reach 100.000 whilst the majority of them have less than 500 people. Many citizens who were never involved in politics take part in these decisions, bringing their specific knowledge. Additional live and email contact are carried out for specific segments of the population which is under-represented in the consultation. The quality of the input is high, and many proposals by citizens are directly included in final decisions. Citizens also help identifying the top quality proposals.

The huge amount of qualitative and quantitative data is analysed by governments using advanced text analytics software. The government reports back to citizens about what has been done and how their comments have been used, leading to a virtuous learning cycle. During the implementation of the policy, open data are published about its implementation and citizens can comment and add proposals to improve the quality of implementation.

In this scenario citizens also provide open input in the final evaluation of the implemented policy, which is published online for public commenting. Governments partially reduce their spending in scientific support to policymaking, thanks to the open intelligence brought by citizens, and in including lobbyists. Lobbying mostly happens through platforms rather than in dedicated meetings. As a result, citizens trust government more, are more willing to pay taxes and less likely to vote for

populist parties. Public policies are more effective as all stakeholders feel ownership and collaborate to its success.

An example of initiative relevant for this scenario is the Tartu Participatory Budgeting, based on a plebiscite process to allocate 1% of capital budget to community projects. Other relevant cases are IoPartecipo+ and Parlement et Citoyen, which allow online discussion of policy proposals from politicians, structured and facilitated, open with feedback, on platform available to other PAs. In any case citizens collaborate by participating in making policy decisions.

Obviously reaching this ambitious scenario would not be easy, especially because open decision-making is better applicable to small and tangible issues, and citizens in some cases might lack the knowledge to take decisions related to complex issues. Moreover only small groups are mobilized, and specifically insiders groups, due to a lack of time and motivation from the civil society side. Finally, there is a clear lack of engagement mentality from politicians and public administration, as generally politicians are not too keen to engage the population in the decision-making process.

On the other hand open decision-making could be more easily achieved if the government keeps its involvement in solving more complex issues while crowdsourcing input from the least complex. In the same way it would be crucial to raise general population's awareness on civil society issues, engaging also with socially disconnected groups, and providing scientific support regarding the effect of participation and crowdsourcing information on the quality of decision making. But most importantly the policy processes must be redesigned in order to accommodate citizens' insights.

2.2.2 Scenario Two: Collaborative Human Services

In this scenario, public services with real added value (human services) are systematically designed and implemented with the involvement of citizens and business.

Any function of government providing services to users has to run a systematic "crowdsourcing test" to assess how citizens can bring specific knowledge and their experience as users, at least for some services considered as "core service". The reasons for a service not being co-produced must be clearly outlined.

By default, these "core services" are co-designed with users (citizens and business) and are only developed by government where there are no existing services run by users. Moreover there is a provision of open data and API for users to build added-value services and integrate with existing services. In the same way the core services provide ways for users to collaborate and support each other in the delivery of the service, leveraging their competences, and enabling users' open feedback on the quality of the service.

In this scenario citizens are used to provide specific input and feedback in the delivery of the services. The majority of citizens provides feedback on the status and quality of the services, report problems and provide input for improvement. The feedback is constructive, even when critical. Citizens perceive as their public duty to regularly support other fellow citizens and business in using the service.

Civil servants continue their work by monitoring citizens input and ensuring they are well balanced, they will cover some topics if these are not treated enough from citizens (such as specific services or some specific areas of the city). Rather than controlling the status of the street, they monitor citizens' input on their quality as to ensure that all streets are properly monitored.

Public spending remains unvaried, but the quality of services and citizens satisfaction is much higher. Overall there are less errors and less money spent in service delivery. Citizens' trust in public services increases.

For what concerns this scenarios the case study examined in the present study are FixMyStreet and Kublai, which is a state-provided platform for collaborative development of start-up funding proposals, with advisory staff participation. A final example would be Patient Opinion, i.e. service user feedback on the operational functioning of a public service organization, applicable to other instances. In all the cases, collaboration arises in the live operation of the end product.

Achieving better services through collaboration can be hindered by lack of incentives and motivation for citizens to provide feedback and information, or to collaborate in general. Moreover there might be a lack of expertise of the general population regarding the issues under the scope of the service, as well as a lack of stakeholders commitment in following the feedback from the population. A final difficulty is that this class of services is relevant for issues which are limited in scope and to practical use cases.

On the other hand a favourable scenario can be more easily reached if the collaboration, trust and involvement of citizens is ensured through the provision of incentives, feedback to their input, and information about visible impacts and results of the initiatives. Generally, it would be useful to start with focused projects to build citizen's familiarity, encouraging users' input with easy services at first, and then gradually leading into more complex ones.

2.2.3 Scenario Three: Federated Administrative Services

In this scenario, all the core administrative services are tightly integrated across government, and provided through composable modules that are re-used and integrated automatically. Any such service provides API access for additional integration without any additional software development. Services are provided automatically to citizens, and the once only data provision principle is enforced across all levels of government and within cross-border services. Citizens and business have predictable times for the delivery of their administrative documents, and can monitor their progress online. Clear rules about access to data are provided, and users can see which data are owned by which agencies, and grant permission for access.

Furthermore, administrative services are open for integration with services provided by business. For instance government electronic ID is used by banks, and social media authentication is used by government for some of their activities (e.g. online discussions). Governments also provide open data and open API systematically for third parties.

In this scenario citizens carry out their transactions largely online, in an automated way directly or through dedicated commercial services. They are not particularly engaged in public issues, but they can monitor any decision taken by the government through specific dashboards produced by newspapers and NGOs.

As a result of the implementation of this scenario, government spending is significantly reduced because of savings in service delivery and the rate of errors is greatly reduced. Moreover, government spends less in developing customized software, but reuse software built by other government agencies and "off-the-shelf" apps by commercial players. Finally companies and business save time and money thanks to automated, proactive services, and there is a thriving market of business built online services based on and integrated with government-built software components.

For what concerns the relevant cases for this scenario, our study presents Di@vgeia, which is an initiative based on the mandatory electronic publication of legislation, decisions and action records from public bodies, and in which collaboration is given by providing feed back on the operation of the end product. Other examples are given by NemID, which consists in a common secure login tokens (userid, password, single-use code) for accessing banking and public authority systems; and Interoperable data gathering for e-social security, which is a set of code modules designed to reduce admin burden for social security data collection, which is reusable within public administration. In both cases collaboration is given by designing an end product, and there is no involvement of the public in the provision of input.

The achievement of this scenario can be hindered by a lack of trust of government by citizens, due especially to privacy and security concerns, as well as by a lack of digital skills and incentives for civil servants. Another issue is the presence of government siloes at several levels (national, local, and regional) hampering the re-use of data and service components. In general terms limited interoperability and a lack of clear ownership rules regarding data and service components are a major bottleneck.

On the other hand a favourable scenario can be facilitated by enhancing interoperability through legal harmonization, standards, and integration, by ensuring leadership and accountability for civil servants, providing budget incentives for leaders that adopt the new service, and by breaking the government siloes in order to foster collaboration in public sector across agencies/sectors/entities/levels of government. Other important actions would involve the provision of clear privacy laws and the establishment of clear ownership rights for data and service components.

2.2.4 Scenario Four: The End of Open Government

This final scenario describes the end of Open Government and the return to the traditional e-Government. The hypothesis is that 20 years after the Obama memo on open government, it would become clear that transparency, collaboration and participation were not delivering on their promises.

In this scenario open data portals have been closed because of lack of usage, while the promised large-scale economic gains from reusing open data never materialized. Moreover citizens are not interested in monitoring themselves how government works, and much less in taking part in service delivery and public policy, about which they are

not aware. Citizens and business simply want government to do the basic service delivery, limiting the costs to the minimum. In the same respect building composable services turned out to be immensely time-consuming and difficult to orchestrate across governments. Many service failures took place and it appeared impossible to understand ownership and ultimate responsibility for the quality of service.

In the "End of Open Government" scenario public policies are designed top-down, in a technocratic way, based on the available scientific evidence. Human services are delivered by expert civil servants or outsourced to the private sector. Large, centralised organizational units, supported by software built on demand by large IT corporations, deliver administrative services. Furthermore government costs and benefits remain stable, and Public Sector Innovation disappears from the policy agenda.

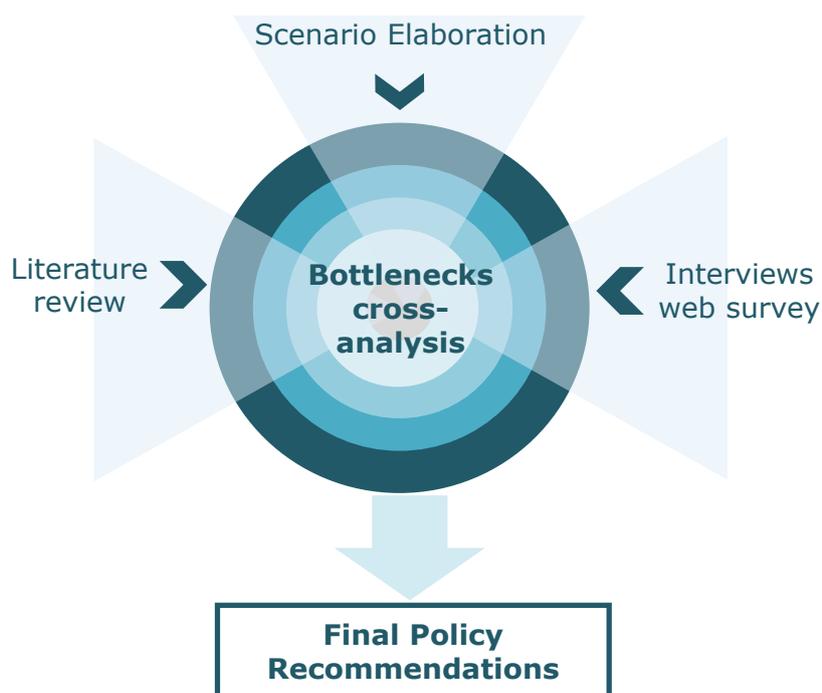
This pessimistic scenario could be driven by a lack of real openness or sharing of data or decisions by the hand of the government, together with the absence of appropriate policies, strategies and standards for openness. Another major driver would be the lack of collaboration of government entities in building and orchestrating composable services across governments.

In order to avoid reaching this scenario, an important factor is the provision to citizens and politicians of real evidence for policies boosting openness, consisting in the assessment of the value of open data, open services and open decisions. In this respect, it is also important to provide incentives for policy makers fostering data openness and re-use. Moreover policy makers must adopt policies forcing the publication of data and public sector information. On top of this data it would be possible to create proprietary applications. Finally governments should create a structured framework for the re-use of data and information, which would maximize the impact of re-use.

2.3 Final Recommendations

As depicted in Figure 16, the policy recommendations build on the cross-analysis of bottlenecks stemming from the literature review, the web survey, the stakeholders interview, and the discussion that took place in the scenario workshop.

Figure 16 - Elaboration of Final Policy Recommendations



Source: consortium elaboration

The recommendations proposed by the study team are in line with the new vision included in the EU eGovernment Action Plan 2016-2020 - Accelerating the digital transformation of government:

"By 2020, public administrations and public institutions in the European Union should be open, efficient and inclusive, providing borderless, personalised, user-friendly, end-to-end digital public services to all citizens and businesses in the EU. Innovative approaches are used to design and deliver better services in line with the needs and demands of citizens and businesses. Public administrations use the opportunities offered by the new digital environment to facilitate their interactions with stakeholders and with each other"

and in particular with its policy priorities:

- **3.1 Modernise public administration with ICT, using key digital enablers.** Public administrations need to transform their back offices, to rethink and redesign existing procedures and services, and open their data and services building on shared and reusable solutions and services based on agreed standards and technical specifications so as to decrease the development cost and deployment time, and increase interoperability. Critical to this endeavor is the re-use of open services and technical building blocks (e.g. as eID, eSignature, eDelivery and eInvoice).

- **3.3 Facilitating digital interaction between administrations and citizens/businesses for high-quality public services.** High quality public services can be provided by stepping up the involvement of businesses and citizens as well as researchers in the design and delivery, and by ensuring feedback for improvement. In the same way, opening public sector data and services and fostering their re-use can stimulate new opportunities for knowledge, growth and jobs, while at the same time increasing transparency and accountability. To this end the Commission will provide high quality, accessible online services to citizens and businesses by transforming its websites into a thematic, user-centred web presence, increasing transparency as well as enabling the engagement and participation of citizens and businesses in programmes and policy making.

The aim of the final policy recommendations is to boost the openness and collaboration dimensions, which are the distinctive features of Open eGovernment Services. In this respect the formulation of policy recommendations has to take into account three main general considerations emerging from the study:

1. **Constraints to Public Sector Innovation for OGS.** There is a consistency in the identification of barriers to PSIN for OGS between literature, the survey and interview findings, the workshops and the cases. The barriers are political, organisational, operational, cultural, educational or legal nature. However, those cited are frequently behavioural symptoms, but the causes are not fully established. Only once the causes are identified the barriers can properly be addressed. Terminological confusion and misunderstanding, particularly around the nature of "the public sector" and "a public service" has made critical analysis difficult. Most specifically, this leads to a widespread failure to set the symptoms in the context of a public realm working under the Rule of Law with political accountability, as exists within the EU. The public sector and public services (and other policy instruments) arise from a policy design and legislative process: once that is complete, the opportunities for innovation by public officials are constrained.
2. **Relativity of the concepts of "Openness" and "Collaboration".** Openness and collaboration are words and concepts that when used in relation to the actions of a government or the state will be interpreted by Member States citizens, public servants and politicians in relation to their own specific historical, cultural and political context. The context varies greatly across the EU where for example attitudes to privacy and volunteering are different. Scrutiny of politicians and public institutions has evolved over the years in many different ways. These are all much bigger constructs than the idea of OGS, but it sits firmly within that complex mix. Any policy or strategy for OGS (particularly at EU level) has to recognise that it cannot be developed solely from a technological perspective.
3. **Value Extrapolation of specific OGS.** The analysis of the value of the cases in this study shows that in specific instances there is considerable public value arising from the OGS approach. The analysis also shows that the value of specific OGS cannot easily be extrapolated at the EU level by assuming an increase in scale or replication. However, the classification framework developed in this study, based on policy instruments and the O-C-T sub-

classification of OGS criteria, provides an understandable and workable approach to identifying more precisely what form of OGS might be feasible and valuable for a particular class of services. This may help to narrow considerably the focus for further study work and give practitioners a more robust rationale and value proposition for those combinations identified in this report.

Considering the above guidelines, the study team has developed a set of concrete policy recommendations and related policy measures:

1. Design openness as a gradual learning process
2. Adjust the institutional framework
3. Design clear incentives
4. Disseminate proactively
5. Improve the evidence base

Designing openness as a gradual learning process would increase the participation of citizens to the decision making process, increasing the quality of their input as well as their trust in the government. Adjusting the institutional framework would boost innovation and experimentation, and would clarify the roles of citizens and public servant in collaborative services. In the same respect, designing clear incentives would obviously provide a push for the citizens to collaborate and for the civil servant to adopt Open eGovernment Services. Furthermore a proactive dissemination would boost the awareness of citizens, business and civil servants about Open eGovernment Services, and would also boost the digital skills and competence for all the three categories. Finally improving the evidence base would give to citizens and business incentive and motivation to collaborate, and to public administration a justification for implementing open data and open service policies. Clearly policy measures 1-3-4 are related to the policy priority 3.3 of the EU eGovernment Action Plan 2016-2020, while policy measure 2 is more related to policy priority 3.1.

In the remaining of the section for each policy principle will be presented a set of concrete recommendations addressed to different actors. Coherently with the very definition of open government services, recommendations are indeed targeted not only at government, but also at citizens and business.

2.3.1 Design openness as a gradual learning process

Description of the challenge

OGS are neither a panacea for every government service, nor a solution to be applied systematically across government. They have specific benefits and cost, under specific conditions. They have to be designed carefully taking into account the factors. They escalate with difficulty. Administrative services there are costs to collaborate across government and with third parties on administrative services. For human services, citizens are likely to contribute on a limited set of services for which they are particularly interested; even more so for participatory policy. Across different types of services, evaluator feedback is easier to get than collaborative design, which is easier to obtain than collaborative implementation. The limited awareness of OGS is not only a problem to be solved, rather an index of the "attention scarcity" of our society.

Moreover, the quality of the input of collaborating individuals and bodies can vary greatly. It is clear that as of today, not all issues can equally be "crowdsourced": the simpler the issue, the more probable it is to receive useful feedback. For instance, providing information on a hole in the street is more likely to be useful than an input on a complex policy issue. Citizens and business interest varies greatly from service to service. Participation should start from a very focussed set of services and policies,

and gradually extended. At the same time, the value of a policy input in terms of increasing trust in government is far greater than the value of providing input on street bumps. In fact, different kinds of input have different benefits; the quality of the input tends to increase over time as a learning process on both sides. Ambitious initiatives related to participatory policy can help deliver long-term benefits such as trust, while administrative services are more effective to deliver short-term benefits such as cost savings (Figure 17).

Figure 17 - Different levels of benefit across time



Source: consortium elaboration

In this context, what is important is to design open government services as a fine tuned, gradual, step-by-step approach, with realistic expectations and long term vision. Governments should not expect to receive useful and actionable input right away. Instead, it should deliberately maximize feedback in order to accelerate the learning process.

Rather than promoting OGS as such across government, there is the need to ensure greater focus on a limited set of services: the more ambitious the service in terms of impact, the greater should be its focus. Openness and collaboration should focus on those more likely to entail the interest of other government agencies, business and citizens.

Action at EU level is not only needed to support the integration of administrative services, and to the adoption of open policy approaches in its own websites, as it is described in the latest eGovernment Action Plan. When it comes to collaborative policy and service delivery, the EU should not have a proactive role, supporting and facilitating change – otherwise this leadership will be taken up by other supra-national initiatives such as the Open Government Partnership. We propose to expand the activities in the eGovernment Action Plan to provide concrete support to open government services, to be implemented at MS and local level. There is a strong need for coordination and mutual learning. As such, all our recommendations aim to complement and specify the current policy priorities.

Specific policy recommendations

- **For the European Union**

SPR 1.1 – Elaborate an EU-wide guidance for OGS. The European Commission should elaborate short guidance modules to build and launch OGS. These guidance modules should include structured opportunities and risks, costs and benefits, and list of relevant cases under different types of services. It should also include a template for "OGS audit", allowing any government agency to quickly analyse the potential for openness and collaboration of each service and thereby deciding on which to focus. OGS should be seen as instrumental to the delivery of high-level policy priorities, such as the implementation of the once-only principle and interoperability by default.

SPR 1.2 – Provide open spaces for discussion and exchange of experience between civil servants of different countries, both online and offline, in order to accelerate mutual learning.

SPR 1.3 – Fund and support EU-level MOOCs on OGS for civil servants but open to anyone, to complement the modules elaborated under SPR 1.1. MOOCs, if properly designed, are tremendously effective in delivering value-for-money training on a large scale. The courses should be short, very focussed, delivered in multiple languages, and quickly adaptable over time to accommodate new insight.

SPR 1.4 – Promote global knowledge exchanges with third party countries. In particular, a clear and operational collaboration with initiatives such as the Open Government Partnership, which includes today 19 EU countries, is urgently needed. European leadership should not be seen as alternative, but complementary to global initiatives.

SPR 1.5 – Adopt an internal OGS living action plan, with a very selective prioritization for areas for intervention across administrative, human and policy services, and their expected development across time. In particular, collaborative services deployed to support Member States, such as Digital Service Infrastructures, should be revised to ensure clear focus and selectivity on those most likely to obtain collaboration from third parties. The progress in these collaborative efforts should be tracked periodically with standardised indicators (see section 2.3.5).

- **For Member States**

SPR 1.6 – As part of the action plan, each government agencies should identify a set of priority service for applying OGS approaches, across administrative, human and policy activities. The OGS should be rigorously monitored through standardised indicators. The priority services should as much as possible build upon the existing building blocks at EU level.

SPR 1.7 – As part of the action plan, ensure each national government agency carries out the "OGS audit" on its activities, in order to determine which of its services can be more effectively opened up. This audit should include a check whether OGS are already being delivered by third parties (e.g. NGOs or citizens), in order to avoid duplication.

SPR 1.8 – Prioritize OGS services requiring simple or low input from each part in the OGS. For instance, start from feedback mechanisms on human services rather than collaborative policy design.

SPR 1.9 – Ensure that OGS services capture maximum feedback from its implementation, and that they are re-designed according on this feedback. At least 30% of the resources on OGS should be used and deployed after the launch of the services, based on the feedback obtained. Ensure full transparency to collaborating entities about how their input is used.

SPR 1.10 – Ensure involvement of user and third parties from the early stage across all services developed. Relevant stakeholders for each service should be mapped and proactively involved from the early stage of the design.

- Related recommendations for citizens, business and civil society

RR 1.11 – Develop OGS, possibly in partnership with government, with a clear focus on priority areas in order to achieve critical mass. Avoid replicating services already launched and reuse as much as possible existing code (e.g. FixMyStreet).

RR 1.12 – As user of OGS, provide maximum feedback on the existing services, in order to facilitate their improvement.

2.3.2 Adjust the institutional framework

Description of the challenge

It is clear that governments still struggle to make room for open services in their institutional settings. Open government services are mainly carried out as self-standing initiatives, rather than being organically integrated in government process. While this allows the necessary room for experimentation, it clearly fails to provide much needed certainty in both citizens and government officials about the role of collaborative services. OGS should be recognized as a fundamental part of the Digital Single Market and in particular for the implementation of key reforms such as the introduction of the Once-Only principle. To provide a concrete example, while the role of consultations is typically well codified in government, there is no equivalent for crowdsourced services. In this context, it does not come as a surprise that lack of leadership is the most frequently mentioned barrier in terms of OGS development. The collaborative dimension should be mainstreamed across all government modernisation activity.

It is time to provide a more solid institutional framework that enables experimentation. Citizens need to trust government about their data and their input in open government services. Civil servants need to know how they can fit open government services in the existing model. In this regard, the framework must give a clear vision of the limits and constraint of Public Sector Innovation in the current administrative setting. This framework does not have to be strict nor mandatory, but to clarify the scope and possibilities. In some areas, it could be more structured, in others more flexible. On administrative services it could be stricter, by establishing mandatory requirements for interoperability and the establishment of unique identifiers for data and services, and clear indication for who can access what data and how. On human services, it could provide recommendations for a systematic "crowdsourcing test", equivalent to the "SME test" for regulation. Any such service provided by government should carry out an analysis, based on a recommended common methodology, to assess which part of the service could be crowdsourced, so that government role would focus on those services that can't be provided in a peer-to-peer mode. Moreover, the framework would provide clear indication on how to treat accountability for quality of services in a context of collaborative service provision. On open decisions, the framework could suggest which kind of decisions could be opened up, using which methodologies, and how the input of citizens could be treated in order to foster the learning process described above.

Specific policy recommendations

- **For the European Union**

SPR 2.1 – Elaborate a EU-wide statement of principle for OGS, clarifying the roles of different levels of government and the different requirements for openness and collaboration. The Malmö Ministerial Declaration is now 7 years old and needs to be updated based on the development and the lessons learnt in the last years. The statement should recognize the importance of OGS and identify the key elements for its deployment. It should frame OGS in the wider context of the Digital Single Market, adding "collaborative by design" as another principle together with "digital by default", "once-only data provision" and "open data by default". It should set out clear principles regarding data and service-components ownership and re-use, provide clear indications on accountability for quality of services, and recognize innovation and risk-taking as key components of governing. It should act as a foundational document which national and local policy decision can refer to. It has also to be noticed that these principles are mentioned in the EU eGovernment Action Plan 2016-2020 (Action 6), while the adoption of marginal cost charging as the default charging policy is included in the revised PSI directive (2013/37/EU).

SPR 2.2 – Support MS policy deployment with regard to institutional recognition of OGS, by providing templates and examples of legislative and non-legislative measures.

SPR 2.3 – Lead by example by ensuring political recognition to openness, innovation and risk-taking inside European institution. Develop internal guidelines for staff to ensure common rules of engagement and collaboration with third parties. Create dedicated spaces for innovation and risk-taking within EU institutions, adopt a fail-fast, experimental approach throughout the service delivery and policy-making cycle.

SPR 2.4 – Foster the adoption of existing DSI building blocks not only towards Member States, but boosting collaboration with private third parties, which should be stimulated to reuse and integrate these building blocks for service provision (e.g. eId, eInvoicing). This policy recommendation is related to Actions 2 and 6 of the EU eGovernment Action Plan 2016-2020. Collaboration with private players (and not only with MS) should be built in from the outset of all present and future building blocks.

- **For the Member States**

SPR 2.5 – Adopt and endorse clear statements of principles regarding OGS in government by developing national guidelines for OGS, if relevant this should be done in conjunction with the national eGovernment plan or the OGP action plan. Ensure that this not only reflects the priorities of national governments, but also sub-national and local institutions. Ensure top-level ministerial support for the guidelines.

SPR 2.6 – Ensure all government services are potentially OGS, by allowing services modules developed to be reused by third parties, including private sector entities. Any OGS should be "collaborative by design", allowing easily any third party to connect and reuse the service over time.

SPR 2.7 – Provide clear guidelines to civil servants for collaborating online. Do not ban social media in the workplace, since they are fundamental tools to enable collaboration. Ensure collaboration and openness are included as part of the staff regulation and employment contracts.

- **Related recommendations for citizens and businesses**

RR 2.8 – Publicly support and recognize members of government who endorse OGS, through social media or in elections.

RR 2.9 – Publicly support and recognize citizens and NGOs launching OGS.

2.3.3 Design clear incentives

Description of the challenge

Collaboration and openness come at a cost. For civil servants, it implies additional work in terms of promotion and analysis. For citizens and business, it implies devoting time and effort in understanding and proposing.

Appropriate incentives should be built in the system. To be clear, these do not have to be monetary incentives: it appears that the main motivation to participate are not linked to monetary rewards.

The problem is that currently, the incentives are set *against* collaboration, rather than *in favour*. Civil servants embarking in OGS initiatives take high risks and gain limited rewards. Innovation and collaboration are not recognized in the career progress system. To be blunt, a civil servant is more likely to be fired for improper conduct on social media, than to be promoted because it has managed to widen policy consultations "beyond the usual suspects". Organisational culture remains very resistant to change.

For civil servants, we may think about recognizing the "collaboration capacity" in their career progress, and designing mechanisms that prioritize achievements and results over seniority. We should also account for "collaboration effort" in the resources made available to different agencies – the evidence shows that OGS typically take more time and resources in the initial phase because of the costs of collaboration. An action plan developed collaboratively with stakeholders is probably requiring more resources in the set up phase, but is most likely to deliver results in the medium term. This should be recognized in how resources are managed and assigned.

Regarding citizens, the main motivation to participate in public decision making are not monetary rewards. There is a need to reward citizens in terms of giving them ownership of their contribution: how it helped improve services and policies. Providing feedback to citizens about their contribution remains at the top of the to-do list of policymakers. But we should also reward citizens who develop bottom-up OGS. Too often government launch hackathons where the final product remains a prototype and has no sustainability. Government should link their procurement budget to OGS and hackathons, purchasing services developed by third parties (obviously, only when useful). Currently procurement processes are designed to accommodate large scale purchase of IT, not small scale OGS.

Regarding the different categories of services tackled in the scenarios, different incentives can be proposed. Considering administrative services, civil servant might be incentivised to adopt them by mean of budget facilitations. Regarding human services, an incentive for the citizens to collaborate and to provide their expertise might be achieved by showing them the impact on the quality of the service itself. Considering services based on participatory decision making, providing feedback to the input received by citizens and showing them that the input they provided has been embodied in the decision making process can boost their motivation to participate.

Specific policy recommendations

- **For the European Union**

SPR 3.1 – Analyse the existing status and provide guidelines and best practices on incentives for civil servants towards OGS. There is the need to assess what are the most effective incentives to stimulate OGS – or to remove the barriers to it.

SPR 3.2 – Adapt staff regulations and employment contracts to recognize and provide backup for OGS initiatives. Based on the previous analysis, EU civil servants should have a clear understanding of the risks and benefits in engaging in collaboration.

SPR 3.3 – Create internal centre of competences on OGS. There is a need for support services (in terms of information, awareness, training, consultancy) to build internal competence in the EU institutions (for instance through a EU lab). These centres can also provide support to national and sub-national governments.

SPR 3.4 – Recognize in resource distribution the effort needed for collaboration and openness. Services with high collaboration with stakeholders should see this effort rewarded and reflected in their resources. However, this has to be related to the effective improvement of levels of service, rather than to recognize openness and collaboration *per se*. Dedicated financial resources should be made available to public and private players in the context of H2020 for the experimentation of open government services.

- **For the Member States**

SPR 3.5 – Adapt staff regulations and employment contracts to recognize and provide backup for OGS initiatives, also based on best practices from other institutions.

SPR 3.6 – Create internal centre of competences on OGS. There is a need for support services (in terms of information, awareness, training, consultancy) to build internal competence in the institutions (for instance through a government lab).

SPR 3.7 – Recognize in resource distribution the effort needed for collaboration and openness. Services with high collaboration with stakeholders should see this effort rewarded and reflected in their resources.

SPR 3.8 – Integrate procurement with existing OGS policies, for instance by ensuring procurement budget to be spent on apps developed through hackathons or inducement prizes. Too often innovative OGS are developed only in demonstrative fashion: if they are valuable, they should become sustainable services. Procurement budget should be set aside for procuring solutions developed through innovative activities such as hackathons, inducement prizes but also research and innovation funding.

SPR 3.9 – Deploy rigorous, mandatory mechanisms across all governments units to ensure that any OGS includes systematic feedback to participants about how their input has been used.

- **Related recommendations for citizens and businesses**

RR 3.10 – Recognize the effort of collaboration and ensure uptake of OGS launched by government and third parties. Citizens and business should make sure that the effort to open up government services does not end up unnoticed. Participation is the most basic way to measure the success of OGS.

RR 3.11 – Citizens and business should make their part and proactively launch OGS in order to address public issues. There is no need to wait for government action to do so. OGS should pursue as much as possible a constructive collaboration with government, and avoid competing with existing services.

2.3.4 Disseminate proactively

Description of the challenge

Important bottlenecks in the adoption of Open eGovernment Services are given by the lack of awareness of citizens and civil servants on the subject, as well as on the lack of skills and competence required. In this regard communication campaigns can be used both to raise awareness, as well as to share know-how and best practices. More specifically government bodies should organise dissemination activities for instance on the sharing and reuse of data and service components, or about the collaboration in

the design/delivery of services, in order to raise awareness on OGS, but also develop the necessary expertise across citizens/businesses and civil servants. This dissemination must be based on a proactive outreach on social media and third party platforms. In practical terms, public bodies should organize online engagement and live events, which are mutually supportive and should be closely interlinked. Online engagement helps improving live events by kick-starting discussions and setting the right expectations before the event, ensuring its momentum and results are maintained as a follow-up. Live events are useful to reinforce the online community and intensity the collaboration. Regarding the different categories of services tackled in the scenarios, dissemination is aimed at fulfilling different purposes. For instance a communication campaign on services based on participatory decision making should increase the awareness of citizens about civic issues, and should provide citizens with a feedback on the input they provided. On the other hand such communication activity will be aimed at explaining decision makers the importance and utility of crowdsourcing. Instead considering human services, awareness can be raised regarding the utility of participating in such services and in providing their own expertise to the community. Finally, taking into account administrative services, dissemination should be aimed at explaining to both citizens and civil servants the budget benefits of implementing such systems, as well as reassuring citizens about issues such as data privacy and IT security. In any case, the dissemination targeting citizens/businesses should make use of language and concepts according to national cultures and attitudes towards the ideas of "openness" and "collaboration".

Specific policy recommendations

- **For the European Union**

SPR 4.1 – Elaborate an EU-wide dissemination campaign in coordination with Member States and local authorities. The campaign will combine online engagement and live events, and will be carried out at central and local level by Member States and local authorities, which will adapt the strategy according to their needs.

SPR 4.2 – As a part of the strategy, the EU should set up a centralised website (or a section in an already existing website) displaying information material available in all European languages. The content available in the website will have to be disseminated in previously mapped social media channels and third party platforms used by citizens/business and civil servants, and will be adapted to the relevant audience. Obviously this policy recommendations is directly related to the Action 20 of the EU eGovernment Action Plan 2016-2020;

SPR 4.3 – Likewise the EU will have to organize live events for high level decision makers in which are presented best practices in the field of OGS, open data and open services initiatives and their impact on public administration and on the population in general. The aim of these events will be to inform the policy makers about the possibilities offered by OGS in opening up data and services, and will contribute to create a political push for the adoption of OGS in Member States.

For Member States

SPR 4.4 – As a part of the general dissemination strategy, Member States should organise live events for the population at large. The events will have to be advertised in social media and third party platforms used by citizens, and adapted to relevant audience. Live events and online engagement will have to be combined in order to maximize take-up. Apart from providing information about OGS, live events will also raise awareness on the topics to be tackled by OGS initiatives and will also inform citizens about their rights related to data privacy, and businesses about accountability and property rights related to service co-design

SPR 4.5 – Likewise Member States will have to organize restricted events for civil servants on a regular basis, presenting best practices of OGS, open data and open services initiatives from all over Europe. During the events organised by Member States civil servants will be informed on the possibilities offered by OGS, and what their role would be in the case of OGS adoption, as well as being informed about the impact of OGS on the public administration and the population at large.

SPR 4.6 – Set up and run a monitoring and evaluation system of the level and quality of engagement in the dissemination campaign. The monitoring and the evaluations should take place on a regular basis as to amend the dissemination strategy if necessary. The evaluation will make use of participation metrics and indicators (e.g. embedded in the websites-platforms), as well as periodic surveys to the users of the online engagement channels and to the attendees of live events. In any case, a system allowing continuous feedback must be used.

- **Related recommendations for citizens and businesses**

RR 4.7 – Citizens and businesses should engage regularly in the web dissemination activities and the live events carried out by authorities, and provide feedback on a regular basis. Citizens and businesses should also help in the dissemination of the content to their peers and should engage in the monitoring and evaluation of dissemination activities. Obviously, their level of engagement will also depend on their perception on the usefulness of OGS, which in turn depends on dissemination campaigns.

2.3.5 Improve the evidence base

Description of the challenge

Innovating and adopting Open eGovernment Services is often times resource consuming both in monetary terms and in terms of dedicated time and effort. In this respect, it is necessary to provide a clear evidence base showing the benefits of investing in OGS innovation and in collaborating in their design/delivery. In particular, sound evidence should be produced to indicate the impacts of the re-use of data and service components, as well as the benefits of crowdsourcing feedback and information from the population at large. In fact, by opening up public sector data and services and facilitating their re-use by third parties, public administrations can foster new opportunities for knowledge, growth and jobs. Moreover, when opening their data and decision-making process, public administrations become more transparent, increasing their accountability while getting closer to their citizens, as well as gaining new insights and ideas. A crucial element for the creation of a sound evidence based lies in the capability to evaluate the impact and sustainability of Open eGovernment Services. In this regard, it is important to elaborate a framework based on a standardized set of evaluation indicators that can enable benchmarking and comparison exercises among initiatives taking place in different fields and countries. This framework could be used both for an analysis of monetary benefits of OGS, but most importantly for an assessment of the capabilities to cope with societal challenges. An example of this exercise can be the elaboration of a federated multilevel tool to allow the measurement and the comparison of open data impacts across Member States, institutional levels and time. Ultimately, the goal would be to conceive a business case justifying the investment of resources and efforts in developing open services (based on open data and re-usable components) and in collaboration in service co-design and delivery.

Specific policy recommendations

- **For the European Union**

SP 5.1 - Clarify the constraints of Public Sector Innovation, taking into account the foundational EU principles of the Rule of Law, supremacy of Parliaments, and political accountability, helping citizens/businesses and civil servants to identify where in the policy cycle (through initiation, design, legislation, implementation, operation, monitoring) the consideration of the potential of PSIN and/or OGS is taken into account in the most useful way.

SP 5.2 - Set up a repository of the best initiatives for OGS, as well as the best examples of impact of open data and open services, justifying the investment of resources and efforts in developing open services and in collaborating in service co-design and delivery. The repository will be categorised by country, and the material displayed will have to be available in all Member States' languages. The repository must be available online in the website of the European Commission and/or in specialised forums and communities (e.g. Joinup).

SP 5.3 - The EU should elaborate an evaluation framework based on a standardised set of indicators enabling benchmarking and comparison exercises of OGS initiatives across topics and countries. Likewise the EU should elaborate an evaluation framework to allow the measurement and the comparison of open data and open services impacts across Member States and institutional levels. The frameworks will be made available to the public in all EU languages.

- **For Member States**

SP 5.4 - Produce a set of guidelines mandating the evaluation of the OGS activities in which the public administrations are involved. The evaluation exercise will then be reported and made available in the European Commission OGS repository. This activity include the use of the aforementioned evaluation framework elaborated at European level and tailored to the specific characteristic of the services involved

- **Related recommendations for citizens and businesses**

RR 5.5 - As OGS entail the collaboration of citizens and business in the design and/or delivery of public services, their activity is also pivotal in the evaluation phase. In this respect, citizens and business should engage in the assessment and evaluation of OGS initiatives providing the feedback and data required to the public administration. More specifically, as businesses have a central role in running the OGS, it is important that constantly collect and report the necessary data.

2.3.6 Overview

Finally, Table 38 provides an overview of the recommended policy measures to boost Open eGovernment Services, structured by the general policy objectives and type of stakeholder the recommendation applies to.

Table 38 – Overview of the of Policy Recommendations for OGS

Policy Objectives	European Union	Member States	Citizens/business
OPENNESS AS A GRADUAL LEARNING PROCES	Guidance modules for OGS audit Open spaces for discussion MOOC on OGS Global knowledge exchanges Internal OGS roadmap	Identify priority services for OGS Carry out OGS audit Prioritize low-input OGS Ensure learning and fine-tuning of services after launch Early involvement of users	Develop OGS without replication to existing ones and reusing existing solutions. Provide feedback on existing OGS
ADJUST THE INSTITUTIONAL FRAMEWORK	EU statement of principles Support MS deployment Provide political recognition internally Foster adoption of DSI building blocks	Adopt action plan Ensure "collaborative by design" principle in government services Provide guidelines to civil servants	Publicly support government OGS leaders and private OGS developers
DESIGN CLEAR INCENTIVES	Provide best practice guidance on incentives for civil servants Adapt EU staff regulation Create centre of competences Recognize the effort of OGS in budget distribution	Adapt staff regulation Create centre of competence Recognize the effort of OGS in budget distribution Integrate procurement with innovation activities. Ensure feedback to citizens	Ensure uptake of OGS Proactively launch OGS in collaboration with government.
DISSEMINATE PROACTIVELY	EU dissemination campaign Web based repository Live high profile events	Public, high reach events for citizens Restricted events for civil servants Monitor dissemination	Take part in web dissemination activities and live events
IMPROVE THE EVIDENCE BASE	Clarify limitation of public sector innovation Set up a repository of best practices Elaborate easy to use evaluation and benchmarking framework	Systematically deploy evaluation throughout OGS	Business to report publicly on OGS run by them. Citizens to participate in evaluation activities.

Obviously, the policy recommendations will have to be combined and tailored to the specific contexts, in which they are applied, in order to mitigate the bottlenecks and boost the drivers. The final policy mix will likely result in the combination of legal and economic instrument, together with accompanying measures such as information and education campaigns.

2.4 Concluding remarks: putting the results in perspective

This study has shed some lights on the appealing but yet confused notion of OGS. It has provided evidence on the existence and value of OGS, and has elaborated a set of policy recommendations to foster their adoption and development.

More concretely the study has shown that Open eGovernment Services are a diverse but ultimately unified set of services characterised by a deliberate, declared and purposeful effort to increase openness and collaboration through technology in order to deliver increased public value. Moreover, through the taxonomy of types and scopes delivered by the study, it was possible to identify and list the key distinguishing elements of OGS.

The study has shown that OGS deliver value, both in monetary and non-monetary terms, in relation to their type and area of intervention. As depicted in Table 39, both administrative and human services have reached a stage in their development where they fully justify the investment based on the economic or monetized benefits they deliver; in contrast participatory policy services become justified when taking into account the non-monetized benefits in terms of citizens trust in government.

Table 39 - Value of Open eGovernment Services

Area	Service	TECHNOLOGY COSTS	MONETIZED BENEFITS	NON-MONETIZED BENEFITS	SCALABILITY	REPLICABILITY	CONCLUSION
HUMAN SERVICES	Support to entrepreneurship	<i>Moderate</i>	<i>Fairly positive</i>	<i>Very positive</i>	<i>Medium</i>	<i>High</i>	<i>Promising</i>
	Streets Maintenance						
	Feedback Management						
ADMINISTRATIVE SERVICES	Publication of Acts	<i>High</i>	<i>Very positive</i>	<i>Fairly positive</i>	<i>High</i>	<i>Medium</i>	<i>Mature</i>
	Electronic Signature						
	Electronic Social Security						
PARTICIPATORY POLICY SERVICES	Participatory budgeting	<i>Moderate</i>	<i>Negative</i>	<i>Very positive</i>	<i>Medium</i>	<i>Medium</i>	<i>Potential not fully expressed</i>
	Participatory Decision-making						

Source: consortium elaboration

Finally the study has shown that OGS are a new way to innovate, as they entail a different way to develop new services, based on experimentation, fast iteration and user involvement. But they encounter resistance because of the existing risk averse organizational culture in some parts of the public sector: . Thereby OGS adoption and development require concrete actions by all stakeholders: at EU, MS, local level and by citizens and businesses. In order to provide some guidance regarding the actions to be undertaken by stakeholders, the study team elaborated four scenarios to be used as intellectual tools for understanding the future development of OGS. Building on those scenarios, the study team developed a set of policy recommendations and related policy measures for each stakeholder typology.

These are certainly relevant and interesting findings, but ultimately must be challenged against the harsh, fast evolving reality: to what extent can OGS remain a policy priority, in the present context of financial austerity, high unemployment, displacement of entire populations and terrorist threat?

There have been several reports on the opportunities and risks of Open Government, some of them written by the authors of the present one. There is unanimity about the benefit of it, yet progress (beyond the mere publication of open data) has been patchy at best. There is no doubt that the widespread adoption of open government was not only driven by evidence, but by other factors:

- The traditional institutional isomorphism: as Codagnone (2005) puts it, "each single organisation/ institution tend to imitate the most legitimated and/or successful players in their population of reference (we could call them Champions), in order to become legitimised too, and to reduce uncertainty about their future". After Obama was elected (with the substantial role of social media), his first act was to sign a presidential memo on transparency that was imbued with the 2.0 culture; European government soon followed this example.
- Citizens pressure: the adoption rate of social media by citizens proved to be simply too staggering to be ignored. Citizens were talking (often negatively) about government on social media, and government had to join the conversation.
- Civil servants themselves started using these tools (often without permission) and created the change from within.

After 2009, Open Government initiatives were suddenly a "must", without being equipped with the intellectual tools to design, run and evaluate them. This is probably the reason why it is fair to say that while the presence of OGS became almost pervasive in policy documents, its real-life impact has long been obscure. There were a lot of "wheels" being reinvented, and disparate projects were launched in very different fields (from service delivery to political campaigning) without a general underlying strategy.

The present report brings forward clear evidence about the benefits of OGS. Yet we cannot hide the fact that today governments are facing concrete and urgent challenges, struggling with financial austerity and with rising unemployment, which according to many experts are the underlying factors behind the wide discontent in the population and the rise of populist movements. Is Open Government still relevant? Is it still a "must-have", or has it become a "nice to have"? Are we likely to see the "end of open government" scenario come true?

Our answer is probably not pleasant: not necessarily, but it depends on all of us.

OGS can't be the answer to all present challenges, but the evidence in this study show that they can provide an important contribution to some key aspects: in terms of cost savings, quality of services and, last but not least, in cultivating trust in government. While efficiency and savings are typically considered more important in times of austerity, recent political events (such as the US presidential elections and the British referendum) show that citizens' trust in democratic institutions is not a given, and that overlooking it can be extremely risky. The long-term benefits of OGS, in terms of trust and high quality services, are becoming at least as important - and probably more urgent - than efficiency gains.

But this long-term return on OGS investment, in terms of trust-building, is not easy to achieve: it needs genuine and long term commitment, strong leadership, transparent feedback and proper expectations-setting. The cases in the report provide an inspiration on how these benefits can be achieved.

Hence, governments have to experiment and launch new ways to engage citizens and to build trust. It will not be a quick win, but the risk for our democracies is so important that it must be addressed.¹⁰ Governments have to be active in OGS, and honest about benefits and expectations. Citizens and business have to give some of their scarce attention and time to the public good, being constructive in their contributions. And last but not least, policy analysts have to continue challenging the existing evidence regarding the benefits of OGS, and improve the quality of the evidence available, acting as "skeptical optimists" towards policy makers.

In order to ensure the maximum success for OGS it is paramount that all stakeholders have to express their good will and play a proactive role. In the following list we present in a nutshell what are, at the operational level, the key actions required in the short term to implement Open eGovernment Services.

- **Governments** have to be active in OGS and take relevant action by:
 - Identify a set of **key administrative services** for applying OGS
 - **Foster involvement/input/feedback of third parties** from the early stage
 - Allow **services modules developed to be reused by third parties**
 - **Foster** the adoption of existing **DSI building blocks**
 - Create internal centre of competences **providing training and consultancy**
 - **Adapt** staff regulations and employment **contracts to OGS initiatives**
 - **Recognize** in resource distribution the **openness/collaboration effort in OGS**
 - **Set up dissemination** tailored to relevant stakeholders
 - Set up a **repository of OGS initiatives** and impacts of open data/services
 - **Evaluate transparently OGS activities** in which the PA are involved
 - Elaborate and **disseminate an ad-hoc evaluation/benchmarking framework**
- **Citizens & businesses** should engage in delivering OGS's public value by:
 - Publicly supporting other citizens/NGOs and members of government launching and **endorsing OGS, through social media and during elections**
 - Getting involved in the development of OGS through **collaboration with the government**, avoiding competition and ensuring uptake
 - **Engaging in the assessment and evaluation of initiatives** providing the feedback and data required
 - **Engaging in web dissemination** activities and the live events carried out by authorities, and in the provision of feedback for improvement
- **Policy analysts** have to continue challenging the existing evidence regarding the benefits of OGS and should give their contribution by:
 - Continuously scrutinizing and **evaluating the policies carried out by the EU and MS** aimed at fostering adoption and development of OGS
 - **Supporting the dissemination activities** carried out by governments, both through online and offline tools/channels
 - **Improving the scientific evidence for OGS**, clarifying the constraints to

¹⁰ See for instance the landmark report by Freedom House: "Discarding Democracy: Return to the Iron Fist"

Public Sector Innovation as well as the scope in which the potential of PSIN and/or OGS can be most usefully taken into account

- Supporting the elaboration of an **evaluation/benchmarking framework of OGS**

3 Annexes

3.1 Bibliography Annex

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3.2 Case studies Annex

The purpose of this annex is to present the case studies used for the Cost-Benefit Analysis.

The cases selected are:

1. FixMyStreet, Oxfordshire County Council and The London Borough of Lewisham, United Kingdom
2. Open source codebase for FixMyStreet Brussels, Belgium
3. Patient Opinion, United Kingdom
4. Interoperable Data gathering for e-Social Security, Slovenia
5. Participatory Budgeting in Tartu, Estonia
6. Parlement et Citoyens, France
7. Di@vgeia, Greece
8. NemID, Denmark
9. Kublai, Italy
10. ioPartecipo, Italy



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FixMyStreet,
Oxfordshire County Council and
The London Borough of Lewisham,
United Kingdom

Executive Summary

Improving street maintenance and the overall quality of life across cities' districts has become a crucial point for several local public administrations. For this purpose, thanks to the improvement in ICT technology it is now possible for public administrations to use help directly coming from citizens. Services like FixMyStreet go in this direction by enabling citizens to report street faults in a fast, secure and reliable way. Thanks to the reporting activities of citizens, local administration can then take action and provide feedback to the citizen after the problem has been fixed. Moreover, the implementation of FixMyStreet enables local authorities to achieve substantial monetized and non-monetized benefits in terms for example of reduced staff costs or increase in transparency and accountability.

Background and Rationale

Background

FixMyStreet is run by the NGO mySociety. The organization was created in 1996 by a small group of developers under the name of UKCOD (UK Citizens Online Democracy) with the aim of exploring the potential of the internet as a driver of democracy. The name mySociety was adopted only in 2003 thanks to Tom Steinberg who restructured the organization by also involving other core people in the team. Following the official birth of mySociety several projects started to be launched, including: WriteToThem and HearFromYourMP in 2005, TheyWorkForYou adopted as an official mySociety project in 2006 and FixMyStreet launched initially under the name of Neighbourhood Fix-It in 2007. Other major projects implemented by the organization also include: WhatDoTheyKnow in 2008, FixMyTransport in 2011 and the relaunch of Mzalendo in 2012.

Concerning FixMyStreet a similar service implemented in the UK in recent years is Love Clean Streets which follow the same approach and addresses similar problems as the service provided by mySociety including among others: graffiti, pot holes, abandoned vehicles. Built on the Love Clean Street network is also the Keep Britain Tidy app which enables citizens to report environmental issues.

Needs Addressed

The service addresses the need from local institutions to substantially reduce and optimize resources and improve the overall processes related to street maintenance. Moreover, the service addresses the need of citizens to be actively involved in the life of their communities.

Before the introduction of FixMyStreet, or a similar service, traditional reporting procedures involved several time consuming steps especially for the officer checking and allocating the jobs. Moreover, in order to detect potential street faults a large number of operatives had to be deployed on the ground resulting in major expenses for the Council.

Description of the Service

Objectives

FixMyStreet is an open source software developed in order to geo-report issues online. The platform operates primarily as a website, however an application for mobile phones has also been developed. The purpose of the platform is to provide the public with an easy way to report public maintenance issues to the relevant authority.

Inputs and Activities

The service works by entering a postcode (or by enabling the website to locate the user automatically) along with the description of the problem that need to be fixed. The issues reported by citizens are then emailed directly to the relevant Councils. After four weeks since the report has been created, citizens are then contacted by FixMyStreet in order to assure that the problem has been fixed. In case of reports that are considered as inappropriate FixMyStreet administrators can freely edit or remove them. Different types of problems can be reported via the service spanning from potholes or broken streetlights to dangerous pavements and street cleaning. Mobile applications for iOS, Android and Nokia Ovi have been developed. Moreover, through the new FixMyStreet for Councils application it is now possible, for paying Councils, to directly integrate the service into their own web portals and tailor it to their specific needs.

Timing and Planning

The service was first launched in 2007 and has been constantly updated ever since. The latest version, FixMyStreet 1.8, was launched at the beginning of March 2016 including also the possibility to log into the app via a Facebook ID. The FixMyStreet for Councils was launched in 2012, currently several UK Councils along with Zurich City Hall decided to implement and make it accessible from their web portals. Moreover, in October 2012 FixMyStreet has introduced an open source codebase in order to enable developers and coders to actively work and contribute to the development of the platform along with enabling its easier replication in other countries.

Cost structure

The table below provides an overview of the different costs sustained by MySociety in order to develop and implement the FixMyStreet solution. The one-off costs sustained in the start-up year (2007) refer to the planning and development of the necessary infrastructure for the implementation of the service, including among others hardware and software application development, and IT training (€ 39.000)

Besides the one-off costs sustained in the start-up year, Operational costs were also sustained, including: the costs sustained for running the system (including for example infrastructure costs, personnel costs and all the different types of costs sustained for the daily system operations), costs for monitoring and evaluating the system (including for example performance management of the service and all the different types of costs related to the evaluation and monitoring of system's performances), dissemination costs (including for example costs for analysing e-participation inputs, user's privacy management costs and all the costs sustained for promoting the diffusion and use of the service). FixMyStreet maintenance costs (including for example hardware and software maintenance costs and all the costs sustained for maintaining the system) have been consolidated into one figure along with operational costs. Finally, recurrent costs underpin the average operational costs sustained across the last four years.

Table 40 - Cost Overview

Type of Costs	One-off costs	Operational/Other investment costs			
	2007	2012	2013	2014	2015
Start-up	€ 39,000 ¹¹				
Operational					
Costs for running the system		€ 28,000	€ 29,000	€ 29,600	€ 30,200
Costs for monitoring and evaluating the system	-	€ 643	€ 643	€ 643	€ 643
Dissemination costs		€ 643	€ 643	€ 643	€ 643
Total costs per year	€ 39,000	€ 29,286	€ 30,286	€ 30,886	€ 31,486
Recurrent costs <i>(average of operational and other investment costs)</i>		€ 30,486			

Outputs and Outcomes

The service is currently available to all the UK's 65 million residents. The table below provides an overview of the current number of end-users of the service in the UK divided into citizens and public administrations. A time span including the last 4 years (2012, 2013, 2014, 2015) has been considered. As it can be seen in the table below the response to the service has been widely positive among the UK population with an increasing number of citizen. A consistent number of public administrations has been also using the service in the last four years (approximately 430).

Table 41 - Users Overview

Type of users	Last 4 years			
	2012	2013	2014	2015
Citizens	360,873	449,444	508,840	551,384

Main Stakeholders Involved

Citizens are the main actors involved for the successful implementation of the service. They have been involved in the implementation and in the monitoring phase. The possibility to have different "eyes" and "hands" for monitoring and reporting activities proves to be the main feature at the base of citizens' collaboration. In regards to the FixMyStreet for Councils service also local councils have been involved as collaborators across the different implementation phases.

The main motivations for collaboration can be found in the possibility for citizens to actively contribute, via online reporting, to the improvement of services in their local communities but also the possibility for citizens to set-up their own FixMyStreet version via the FixMyStreet Platform.

¹¹ All the values have been converted into € from £ according to the following conversion rate: 1€ = 0,777 £

Barriers

The main barriers that have been encountered while implementing the service have been mostly related to Councils not willing to have the reports sent via FixMyStreet. These type of obstacles have been addressed after the launch of the service thanks to constant dialogue and support from the FixmyStreet team to those Councils that were expressing concerns about the use of the service.

Why the Service can be considered an OGS

Table 42 - Service Overview

Starting year	2007
Type of service	Open e-Government Service
Key actors / stakeholders	Public administration, Citizens
Number of impacted users	The whole population in the United Kingdom
Policy domain	General public services
Level of collaborator/s involvement	Implementation, Monitoring
Type of Collaboration	Open Collaboration
Resources	Many eyes many hands

Openness

The **openness dimension** is defined by the possibility for citizens to access online reports and datasets according to the different areas where the service is operating.

Collaboration

The **collaboration dimension** is defined by the development of the system by the NGO mySociety jointly with public sector bodies. Furthermore, the service is based on the direct involvement of citizens in reporting activities.

ICT-enabled Innovation

The **technology** dimension is characterised by the ICT infrastructure and more specifically the platform and app, which enable citizens to report problems and local authorities to display and eventually address them.

Costs-benefits analysis

In order to provide a better and more detailed quantitative analysis it has been decided to focus on the implementation of the service in specific counties/cities areas instead of considering the country as a whole. The area has been chosen according to the following criteria:

- Proven success of the service;
- Availability of specific data.

The areas chosen are Oxfordshire County and the London Borough of Lewisham in the United Kingdom which represent two of the most successful cases of the adoption of the service.

FixMyStreet Oxfordshire

The FixMyStreet service was introduced by Oxfordshire County Council in 2012 thanks to a successful cooperation with mySociety. The service is fully embedded into the Council's web page. The overall population coverage of the system amounts to potentially 672,000 Oxfordshire residents, according to the latest statistics made public in 2014. Thanks to the implementation of the service it is now possible for the local community to get access to a simple, digital and fast platform for reporting highway defects. Similarly, Oxfordshire County Council has increased its visibility of potential street faults via improved public reporting (especially in regards to less-frequently inspected areas) and reduced administration costs for highways inspectors.

The overall response to the introduction of the service in Oxfordshire has been good, with an increasing number of citizens using the service: 5690 in 2013, 8484 in 2014 and 9953 in 2015. FixMyStreet has become the channel of choice for reporting street faults compared to previous channels like telephone or email.

In the summer of 2016 some additional changes are supposed to be implemented in the service which will increase its impact especially in relation to:

- The possibility for third parties (e.g. Parish Councils, NGOs) to conduct inspections on behalf of Oxfordshire County Council, therefore reducing the number of staff that the Council would have to deploy on the streets.
- Full automation of the different process steps along with enhanced process monitoring and auto-responses.

It is also important to mention that while implementing the service some barriers have also been encountered by Oxfordshire County Council. Among the most relevant are:

- **Technological integration:** complex asset management systems need to be managed correctly in order to have the end-to-end system functioning smoothly;
- **Cost:** important to justify and underpin relevant financial benefits especially in an environment affected by tough financial constraints;
- **Public uptake:** important to promote the initiative in order to encourage citizens to shift to the use of the new channel;
- **Process change:** important to train inspectors to the use of the service;
- **Data quality/trust:** important to constantly monitor and ensure the quality of the information provided by the public.

Costs

Oxfordshire County Council has sustained some major costs for the implementation of the service in 2012 for the initial set-up, accounting for a total of € 45,000. The data reported in the table below also include the planned costs for the foreseen second phase of the project which is going to be delivered by mid 2016. The overall amount sustained by the Council is expected to be around € 150,000 for both service development phases.

Operational and other investment costs have been estimated to account to approximately an average of € 14,620 per year including: costs for running the system, costs for monitoring and evaluating, dissemination costs (including internal staff time for training and become familiar with the system); additional costs for scaling, upgrading or improving the system.

Table 43 - Oxfordshire Cost overview

Type of Costs	One-off costs	Operational/Other investment costs			
	2012/2016	2012	2013	2014	2015
Start-up	€ 150,000 ¹²	-			
Operational¹³					
Costs for running the system	-	-	€ 3,862	€ 3,862	€ 3,862
Costs for monitoring and evaluating the system	-	€ 6,437	€ 6,437	€ 6,437	€ 6,437
Dissemination costs	-	€ 6,437	€ 3,218	€ 1,287	€ 1,287
Other investment costs					
Additional investment costs for scaling, upgrading or improving the service	-	-	-	-	€ 8,920
Total costs per year	€ 150,000	€ 12,874	€ 13,517	€ 11,586	€ 20,506
Recurrent costs <i>(average of operational and other investment costs)</i>		€ 14,620			

Monetized benefits

Several types of monetized benefits have been achieved by the implementation of the FixMyStreet service in Oxfordshire. One of the major savings due to the use of the service is related to the reduction in customer transaction costs achieved through the FixMyStreet channel. More specifically:

- 57 seconds (total average time taken for reviewing reports submitted via FMS) = £ 0,20 (estimated total staff cost per transaction considering an average salary per minute of £ 0,24).
- Considering that the average number of reporting activities via FixMyStreet in the last four years account for a total of approximately 2142 reports it can be estimated that the staff costs for all transactions would amount to: £ 0,20 x 2142 = £ 420
- The same approach can be also followed in order to determine the total staff costs for all transactions for the other traditional channels of communication, therefore:
- 4 minutes 22 seconds (total average time taken for reviewing faults reported via email) = £ 1,07 (estimated total staff cost per transaction considering an average salary per minute of £ 0,24).
- Considering that the average number of reporting activities via email in the last four years account for a total of approximately 1885 reports it can be estimated that the staff costs for all transactions would amount to: £ 1,07 x 1885 = £ 2016.

¹² The costs sustained in 2012 amount to £ 36,500 (€ 46.000) while those sustained in 2016 amount to £ 83,500 (€ 104,000). All the values have been converted into € from £ according to the following conversion rate: 1€ = 0,777 £.

¹³ The costs provided are estimated from Oxfordshire County Council. Monitoring and evaluating the system takes place as part of business as usual activities (staff time), dissemination costs include internal staff time (for example time taken for training and familiarisation with the system, which cannot be accurately measured)."

- 5 minutes 48 seconds (total average time taken for reviewing faults reported via telephone) = £ 1,38 (estimated total staff cost per transaction considering an average salary per minute of £ 0,24).
- Considering that the average number of reporting activities via telephone in the last four years account for a total of approximately 3500 reports it can be estimated that the staff costs for all transactions would amount to: £ 1,38 x 3500 =£ 4830.
- Therefore it can be assumed that the overall savings generated by the use of FixMyStreet amount to: (£ 4830 + £ 2016) - £ 420 = £ 6426 (€ 8095).

Besides the above mentioned benefit another potential saving in relation to the future is the adoption by Oxfordshire Council of the Open311 protocol which will enable them to save approximately £4500 (€ 5700) in integration between FixMyStreet and a single asset management system (including supplier costs, Oxfordshire County Council ICT costs, project management and staff time costs)¹⁴.

Moreover, Oxfordshire County Council estimates that starting from 2016/2017 the introduction of new updates to the system will give permission to system users to review reports or inspect and instruct fixes directly to the contractor (if they are within the OCC defined parameters). OCC inspectors will review unclear cases without visiting the physical location, enabled by user-submitted information (such as the photos, measurements, descriptions). Changes to the process will generate annual service savings of £620,000 (€781,146) annually.

Table 44 - Oxfordshire Monetized Benefits Overview

I.e. of benefits	Calculation method	Quantification
Direct Cash	<i>Reduction in staff costs for all transactions</i> Overall savings generated by the use of FixMyStreet in the last 4 years amount to: (£ 4830 + £ 2016) - £ 420 = £ 6426 (€ 8095).	€ 8,095
	<i>Reduced costs through the need for reduced physical presence</i> The number of inspectors is expected to be reduced generating annual service savings of £620,000 (€ 781,146) annually.	€ 781,146
Future cost avoidance	<i>Lower costs for future projects</i> The future adoption by Oxfordshire Council of the Open311 protocol which will enable them to save approximately £4500 (€ 5700).	€ 5,700
Overall benefits achieved		€ 794,941

¹⁴ Estimation provided by the case representative

Discussion

The implementation of FixMyStreet in Oxfordshire County Council generated several monetized benefits that enabled to fully cover the costs sustained. More specifically, substantial benefits were achieved in terms of reduction of time taken for processing fault reports via FixMyStreet compared to the previous traditional reporting form, which required a physical presence of workers in the streets. Moreover, via the future upgrading in the system and switch to the Open311 protocol other relevant savings will be generated in terms of reduced physical presence and reduced costs for the integration between FixMyStreet and a single asset management system.

Thereby the monetized benefits of the system are related to its collaboration and technological dimensions. More in particular the collaboration dimension is defined by the development of the system by the NGO mySociety jointly with public sector bodies. Furthermore, the service is based on the direct involvement of citizens in reporting activities. In the same way the technology dimension is characterised by the ICT infrastructure and more specifically the platform and app, which enable citizens to report problems and local authorities to display and eventually address them.

FixMyStreet London Borough of Lewisham

The London Borough of Lewisham has been one of the pioneering local entities in the UK adopting a mobile system for reporting environmental issues. The application, LoveLewisham, launched in 2004 was developed in-house and later supplied by a private contractor. However, the system proved to be costly and too restrictive concerning subscription costs and integration with the back office system. Additionally, a specific administrative officer overseeing the public website was also needed. Moreover, reports could be only managed by one system (LoveCleanStreets) without the involvement of other, popular platforms (e.g. FixMyStreet).

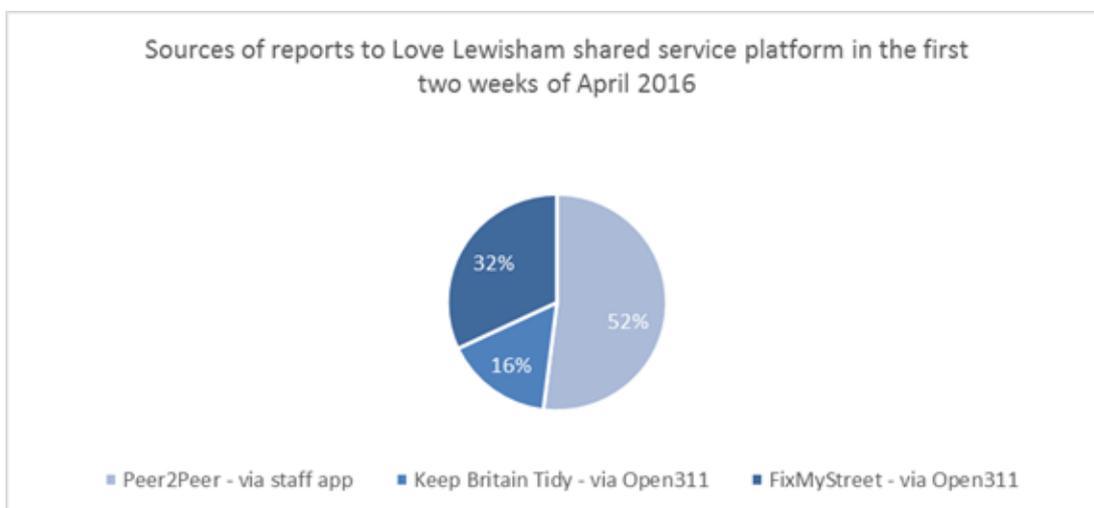
In order to tackle the above mentioned obstacles the team in Lewisham decided to launch and develop in-house a new solution, "LoveLewisham Peer2Peer" in early 2016. Thanks to this new system, it is possible for local administrators to allocate jobs directly to the staff operating on the specific area of interest. Similarly, operatives can also see the reports and when relevant claim jobs as their own. Along with the introduction of "LoveLewisham Peer2Peer" the borough decided to adopt the Open311 standard. Open311 is a protocol which enables services like FixMyStreet, KeepBritainTidy, LoveCleanStreets to be linked to the LoveLewisham system, which was turned into a shared service platform, and have their reports sent directly to the LoveLewisham Peer2Peer app. Thanks to the adoption of the Open311 interface residents of the borough can choose from a range of public apps to post their reports. The authority can avoid the use of multiple third-party administrative systems. Since April 1st 2016 the council has been using only reports generated by 3rd party apps using the Open311 standard.

The services provided in Lewisham via the Open311 standard cover a population of potentially 275,900 people and 116,000 households, with the exclusion of those coming to the borough for work or visiting purposes. The area covered include the electoral wards of: Bellingham, Blackheath, Brockley, Catford South, Crofton Park, Downham, Evelyn, Forest Hill, Grove Park, Ladywell, Lee Green, Lewisham Central, New Cross, Perry Vale, Rushey Green, Sydenham, Telegraph Hill & Whitefoot. Among the main motivations behind the launch of the LoveLewisham Peer2Peer and the adoption of the Open311 standard can be found: enhancement of proactive staff reporting street issues, costs saving thanks to peer to peer reporting, possibility to cooperate and use already established systems like FixMyStreet which lead to less development costs.

The pie chart below shows the different sources of report to the Love Lewisham platform in the first two weeks of April. As it can be seen the adoption of the Open311 standard enables the

platform to receive reports from FixMyStreet but also from the Keep Britain Tidy app. However, the largest share of reports come from the staff app "Peer2Peer" which besides being a mean for allocating jobs to operatives enables also staff to directly report potential street faults and issues.

Figure 18 - Lewisham sources of reports



Costs

The introduction of the Open311 standard didn't involve any set-up costs to be sustained since the protocol is open and free. Moreover, the LoveLewisham Peer2Peer app was developed in-house. However, some minor costs have occurred for daily operations and running of the system amounting to approximately € 2,500 and referring to the Microsoft Azure Cloud Host.

Monetized benefits

The major monetized benefits related to the service can be included in the efficiency category. More specifically some substantial benefits are related to a reduction in staffing costs thanks to the adoption of the Love Lewisham Peer2Peer app compared to the former use of the platform supporting only Love Clean Streets. The overall savings generated from the adoption of the Love Lewisham Peer2Peer app amount to € 131,395.

The benefit has been calculated starting from the numbers below:

- Team Structure using the former service (salaries + on costs):
 - Case worker: € 55,623.
 - Performance Officer: € 55,623
 - Customer Services Officers 3x € 44,911=€ 134,733
 - **Total: € 245,979**
- Team Structure using Love Lewisham Peer2Peer (salaries + on costs):
 - 1 x Systems Administrator & Technical Support Officer: € 44,909
 - 2 x Administration Assistants 2X € 34,837 = € 69,675
 - **Total: € 114,584**

The above mentioned savings were attained thanks to a reduction of staff working in the Customer Services team, thanks to an increased number of reports generated and allocated between staff with a reduced need for residents to report issues. Similarly, an increase in resident satisfaction for Environmental services has also led to a reduction in casework for the whole division.

Worth pointing out is also the reduction in subscription costs that previously were paid for a total of € 18,000 to a private developer in order to use API for reporting.

Table 45 - Lewisham Monetized Benefits Overview

Benefits category	I.e. of benefits	Calculation method	Quantification
Efficiency	Direct Cash	<i>Reduced staffing costs:</i> Team Structure using LoveCleanStreets (salaries + on costs): Total: € 245,979 Team Structure using Love Lewisham Peer2Peer (salaries + on costs): Total: € 114,584 Savings: € 245,979 - € 114,584	Staff costs saving: € 131,395
		<i>No subscription costs</i> € 18,000	Total subscription savings: € 18,000
		Overall benefits achieved	

Discussion

The overall costs sustained for the implementation of the open311 and LoveLewisham Peer2Peer App amount to € 2,500 in operational costs. More importantly the adoption of the system enabled also the local administration to achieve substantial savings in the form of reduced staffing costs and also avoidance of subscription costs. Worth pointing out is also the possibility thanks to the Open311 standard of integrating different services along FixMyStreet in the LoveLewisham App therefore improving the overall efficiency of the Council processes and services offered to the community. Work is currently taking place to post reports from the council's web-forms into LoveLewisham via the Open311 interface. The means that all the borough's environmental reports can be delivered to the operative's mobile device.

Non-monetized benefits

Several non-monetized benefits have been also achieved by the service. The table below summarize the main non-monetized benefits achieved by the service.

Figure 19 - Oxfordshire and Lewisham non-monetized Benefits Overview

Category	Benefit	Examples
Effectiveness	<i>Increase in the value that users receive from the service</i>	The service enable users to receive quick feedback responses from local authorities.
	<i>Increase in inclusiveness of services</i>	The service enables every citizens via their smartphones or computers to report problems.
Efficiency	<i>Better organizational, management and IT architecture of the services</i>	The services enables an improvement in street maintenance processes for local councils along with a reduction in capacity waste.
Democracy	<i>Enhance transparency and accountability of decision-making</i>	Increased transparency of the local administration which can give feedback to each reporting individual about the completion of the job.

Future developments

Key Success Factors

Among the main success factors of the service in Oxfordshire and Lewisham are:

- Its high flexibility which enables it to be used in different ways: as an independent app, embedded into a council's website or linked into another system via the Open311 standard. The third option especially can generate significant benefits;
- The direct involvement of citizens in reporting activities which can be translated into non-monetized benefits in the form of enhanced civic engagement and increased transparency.

Lessons learnt

Among the main lessons learnt during the development and implementation of the service it can be accounted:

- the need for a constant maintenance required by such a complex system; especially in relation to the human resources needed;
- the importance of working closely with other maintenance organisations (such as electricity and water companies, district councils, the national highways agency) to ensure reports are directed to the relevant body in the relevant format;
- Citizen engagement and promotion of the service is crucial.

Future of the service

In order to increase the future use of the service local communities need to be engaged and encouraged to incorporate the system into their own web pages. By achieving an higher integration of the platform it will be also possible to involve citizens on a larger scale by also tailoring the service on the specific needs of each local area.

Conclusions

FixMyStreet represents an example of a flexible service which promotes civic engagement and enhances the capability of local authorities to provide efficient and reliable infrastructures and services to their citizens. As it emerges from the specific case of Oxfordshire County Council, FixMyStreet proves also to be convenient for the local administration in terms of savings it generates concerning: reduced staff costs for all transactions, reduced physical presence and reduced costs for the integration between FixMyStreet and a single asset management system. Similarly, the London Borough of Lewisham, thanks to the use of the Open311 protocol, managed to achieve substantial benefits. More specifically, relevant savings were achieved in relation to reduced staffing costs and also avoidance of subscription costs. Besides the tangible benefits achieved, the service generated also relevant non-monetized benefits, among which it can be accounted: increase in the value that users receive from the service, increase in inclusiveness of services, better organizational, management and IT architecture of the services, enhance transparency and accountability of decision-making.

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fixmystreet.irisnet.be

Open source codebase for FixMyStreet Brussels, Belgium

Executive Summary

The adoption and use of FixMyStreet has spread beyond the UK borders. Thanks to the use of the open source codebase provided by the NGO mySociety local authorities across the globe can create a version of the service customized to their own needs. An example is represented by the use of the service in Brussels. The system has been implemented in the Belgium capital thanks to the collaboration between different local public authorities and private actors. Several monetized and non-monetized benefits have been achieved by the service since its launch including a reduction in physical presence of the inspectors on the ground but also an improved efficiency of interventions and increased transparency for citizens.

Implementation of the service in Brussels

The service was launched by Brussels Mobility and the Minister of the Government of the Brussels-Capital responsible for Regional and Communal IT in 2013, thanks to the open source software developed by the NGO MySociety. The funds that have been made available for the service come from regional public funding sources.

In order to successfully design the service, Brussels Mobility and the Minister of the Government of the Brussels-Capital decided to involve the future users of the system in the different phases of the project. Fifteen out of nineteen municipalities of Brussels region participated in the project along with other public and private organisations. All the involved organisations contributed to the system development by defining the needs of the users and the future core functionalities of the platform. Thanks to their contribution it was possible to design an highly customized system which precisely targeted the needs of its future end-users.

The engagement of all the relevant stakeholders was also extended to the management of the service and the governance structure. A Steering Committee including officials from the organisations involved was created with the aim of taking strategic decisions and spotting problems and functionalities that need to be improved. Similarly, a Management Committee, including including real users from the different organisations was also created with the aim of monitoring the management of the platform along with identifying potential aspects to improve. The Brussels Regional Informatics Centre along with a private company developed both the web portal along with the mobile application.

Costs-benefits analysis

The aim of this section will be to provide an assessment of the costs sustained for the implementation of the system along with the benefits generated. Moreover, it will also provide an overview of the main non-monetized benefits achieved thanks to the use of FixMyStreet Brussels.

Costs

The table below provides an overview of the different costs sustained in order to develop and implement FixMyStreet Brussels. The one-off costs sustained in the start-up years (2011-2012) refer to the costs for the development and launch of the platform. It is also worth mentioning that additional costs were sustained for upgrading the service in 2013, 2014 and 2015. These specific costs have been included under "Other Investment Costs". Operational and Maintenance costs refer to the costs for running the system (functional user support, user training), dissemination costs (monthly workshop organisation), system maintenance (technical support – solving bugs).

Table 46 - Cost Overview

Type of Costs/Revenues	One-off costs	Operational/Maintenance/Other investment costs		
	2011-2012	2013	2014	2015
Start-up	€ 200,000	-		
Operational costs				
Costs for running the system	-	€ 13,541	€ 13,541	€ 13,541
Dissemination costs	-	€ 13,541	€ 13,541	€ 13,541
Maintenance costs				
System Maintenance	-	€ 13,541	€ 13,541	€ 13,541
Other Investment Costs				
Additional investment costs for scaling, upgrading or improving the service	-	€ 230,000	€ 250,000	€ 150,000
Total costs per year	-	€ 270,623	€ 290,625	€ 190,623
Recurrent costs <i>(average of operational and other investment costs)</i>		€ 250,623		

Monetized benefits

Concerning the monetized benefits achieved by the service some estimations have been made by considering the savings generated by the reduced physical presence of inspectors and public officials and workers on the ground. More specifically, thanks to FixMyStreet each problem documented by a citizen doesn't need to be visited by a public inspector. Therefore, considering that an inspector would need 2 hours to leave the office, drive, inspect the problem and come back to the office the overall amount of hours needed for such procedure would be:

- 62,361 (total number of reports 2013-2015) x 2 hours = 124,722 (total number of working hours needed to inspect the reports)
- 124,722 x € 12,4 (average salary per hour) = € 1,546,522

Table 47 -Monetized Benefits Overview

Examples of benefits	Calculation method	Quantification
Direct Cash	<i>Reduced costs through the need for reduced physical presence</i> It is estimated by the case representative that thanks to the online reports it is possible to reduce time for inspections and therefore costs: 124,722 (total number of working hours needed to inspect the	€ 1,546,522

	reports) x € 12,4 (average salary per hour) = € 1,546,522	
	Overall benefits achieved	€ 1,546,522 (in the last three years)

Discussion

Overall the service developed in Brussels proved to be especially cost-effective considering the amount of benefits generated by the service compare to the costs invested. The total amount of capitals that have been invested in the service account for approximately € 951,871 between 2011/2012 and 2015. Conversely, the benefits generated by simply reducing the physical presence of inspectors and public officials and workers on the ground enabled savings for a total of € 1,546,522 between 2013-2015.

Non-monetized benefits

Several non-monetized benefits have been also achieved by the service. The table below summarize the main non-monetized benefits generated by the use of FixMyStreet Brussels.

Table 48 – Non-monetized Benefits Overview

Category	Benefit	Examples
Effectiveness	<i>Increase in the value that users receive from the service</i>	The service enable users to receive quick feedback responses from local authorities.
	<i>Increase in inclusiveness of services</i>	The service enables every citizens via their smartphones or computers to report problems.
Efficiency	<i>Better organisational, management and IT architecture of the services</i>	The services enables an improvement in street maintenance processes for local councils along with a reduction in capacity waste.
Democracy	<i>Enhance transparency and accountability of decision-making</i>	Increased transparency of the local administration which can give feedback to each reporting individual about the completion of the job.

Future developments

Key Success Factors

One of the key factors for the success of the project has been the cooperation among the different stakeholders. Thanks to the involvement of different public and private actors it has been possible to design a system which fully met future users' needs.

Lessons learnt

Among the main lessons learnt during the development and implementation of the service are the importance of legal aspects which need to be taken into consideration since the early phases of the project.

Future of the service

Thanks to the cooperation between the different actors and stakeholders involved, the service is planned to be further strengthened across Brussels city area.

Conclusions

FixMyStreet represents an example of a flexible service which promotes civic engagement and enhance the capability of local authorities to provide efficient and reliable infrastructure and services to their citizens. As is shown by the specific case of Brussels, the implementation of FixMyStreet proved successful also outside the UK. Thanks to the use of the service it has been possible to achieve benefits especially in relation to the need of reduced physical presence of public inspectors on the ground but also an improved efficiency of interventions and increased transparency for citizens.

Sources:

FixMyStreet Brussels – webpage. Available at:
<https://fixmystreet.irisnet.be/fr/>

Epractice Editorial Team 2014, FixMyStreet – Brussels. Available at:
<https://joinup.ec.europa.eu/community/epractice/case/fixmystreet-brussels>

List of all project references interviewed

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Patient Opinion
United Kingdom

www.patientopinion.org.uk

Executive Summary

The demand for healthcare in modern western societies is growing steadily especially since life expectancy is increasing across all countries, with more and more people requiring access to high quality health treatments. Within this framework the platform launched by the not for profit organisation Patient Opinion aims at improving the services offered by health organisations via feedback provided by patients, carers or friends of someone else. The ICT platform enables patients to provide details about their experience which will be then emailed to the relevant health organisations for response and posted, in an anonymous way, on the website. Several benefits are generated by the service spanning from an increased inclusion and empowerment of patients to improved reputation, trust and confidence in health institutions.

Background and Rationale

Background

Patient Opinion is a not for profit organisation which was founded by Dr Paul Hodgkin in 2005 with central office in Sheffield, UK. The service offered by the organisation has rapidly become the leading one in the United Kingdom and has also rapidly expanded beyond its borders to Australia in 2012 and Ireland in 2014, where it is part of Irish Society for Quality and Safety in Healthcare a not for profit charity. Other similar tools, even though less advanced and integrated as Patient Opinion, include traditional feedback channels (telephone or email), which have been in use in different hospitals and institution for many years.

Needs Addressed

The service tackles the need from patients to have transparent and reliable local health institutions which could openly listen to feedback and actively translate the comments received into tangible service improvements. Similarly, the service also addresses the need from local health institutions to spot and solve potential problems that otherwise would have been hard to identify without the external contribution directly coming from patients.

Description of the Service

Objectives

Patient Opinion enables UK patients to provide feedback and comments about their experience in hospitals or health care structures across the country. Besides enhancing the possibility for patients to have their voice heard, the service enables healthcare providers to improve their internal procedures for feedback handling.

Inputs and Activities

The platform works by enabling patients to provide details about their experiences, area in which they live and tags in order to make the story easy to find. Everything is completely anonymous for users. The platform will then email the story to the relevant health services, which in turn can provide an answer directly via the Patient Opinion platform. Patient feedback would be then published as a public re-usable resource for wider public benefit and would also provide read-only access for application developers to publish postings, linked tags, services and responses for application developers. Patient Opinion is also used by universities and researchers interested in looking into experiences and exploring the overall quality of the health care sector.

Moreover, in order to improve organizations' responsiveness and therefore increase the quality of the service provided, Patient Opinion offers three different subscription levels to interested organizations: ranging from a "Level 1 essential" enabling 10 logins and several other features, "Level 2 advanced" with 50 logins including telephone and email support, "Level 3 premium" including unlimited logins and several features for improving strategic engagement.

Timing and Planning

The platform was launched in 2005 with a first pilot version made available for the South Yorkshire area. A nation-wide service was then introduced in 2006 gradually covering all the UK's hospitals and mental health services. An upgraded version was launched in 2010, including new features for searching, alerting and reporting, along with the possibility to display story progress. Moreover, an additional platform named Care Opinion, fully integrated with Patient Opinion, has also been introduced in 2010 in order to collect feedback especially related to the social care sector. Incremental upgrades of the Patient Opinion platform are made on a regular weekly basis.

Cost structure

This part will focus on the costs sustained by the no-profit social enterprise Patient Opinion for the development, implementation and running of the service. The one-off costs sustained in the start-up year (2006) refer to the planning and development of the necessary infrastructure for the implementation of the service, including among the others; hardware and software application development, IT training and corporate and legal costs.

Within Operational costs can be included: the costs were sustained for running the system (including for example infrastructure costs, moderation, support, personnel costs and all the different types of costs sustained for the daily system operations), dissemination costs (promotion and marketing). Moreover, other investment costs were sustained in the form of additional investment costs for scaling, upgrading or improving the service. The table below shows also the recurrent revenues generated by the service in the last four years.

Table 49 - Cost Structure

Type of Costs	One-off costs	Operational/Other investment costs			
	2006	2012	2013	2014	2015
Start-up	€ 225,759	-			
Operational					
Costs for running the system	-	€ 225,207	€ 198,150	€ 187,411	€ 206,735
Dissemination costs	-	€ 75,584	€ 112,141	€ 36,201	€ 15,226
Other investment costs					

Additional investment costs for scaling, upgrading or improving the service				€ 11,441	€127,147
Total costs per year		€ 300,791	€ 310,291	€ 235,053	€ 349,108
Recurrent Costs		€ 298,810			
Revenues					
Total Revenues		€ 390,819	€ 785,116	€ 464,963	€ 556,465
Recurrent Revenues		€ 549,340			

Outputs and Outcomes

In relation to the response to the service, the website traffic accounts for 100,000 users per week with approximately a total of 130,000 stories that have been reported. The overall response rate is 60% in England and 97% in Scotland with 7,000 staff listening.

The table below provides an overview of the number of end-users of the service in the UK divided into citizens and health organisations. A time span including the last four years (2012, 2013, 2014, 2015) has been considered. As it can be seen the overall response to the platform in the UK has been positive with an increasing number of citizens using it in the last four years.

Table 50 - Users Overview

Type of users	Last 4 years			
	2012	2013	2014	2015
Health organisations	-	-	-	614
Citizens	469,972	950,127	1,164,711	1,343,394

Main Stakeholders Involved

The actors involved are the citizens providing feedback and all the registered practitioners, health organizations, and other public bodies that receive the patients' feedback and are interested in using it for improving the quality of the service offered.

Citizens are involved as key collaborators in the evaluation phase. Their involvement is crucial for Patient Opinion since they have direct experience as users of public health services. The main motivations behind the direct involvement of citizens have been the possibility to allow citizens to have an impact on health organizations by expressing their opinions, enable health organizations to improve their services and procedures by listening to direct feedback from end users.

Barriers

Despite the increasing success of the platform, Patient Opinion is still facing some barriers, including for example:

- raising awareness about the service among patients and families
- cultural aversion in relation to online feedback from health service providers.¹⁵

¹⁵ However, substantial changes in the UK health care services policy framework has occurred in the last decade which is also affecting the openness of organizations towards online feedback

Why the Service can be considered an OGS

Table 51 - Service Overview

Starting year	2005
Type of service	Open e-Government Service
Key actors / stakeholders	Public administration, NGO, Citizens
Number of impacted users	The whole population in the United Kingdom
Policy domain	Health
Level of collaborator/s involvement	Evaluation
Type of Collaboration	Open collaboration
Resources	Experience as user of the public service

Openness

The **openness** dimension is characterised by the possibility for patients and citizens to freely consult feedback and reports on each health institutions.

Collaboration

The **collaboration** dimension is defined by the reporting activities which enable patients to provide feedback to health institutions.

ICT-enabled Innovation

The **technology** dimension is defined by the online platform, which enables patients to be directly in contact with health institutions.

Costs-benefits analysis

In order to provide a better and more detailed quantitative analysis it has been decided to focus on the implementation of the service in one single area inside the United Kingdom instead of considering the country as a whole. The area has been chosen according to the following criteria:

- Proven success of the service
- Longevity of the service
- Availability of specific data

The area chosen is Scotland which represents one of the most publicly recognized successful cases of the implementation of Patient Opinion inside the United Kingdom.

Patient Opinion in Scotland

The service is operational in Scotland since 2011- 2012, where it was firstly introduced as a pilot. In 2013, Alex Neil, the then Cabinet Secretary for Health and Wellbeing announced the full deployment of the service across the region. The National Healthcare system in Scotland covers a population of 5.3 million people, compared to its English peer it is still structured in a more

traditional way with the Scottish government directly influencing and guiding the decisions taken. It is composed of 14 Regional NHS Boards and 7 Special NHS Boards focusing on more specialist services. 11 out of the 14 territorial Boards in Scotland are fully subscribed to the service (including: Grampian, Tayside, Highland, Fife, Forth Valley, Lanarkshire, Ayrshire and Arran, Dumfries and Galloway, Greater Glasgow and Clyde, Lothian, and Shetland). However, the Government is also pushing for a full adoption and subscription to the service by the remaining boards. Among other local organisations which are currently using the service: NHS Education for Scotland, NHS 24, Healthcare Improvement Scotland and the Scottish Ambulance Service.

Besides providing funding to the Boards in order to fully subscribe to the service the Government has also been engaged in raising awareness and supporting individual Boards in the adoption of Patient Opinion. Moreover, in 2014 the Cabinet Secretary for Health and Wellbeing decided to host a Parliamentary Reception for Patient Opinion where each Member of Parliament was invited to subscribe to alerts from the service. As a result several senior directors within the Government directly replied to comments and reports posted on Patient Opinion and related to the healthcare services in their constituencies. The empowerment of people is also at the centre of the new legislation which has been launched by the Scottish Government via the Patient Rights (Scotland) Act 2011 in order to introduce new rights for patients to provide feedback, comments and complains. Moreover, the legislation stresses also the responsibility for the National Health System to share the learning outcomes from the comments and feedback they receive.

The service recorded a remarkable success in the number of stories shared online, with more than 80% of the stories shared which have been addressed by the health services responsible. Moreover, approximately 7% of the stories posted have led to changes and improvements and have been read approximately 700,000 times¹⁶.

Costs

The costs sustained by the Scottish Government in order to support the adoption of the platform can be categorized as **Operational/Maintenance**. Within this category, a large portion of costs were sustained for the daily system operations, including for instance infrastructure and personnel costs (€ 116,000 in 2013/14, € 152,000 in 2014/15, € 200,000 in 2015/16). Additionally in 2013/14 € 51,144 was paid directly from the Scottish Government to the local Boards in order to support their engagement with the platform. Similar amounts totalling € 83,109 were also paid to Patient Opinion in 2015/16 in order to support development and marketing activities. No **set-up costs** were directly sustained by the Scottish Government since they are included in the subscription fee paid to Patient Opinion.

Table 52 - Patient Opinion Scotland Cost Structure

Type of Costs	Operational/ Other investment costs		
	2013/14	2014/15	2015/16
Operational			
Costs for running the system	€ 116,000	€ 152,000	€ 200,000
Other investment costs			
Additional investment costs for scaling, upgrading or improving the service	€ 51,144		€ 83,109
Total costs per year	€ 167,144	€ 152,000	€ 283,109
Recurrent costs <i>(average of operational and other investment costs)</i>	€ 200,751		

¹⁶ <https://www.patientopinion.org.uk/info/patient-opinion-scotland>

Monetized benefits

No official data from the case representatives have been collected in regards to the monetized benefits achieved by the use of Patient Opinion in Scotland. However, it has been possible to make some estimations by using data and information available via desk research. More specifically, as shown in the calculations below, it has been estimated the overall amount of costs that the NHS in Scotland used to spend to maintain an offline feedback system similar to Patient Opinion. Thereby, the benefits of the system stem directly from the use of online platform, as well as from the collaboration dimension, defined by the reporting activities which enable patients to provide feedback to health institutions. Let us describe the estimation procedure:

- 300 (approximate number of Hospitals in Scotland)¹⁷ x 1 (potential number of workers handling complaints) = 300 (total number of workers handling complaints across Scotland, out of 28859 administrative personnel¹⁸);
- $300 \times \text{€ } 36671$ (average nurse salary per year in Scotland) = $\text{€ } 11,001,300$ (total staff cost per year);
- $\text{€ } 11,001,300 + [9161^{19}$ (number of complaints in 2015 in Scotland) x $\text{€ } 0,21^{20}$ (average cost for one feedback paper print)] = $\text{€ } 11,003,224$ (overall yearly costs for establish an offline feedback system similar to Patient Opinion).

Table 53 - Benefits Overview

I.e. of benefits	Calculation method	Quantification
Direct Cash	<i>Future cost avoidance</i> $\text{€ } 11,001,300 + [9161$ (number of complaints in 2015 in Scotland) x $\text{€ } 0,21$ (average cost for one feedback paper print)] = $\text{€ } 11,003,224$ (overall yearly costs for establish an offline feedback system similar to Patient Opinion).	$\text{€ } 11,003,224$ /year
Overall benefits achieved		$\text{€ } 33,009,671$ (for 3 years)

Discussion

The overall costs sustained by the Scottish Government for using Patient Opinion account for $\text{€ } 602,253$ covering the following years: 2013/14 – 2014/15 – 2015/16. It can be estimated that the overall costs that the NHS would have sustained in the same years in order to establish an offline feedback system similar to Patient Opinion would have amounted to $\text{€ } 33,009,671$. The potential savings generated by the use of Patient Opinion are therefore relevant.

Non-monetized benefits

The table below summarize the different typologies of non-monetized benefits generated by the service.

¹⁷ <http://www.ournhsscotland.com/65-years/65-facts/current-facts>

¹⁸ 2011 data available at http://www.euro.who.int/__data/assets/pdf_file/0008/177137/E96722-v2.pdf

¹⁹ <http://www.dailyrecord.co.uk/news/health/hospital-complaints-rise-scotland-13-2297101#4yK8rc5bfeyvWV0o.97>

²⁰ <http://www.office.xerox.com/latest/OPBFS-13>

Table 54 - Patient Opinion Scotland non-monetized Benefits Overview

Category	Benefit	Examples
Effectiveness	Increase in the value that users receive from the service	The service enables patients to receive direct answers from nurses or staff members therefore increasing the value of the service compared to traditional feedback systems.
	Increase in inclusiveness of services	The service empowers every patient to report, via a direct and fast channel, any kind of experiences he/she had therefore increasing the overall inclusiveness of the service.
Efficiency	Better organizational, management and IT architecture of the services	Thanks to the feedback provided by patients it is possible for health institutions to improve their service and internal processes.
Democracy	Improve access to and reliability of information	The service enables every patient to freely access the feedback provided by other patients in relation to a specific health institution.
	Enhance transparency and accountability of decision-making	The service increases the transparency of health institutions which are encouraged to answer to patients' feedback, with the answers directly uploaded on the Patient Opinion platform.

Future developments

Key Success Factors

Among the key success factors of Patient Opinion are:

- The core idea behind it. The possibility to provide an open platform where patients could anonymously report feedback on their experiences is something innovative and appealing for several health institutions that want to manage the feedback received along with learning from it.
- Being an independent organisation which therefore is not dependent on policies and decision of the central governments. Especially in an age of budget constraints a similar platform and program developed in-house by the healthcare sector might have been closed.

Lessons learnt

Among the main lessons learnt in relation to the development and implementation of Patient Opinion are:

- Innate features of the healthcare sector which make it resistant to change and therefore hard to innovate. As pointed out by the Patient Opinion team determination and persistence are necessary in order to introduce new disruptive innovations in a sector averse to sudden changes.
- Additionally, a continuous amount of resources need to be invested into the development of the platform. Learning is a prerequisite in order to allow the service to meet the users' demand and therefore prove capable of targeting the right needs.
- Besides technical and financial capabilities it is also important to have the right political framework which could raise awareness about the service and also provide the necessary conditions for its success.

Future of the service

In order to increase the impact of the service in the future several aspects need to be taken into consideration. The number of organisations using Patient Opinion effectively will need to be raised along with raising awareness among organisations' staff members of the advantages that such a platform could bring to the overall improvement of health care sector quality. Moreover, a stronger and more consistent support will need to be provided to the above mentioned organisations in order to help them raise awareness among their population of patients. Finally, as has been the case with the introduction of new features on the web platform in 2010 it will be necessary to constantly introduce new versions of the service with new tools available which could create an incentive for using online feedback.

Conclusions

Despite the lack of monetized benefits that emerged from the analysis, the service can still be considered as a virtuous example of Open eGovernment Services due to the several non-monetized benefits it brought. One of the key aspect of the service is its inclusiveness along with the empowerment of patients and citizens to freely share their stories and experiences online. The impact that such a feedback platform could have on improving the performances of the healthcare sector is high and several public authorities in Scotland have confirmed its key role in the national healthcare sector. The success of the platform can be also highlighted by looking at its replication in Ireland and Australia which make it potentially replicable also in other countries with different health systems.

Sources:

Owen Williams 2014, Divided or united: comparing the NHS across England, Scotland, Wales and Northern Ireland. Available at:

<https://www.membra.co.uk/news-blogs/blogs/divided-or-united-comparing-nhs-across-england-scotland-wales-and-northern-ireland>

Patient Opinion web page, Patient Opinion – updates, changes, questions. Available at:

<https://www.patientopinion.org.uk/blog>

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List of all project references interviewed

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Interoperable Data Gathering for e-Social Security Slovenia

Executive Summary

The importance of ICT is constantly growing among public institutions which aim to make their internal processes more efficient and transparent. Especially social security proves to be one of the main fields on which ICT tools can become valuable. The Slovenian government decided to implement the "Interoperable Data Gathering for e-Social Security" with the aim of reducing the efforts by applicants but also to simplify the decision process in relation to the allocation of different social security measures. The system is composed of 4 flexible and reusable building blocks and it has been developed in cooperation with several public and private stakeholders.

The flexibility and interoperability of the system make it convenient in terms of benefits it generates for the public administration as a whole. Data transaction costs are significantly reduced with the system along with potential costs that each public administration would have to sustain in order to develop a software reproducing the functionalities of the building blocks.

From a more general perspective the system enables also to achieve relevant non-monetized benefits especially concerning enhanced transparency and accountability along with improved information flow and reduced knowledge asymmetry. Moreover, another central aspect of the system is represented by the co-creation behind it. Several public and private entities have been involved across all its development phases in order to create a final product which could answer to the needs of the different parties involved.

Background and Rationale

Background

The Interoperable Data Gathering for e-Social Security in Slovenia was created following the strategy on electronic services development and electronic data exchange which was launched in 2009 by the Slovenian government. The aim of the strategy was to improve the efficiency and effectiveness of public administration with the help of e-government, increase user take-up of e-government services available online, enable better sharing of infrastructures among public institutions, provide support for cross-border services.

Especially after the 2009 economic crisis the government decided to invest more deeply into the simplification of the social security system. The goal of the Slovenian government simplification process of the social security system was to ensure better support for those in need of social benefits, enhance decision transparency, involve citizens, lower risks of misuse of social supports.

Needs Addressed

From a more general perspective the service addressed several needs related to the specific actors involved.

- The Slovenian government and Ministry of Labour, Family and Social Affairs: need to improve decision-making and introduce new data sources on income and property.
- Ministry of Public Administration: implement strategic goals related to electronic data exchange between institutions.

- Data sources (including banks, and other public and private institutions): need to reduce administrative costs and fulfil their obligations in regards to data for e-social security in a more efficient way.

Additionally, thanks to the possibility of reusing the solution it was also possible to address the needs of the Slovenian government for a more efficient distribution of money for IT development, operations and centralization of services. Similarly, other institutions from the public administration needed also to reduce capital and time resources for the development and running of their services.

Description of the Service

Objectives

The above mentioned policy process resulted in the creation of a system for the electronic gathering of data on income and property aimed at reducing the efforts for applicants but also significantly simplifying the decision processes by enabling fast, fair and transparent decisions regarding social support (including for example: child benefits, income support, rent subsidy etc.). The adoption of the system by the government also aimed at the collection and storing of data on income and property that otherwise would have been dispersed across different sources (more than 50²¹).

Inputs and Activities

The system is composed of 4 core building blocks:

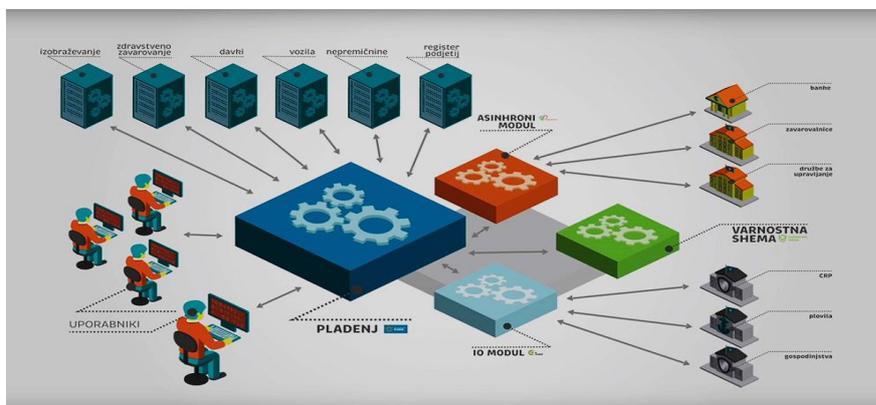
- **Tray:** central system for electronic data enquires. It enables efficient, reliable and secure collection of data for different clients, from numerous and heterogeneous data sources, by handling electronic data enquiries and electronic answers. Moreover, it also enables the handling of data sources in a customized and parameterized way.
- **Io-Module:** common platform for standardized data distribution. Used by institutions for distributing data to the related clients. Additionally, the system enables to maintain the electronic trail of data distributed and to see which user received which data, when and for what specific purpose.
- **Asynchronous module:** enables electronic enquiries to data sources that are not accessible via synchronous access. By using this system, it is possible to communicate with data sources via specific "waiting rooms", where all questions for a data source are collected and after being processed and answered by data source, transmitted back to the calling system with related answers.
- **Security Platform:** enabling a multilevel management of users' privacy and rights. The system can also be integrated into other authentication systems.

All the building blocks run in the Slovenian central government centre; Java is used in the application level while Oracle and SOAP/XML at the database and integration level. The IT solutions have been developed by the local IT industry. The system has been developed for being primarily used in the context of e-Social Security. However, its structure and components are highly flexible and reusable also in other contexts. The system is currently accessible to the entire state administration via the internal communication network²², however it is planned to be extended also to the wider public administration and private sector in the coming years.

²¹ Data provided by the case representative

²² The system is being used by other institutions and fields besides e-Social security including among the others: e-Procurement, e-Higher education, government certification authority

Table 55 - System functioning



(Source: <https://www.medius.si/references/>, <https://www.youtube.com/watch?v=70dxReNOvT4>)

Timing and Planning

The first development phases took place between 2010 and 2011 with the establishment of working groups from the different data sources. On the 26th of January 2012 the system was rolled-out. Since the launch of the service in 2012 the system has been upgraded several times especially in regards to improved versatility, auto-recovery and adaption to technological changes.

Outputs and Outcomes

An average of 16.587 enquiries are processed every day since the introduction of the service with an average of 6.000.000 transactions per year. The overall number of data sources covered within and outside the public administration amount to more than 50. In relation to the end-users for the service the following table provides an overview of the cumulative public administrations' information systems directly integrating the building blocks in the last four years.

Table 56 - Cumulative number of IT systems integrating the building blocks

Type of users	Last 4 years			
	2012	2013	2014	2015
Public Administration	Tray: 1 IO-module: 4 Sec.Platf.: 2 Asynchr.M.: 1	Tray: 1 IO-module: 4 Sec.Platf.: 4 Asynchr.M.: 1	Tray: 1 IO-module: 4 Sec.Platf.: 6 Asynchr.M.: 1	Tray: 2 IO-module: 4 Sec.Platf.: 7 Asynchr.M.: 1

Main Stakeholders Involved

The service has been developed in close collaboration with other government agencies and civil servants which were also responsible for the correct functioning of the system. Private actors, especially banks, have been involved. In order to include the above mentioned stakeholders into active collaboration, a large working group (including 64 members) was created. The working group included all members from the major data sources. Specific working groups were also created for more "niche" data sources like banks or investment funds. The aim of each working group was to propose and implement solutions for specific data sources.

The main motivations behind collaboration can be found in the intention of every data source to create a highly centralized and automatized data exchange system that could minimize the data sharing effort. Moreover, data exchange for social e-security has been introduced as mandatory by the Slovenian law. Therefore, within this new policy framework it is now of crucial importance for different data sources across the country to have a fully automatic system that could reduce administrative work and costs.

Among the public stakeholders involved in the development and roll out of the system a central role was played by the Slovenian Ministry for Public Administration (MPA) and the Ministry for Social Affairs (MSA). More specifically, on the one hand the MPA has been involved in the technical coordination of the project along with providing the necessary IT infrastructure. On the other hand the MSA has been in charge for the legal framework and for data interpretation and for decisions on individual social support.

Barriers

Several barriers have been encountered at different stages of the project (design, development, production) but also on different levels (technical, organizational, legal, political):

- A major obstacle was related to the introduction of a new technology which had to coexist with old ones with the risk of affecting the overall performances of the system.
- The sharing and scope of work and responsibilities proved also to be another crucial barrier which was addressed by the creation of a steering committee with the task of supervising the overall deployment of the project across the different phases.
- Cooperation with different data sources, especially those outside the public administration proved also to be a challenging task. Financial institutions like banks were those more reluctant to give access to their back office system due to high security standards.

Due to the large scale of the project it was not possible to address all the problems encountered in advance, therefore they were addressed on a daily basis and solved on the operational level for the less complex ones and thanks to the support of the steering committee for the more complex ones.

Why the Service can be considered an OGS

Table 57 - Service Overview

Starting year	2010, roll out in 2012
Type of service	Open e-Government Service
Key actors / stakeholders	Public administration, Private actors
Number of impacted users	Potentially the whole Slovenian population
Policy domain	Social Protection
Level of collaborator/s involvement	Design, Implementation
Type of Collaboration	Open Collaboration
Resources	Specific thematic knowledge

Openness

The **openness** dimension is characterised by the possibility for different institutions within the public administration to use the building blocks. Moreover, in the near future the use of the

system might be also extended to private entities therefore enhancing even more its "open" features.

Collaboration

The **collaboration** dimension is defined by the co-design activities which enabled different stakeholders to actively design the service and suggest valuable inputs for its implementation.

ICT-enabled Innovation

The **technology** dimension is characterised by the interoperable building blocks which enables to manage the different types of data enquiries.

Costs-benefits analysis

The aim of this section will be of providing information about the costs and benefits achieved by the system in Slovenia.

Costs

The table below provides an overview of the different costs sustained in order to develop and implement the "interoperable data gathering for e-social security" solution. The one-off costs sustained in the start-up year (2011) refer to the costs sustained for developing the central building blocks. More specifically, these costs can be categorized as "system planning and development" and address the costs sustained for developing/planning the necessary infrastructures for the implementation of the service, including for example hardware and software application, IT training. The development of the building blocks was partly financed via the European Social Fund. Within operational, maintenance and other investment costs can be mostly included the costs for running the system, dissemination costs and Additional investment costs for scaling, upgrading or improving the service.

No costs were sustained by the users of the service. Currently all the costs are sustained only by the Ministry of public administration. However, in the future the use of the building blocks will be expanded to the wider public administration. Even if there are still no calculations made available it is expected that the system might not be free for other institutions using it, especially for the clients from the private sector (but still cheaper for single users than developing and maintaining a new system).

Table 58 - Costs Overview

Type of Costs	One-off costs	Operational/Other investment costs			
	2011	2012	2013	2014	2015
Start-up	€ 1,421,855				
Operational²³					
Costs for running the system	-	€ 100,000	€ 100,000	€ 100,000	€ 100,000
Dissemination costs					€ 34,000
Maintenance costs					
System Maintenance		€ 187,610	€ 189,491	€ 155,921	€ 193,785
Other investment costs					

Additional investment costs for scaling, upgrading or improving the service	-	€ 299,137	€ 213,186	€ 138,977	€ 254,533
Total costs per year	€ 1,421,855	€ 586,747	€ 502,677	€ 394,898	€ 582,318
Recurrent costs <i>(average of operational and other investment costs)</i>		€ 516,660			

Monetized benefits

Relevant monetized benefits have been recorded, among the most relevant it can be accounted:

1. **Reduction in data transaction costs** (paper questions, post, paper answers, manual processing etc.). According to the information provided by the case representative it is estimated that for performing yearly enquiries for approximately 274,000 persons, which were the citizens investigated in the year 2011 before the introduction of new law and new system, at a cost of € 45.45 per person the overall costs would amount to approximately € 12,330 Million yearly costs. As it can be seen from the costs section the electronic alternative would be much cheaper and would result in substantial monetary benefits. An overall number of 50 data sources is also estimated as necessary to consult for each person. The following cost structure should be followed.

- The minimal costs for producing one output paper mail in the old way are estimated to be approximately € 0,7366, considering a minimum monthly wage of € 1200 and including: 1 blank sheet of paper, 1 print, 1 minute per person for generating the document, 1 minute per person for packing the envelope, 1 postal service, 1 minute per person for eventual phone requests in case of delays. One output paper mail would be needed for each one of the 50 data sources, therefore the overall costs would be € 36,83 for all enquiries.
- Once the answers arrive it would be need to perform the following tasks for each one of them: get them, open the envelopes, scan and archive them. Approximately 1,5 minute per person would be needed for handling each answer for a total of € 8,62 for all the incoming answers.

By summing the previous € 36,83 for the outbound procedure with € 8,62 for the inbound one the overall cost for each investigated person would be € 45,45. This number would be then need to be multiplied for the above mentioned sample of 274,000 persons. In regards to the estimation for the calculation method it is important to point out that 1 minute per person in the different phases of the process is considered as an optimistic assumption. Clearly the monetized benefits of the system are related to its openness and technological dimensions. More in particular the openness dimension is characterised by the possibility for different institutions within the public administration to use the building blocks, while the technological dimension is characterised by the interoperable building blocks, which enable to use the different data sources and to manage the different types of data enquiries. Also in this case we assess the potential savings of the initiative by making comparison with a similar non-digital service. However we as a reference the number of citizens investigated with the old traditional system operating until 2011.

2. Some significant benefits can be also recorded in relation to **future cost avoidance**. The benefits are calculated as a difference between the costs that institutions would have to sustain if they had to develop and maintain a system with similar functionalities as the building blocks and those that the Ministry for Public Administration had to sustain for developing the "interoperable data gathering system for e-social security".

The potential costs that the institutions would have to sustain amount to € 4,015,000 while those sustained by the ministry for public administration account for approximately € 3,5 M. Savings that would be potentially generated amount to € 515,000. More specifically the costs

for developing functionalities similar to those of each building block would require 400 person-days (including: analysis, design, coding, deploy, integration, tuning). By assuming a person-days cost of € 500 the overall costs for developing the functionalities of the system would be respectively: Tray: € 200,000, Io-module € 200,000, Asynchronous module € 200,000. For the Security Platform 200 person-days would be needed therefore accounting for a total of € 100,000. Yearly maintenance costs are estimated to be 15% of the investment value. Other costs would also need to be added as yearly costs for supporting one custom functionality including also solving major and minor disturbances, certificate changes etc.. These costs would amount to a total of € 20,000 including infrastructure costs (€ 5,000) and additional personnel costs (€ 15,000).

Following this rationale the costs would be divided as following:

- Year 2012: the following number of integrated systems can be considered (refer to table 1): 1 x Tray, 4 x IO-module, 2 x Security Platform and 1 x Asynchronous module.
 - Multiplied by the estimated investment costs: $1 \times € 200,000 + 4 \times € 200,000 + 2 \times € 100,000 + 1 \times € 200,000 = € 1,400,000$
 - plus 15% normalized yearly maintenance costs: € 210,000
 - 2012 total: € 1,610,000
- Year 2013: two additional client systems are integrated into to the Security Platform: $2 \times € 100,000 = € 200,000$ additional investments
normalized 15% maintenance costs for the € 1,600,000 of accumulated investments: € 240,000
 - 2013 total: € 440,000
- Year 2014: two additional client systems are integrated into to the Security Platform: $2 \times € 100,000 = € 200,000$ additional investments
- normalized 15% maintenance costs for the € 1,800,000 of accumulated investments: € 270,000
 - 2014 total: € 470,000
- Year 2015: one additional client system is integrated into the Security Platform and one client to the Tray: $1 \times € 100,000 + 1 \times € 200,000 = € 300,000$ additional investments
- normalized 15% maintenance costs for the € 2.100.000 of accumulated investments: € 315,000
 - 2015 total: € 615,000

In relation to yearly additional costs the following values need also to be added:

for the Year 2012, we can add operational costs for 8 systems: $8 \times 20,000 = € 160,000$

for the Year 2013, we can add operational costs for 10 systems: $10 \times 20,000 = € 200,000$

for the Year 2014, we can add operational costs for 12 systems: $12 \times 20,000 = € 240,000$

for the Year 2015, we can add operational costs for 14 systems: $14 \times 20,000 = € 280,000$

The overall costs would therefore amount to:

2012: € 1,770,000.00

2013: € 640,000.00

2014: € 710,000.00

2015: € 895,000.00

TOTAL: € 4,015,000.00

These are just the potential costs that in fact did not arise. If we compare these hypothetical costs with the actual costs that Ministry for Public Administration had to sustain (as pointed out previously amounting to approximately € 3,5 M) the achieved financial benefits are already higher than the costs. The ratio is supposed to increase in the future, with the additionally integrated client systems.

Table 59 - Benefits Overview

I.e. of benefits	Calculation method	Quantification
Direct Cash	<i>Reduced data transaction costs: [€45 (daily cost per person for collecting data in the traditional way) X 274,000 (estimated number of persons)] = € 12,330 M.</i>	€ 12,330 M/year
	<i>Future cost avoidance € 4,015,000 (costs for developing a system with similar functionalities as the building blocks).</i>	€ 4,015 M/year
Overall benefits achieved		€ 94,915,000 M (for 4 years)

Discussion

The overall costs sustained for the development and implementation of the service amount to approximately € 3,5 M including the costs sustained in the start-up year and those recurrent for the daily operations of the system. In regards to the benefit section the service enables public administration to achieve substantial savings especially concerning reduced data transaction costs and future costs avoidance. Thanks to the ICT building blocks it is possible to perform several data enquiries in a leaner and more cost efficient way compared to the old data collection way. Additionally, thanks to the creation of common building blocks individual public institutions do not have to develop and manage costly ICT platforms with similar functionalities by their own. Thereby the monetized benefits of the system are related to its openness and technological dimensions. More in particular the openness dimension is characterised by the possibility for different institutions within the public administration to use the building blocks, while the technological dimension is characterised by the interoperable building blocks, which enable to use the different data sources and to manage the different types of data enquiries. Also in this case we assess the potential savings of the initiative by making comparison with a similar non-digital service. However we as a reference the number of citizens investigated with the old traditional system operating until 2011.

It is also worth noticing that, by calculating the break-even point, the overall amount of benefits achieved would repay the costs sustained in less than a year ($\frac{€ 3,488,490}{€ 65,380,000} = 0,053$ of four year).

Non-monetized benefits

Several non-monetized benefits can be recorded in relation to the service. The table below provides an overview and a categorization of those that can be applied to this specific case.

Table 60 – Non-monetized benefits Overview

Category	Benefit	Examples
Efficiency	Better organizational, management and IT architecture of the services	The full automation of the process allow an enhanced communication and data flow between public institutions and between public and private institutions.
Effectiveness	Reduced administrative burden for the businesses/citizens	Reduction of users time thanks to leaner and faster online processes.
	Increase in the value that users receive from the service	Enhanced capability of central institutions to take decisions in the e-social security field in

Category	Benefit	Examples
		a more precise way avoiding mistakes and therefore increasing their reliability towards citizens
Democracy	Improve access to and reliability of information	Improved access to information made available by data sources.

Future developments

Key Success Factors

Different key factors determined the success of the system, more specifically:

- high flexibility of the system which allows it to be reused by different public administrations for different purposes along with also private institutions.
- the reusability aspect is also another key strength that generates substantial savings since each public administration does not have to create a system with similar functionalities.

Lessons learnt

Several lessons have been learned during the different phases of development and implementation of the service. In relation to the development phases the following lessons have been learnt:

- Importance to establish a steering committee: in large scale projects, conflicts with the environment might occur. The establishment of a steering committee could provide support to the top management and also create more direct links with the central government.
- Importance to have a data protection officer: by including a data protection authority it is possible to build trust and also reduce risks especially in projects handling large amounts of personal data.
- Importance to use agile work methods: especially for projects with several unknown variables agile work methods prove to be more effective than the traditional waterfall approach.

In relation to the reuse phase the following lessons have been learnt.

- Importance of visibility and trust: in order to increase the usage of the system it is important to ensure awareness and trust of end-users towards the service provider.
- Importance of sustainability and governance: since the project involves several institutions it is necessary to foster good change management and relationship management practices. Moreover, it is also necessary to constantly have the right financial and human resources in order to keep the system with all the building blocks running efficiently.

Future of the service

In order to improve the success of the service in the future it will be necessary to enhance its level of use along with its sustainability. More specifically it will be necessary to improve trust and visibility of the service, enlarge its availability for more institutions, introduce guidelines for application development. Finally it will be also necessary to continue in the process of technical improvement of the service's features.

Conclusions

The Slovenian "interoperable data gathering system for social e-security" represents an example of a successful implementation of ICT applied to e-social security and to the whole public administration processes. One of its core strengths can be found in the highly flexibility of the building blocks which can be used for different purposes by a wide range of public bodies and potentially in the future also private entities. The co-creation aspects behind the development of the system can be also underpinned as another key aspect of the platform which enabled its success. Moreover, several monetized and non-monetized benefits have been also achieved by the service which make it as a solid example to be potentially replicated elsewhere.

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Participatory budgeting in Tartu, Estonia

Executive Summary

ICT tools have made it possible for citizens to participate more widely in policy processes. One area of experimenting is participatory budgeting, where people decide how to allocate part of the public budget. People are generally proposing, discussing and prioritising on public spending projects.

Tartu, the second largest city of Estonia, is the first city in Estonia that opened up its budget-designing process in 2013. Citizens of Tartu can decide how 1% of the annual investment budget is spent.

The response to the introduction of the service in Tartu has been very positive. The related indicators – the number of people that voted as well as the number of people that actively participated in the debates – have improved when compared to 2013, but most importantly the level of public debate in proposing the ideas and discussing them has improved. Also, by the end of 2015 another 13 local governments in Estonia have introduced such participatory budgeting processes in Estonia, encouraged by the experience of Tartu.

Start-up costs of the Tartu Participatory Budgeting accounted for €29,000 in 2013. Due to system development, the costs were even higher in 2014, but are expected to be lower in the future, similar to the 2015 level. The financial benefits for users, in the form of reduced costs through the need for reduced physical presence in the case of e-voting, are on the same level with the costs of the City Government to run the system in 2015. However, with the inclusion of more online voters in the future the service will show clearer financial benefits in the future.

The main objectives that were set at the beginning of the introduction of the participatory budgeting process were met according to experts interviewed. There is a better understanding generally of the logic of public budgeting and of the limited public resources available. The decision-making processes within the city government are better understood, and trust has been increased. Cooperation of the various interest groups and the City Government has increased, and the overall readiness to participate in public policy has increased as well.

It is recommended to introduce such initiatives elsewhere as it bring along improvements in democracy, transparency and community development.

Background and Rationale

Background

With the emergence and diffusion of ICT tools in public administrations and society, discussions have emerged regarding the wider participation of constituents in the direction and operation of political systems. Participatory democracy advocates more involved forms of citizen participation and greater political representation than traditional representative democracy. However, in reality citizens' direct involvement in political decisions and policies is implemented in a rather limited way, and mostly decision-making occurs via elected representatives.

Problems Addressed

One area to increase citizen participation is participatory budgeting, a process of democratic deliberation and decision-making, where people decide how to allocate part of the public budget. In participatory-budgeting initiatives people are generally proposing, discussing and prioritising on public spending projects.

The process was first implemented in the city of Porto Alegre, Brazil in 1989 (see, e.g., Marquetti et al. 2012) and spread quickly all over Brazil – Cabannes (2006) estimated that more than 1,000 of Brazil's roughly 16,000 municipalities had adopted it by 2006. As of 2015 there are now over 1,500 participatory-budgeting initiatives all over the World; most of these are at the city level, for the municipal budget, but also used for counties and states (see, e.g., Shah 2007, Castillo 2015).

Description of the Service

Objectives

Tartu, the second largest city of Estonia, situated in the Southern part, is the first city in Estonia that opened up its budget-designing process to residents via Participatory Budgeting. The following objectives were set:

- The reasons and logic behind budgeting will be understood better, and it will be criticised less [by the public];
- The decision-making within the city government will be understood better, and trust for these decisions will increase;
- Cooperation within the community of Tartu and between communities will improve;
- Planning and executing the project will make all those involved more carefully consider problematic areas and possible solutions;
- The citizens' wish to participate in other projects will increase.

Citizens of Tartu can decide how 140,000 euros – about 1% of the annual investment budget – should be spent. The investment funded should be:

- an object (building, monument, statue, fountain etc.) on public city space so that as many locals as possible could get a part of;
- be achievable with a budget;
- be achievable within one year.

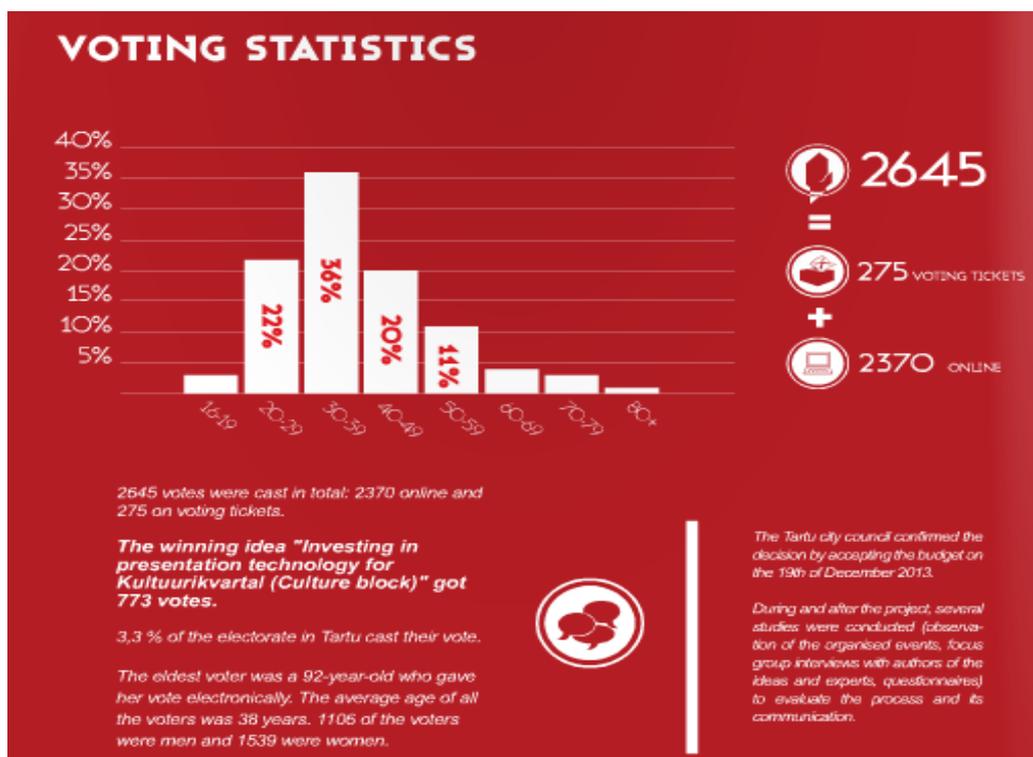
The service has been implemented in 2013, 2014 and 2015. For 2016 such a budget is expected to be increased to €150,000.

Inputs and Activities

The process consists generally of five stages:

- Collection of ideas (both offline as well as online methods are used). The ideas have to be related to city investments, and the cost of a project proposed should not exceed the limit proposed.
- Analysis by experts. During this stage experts analyse, consolidate similar ideas, comment and evaluate the content and costs and decide on eligibility.
- Presentation and discussion of proposals in public events.
- Voting by residents aged 16+; both traditional and electronic means are used.
- City council approves the decision and is committed to implement.

Figure 20 - Voting Statistics – Tartu Participative Budgeting, 2013.



Timing and Planning

In the case of Tartu, the pilot project was implemented in 2013. Already by 2014 some major changes were introduced. First, to provide the citizens with more opportunities to present and discuss their proposals, workshops were included to discuss the proposals, and those became an important part of the process. Second, the voting system was changed by giving every participant three votes, so that "small ideas" would have better chances. Third, instead of financing one project, two winning ideas are supported.

Outputs and Outcomes

In 2013 158 proposals were submitted in Tartu, 74 were evaluated as eligible; during the voting 2,645 votes were cast. "Investing in presentation technology for Culture Block" was the winning idea, and it was implemented in 2014.

In 2014 an upper limit of €70,000 per proposal was applied, and each person participating in the voting could vote for up to three ideas. 1,938 voters gave 4,029 votes for 25 eligible ideas. "More convenient sidewalks at intersections" and "Renovating barriers on the banks of Emajõgi" gathered most support.

In 2015 57 ideas were submitted, and 24 eligible ones were put to a vote. 3,772 voters participated (giving 6,929 votes) and gave most support to "Arena Tartu design" and "Eller's Amphora Theatre". The number of votes consisted of 3.3% of the eligible electorate (2013), 2.4% in 2014 and 4.7% in 2015.

The response to the introduction of the service in Tartu has been very positive. The related indicators – the number of people that voted as well as the number of people that actively participated in the debates – have improved when compared to 2013, but, most importantly, the level of public debate in proposing the ideas and discussing them has improved, as

confirmed by experts interviewed. Also, by the end of 2015 another 13 local governments have introduced such participatory budgeting processes in Estonia, based on the experience of Tartu.

Main Stakeholders Involved

In the case of Tartu Participatory Budgeting:

- the Tartu City Government as service suppliers;
- the residents of Tartu as beneficiaries;
- the Estonian e-Governance Academy. It is a non-profit information society think tank and consultancy established in 2002 with a mission to support the sustainable development of information societies through training, research and networking and act as an ICT think tank and competence centre. They have been the main advocates of participatory voting in Estonia.

Why the Service can be considered an OGS

Table 61 - Service Overview

Starting year	2013
Type of service	Open decisions
Key actors / stakeholders	Citizens, NGO
Number of impacted users	All inhabitants of Tartu. 4.7% cast their votes in 2015
Policy domain	General public service
Level of collaborators' involvement	Involved in the design, implementation and evaluation
Type of Collaboration	Based on the feedback of residents the system has been developed further. NGO has been involved in the design, implementation and monitoring.
Resources	Funded by the Tartu City Government

Openness

Tartu Participatory Budgeting is aimed at open decisions. Although in narrow terms it is about the selection of public-investment objects, the objectives of the service are much wider and aim at open decisions more generally: to increase awareness of the reasons and logic behind public budgeting so that decision-making within the city government will be understood better and trust for these decisions will increase.

Collaboration

In the development of Tartu Participatory Budgeting citizens were involved in the design on the service, especially taking in account their experience as users of the public service. Based on the feedback of the users, the system has been developed further.

An NGO has been involved in the design, implementation, monitoring and evaluation. The main motivation for collaboration with the external NGO has been related to the expert knowledge in the fields e-democracy and e-governance in specific organisations to increase credibility and legitimacy of the process.

ICT-enabled Innovation

Although once can cast a vote via the polling station in Tartu, more than 90% of the votes are cast using Estonian ID cards and the digital-signature infrastructure.

Costs-benefits analysis

Costs

Start-up costs of the Tartu participatory budgeting account for €28,662. System planning and development (€1,200) includes the development of methodology and scenarios, consulting with partners and the development of a communication plan. System acquisition and implementation (€8,442) includes the development of the special module to "VOLIS" (System for Local Democracy Procedures). Transition costs (€9,000) include personnel costs responsible for change management and the pilot-related communication campaign. Costs for running the system include personnel costs sustained for the daily system operations. Dissemination costs include costs sustained for promoting the diffusion and use of the service. Maintenance costs include costs sustained for maintaining the system. Other investment costs include additional investment costs sustained for upgrading and improving the service. Users are not expected to sustain considerable costs for getting informed about the service and for using the service, i.e. digital-signature set-up etc. The infrastructure for the latter is widespread in Estonia and a considerable share of active people is already using digital signature for other applications.

Table 62 - Cost Overview

Type of Costs	One-off costs	Operational/Other investment costs	
	2013	2014	2015
Start-up	€ 28,662	-	-
Operational²⁴			
Costs for running the system	-	€ 5,000	€ 5,000
Dissemination costs	-	€ 7,350	€ 7,800
Maintenance costs			
System Maintenance	-	€ 756	€ 756
Other investment costs			
Additional investment costs for scaling, upgrading or improving the service	-	€ 22,949	€ 960
Total costs per year	€ 28,662	€ 36,055	€ 14,516
Recurrent costs		€ 25,285	
<i>(average of operational and other investment costs)</i>			

Monetized benefits

Since Tartu Participatory Budgeting is aimed at improvements in democracy, transparency and community development, monetized benefits have not been in the main focus, and thus such benefits have not been monitored. Also, the baseline figure for a similar off-line participatory service is missing since it was developed as an online service from the beginning. Thereby we do not envisage financial benefits from the system, also taking into account the fact that it is

very unlikely that an offline service (e.g. traditional voting activities) would have been implemented instead of the online participatory budgeting.

Discussion

Start-up costs of the Tartu Participatory Budgeting accounted for approximately €29,000 in 2013. Due to system development in 2014 the costs were even higher that year, but are expected to be lower in the future, similar to the 2015 level. As the ID card-related infrastructure is widespread in Estonia and used daily, such costs should not be considered additional costs for users.

As already mentioned, there were not direct financial benefits from the system. However, with a wider use of the system and the inclusion of more online voters in the future the initiative will show clearer financial benefits. And, most importantly, the project aims foremost at improvements in democracy, transparency and community development, and thus monetized benefits have never been the main focus.

Non-monetized benefits

The benefits of participatory budgeting generally include democracy, transparency and community development.

Tartu's experience clearly demonstrates that such e-service can increase citizen empowerment (granting decision-making power) most of all by committing to the debate on grass-roots proposed initiatives.

The main objectives that were set in the beginning of the introduction of the participatory budgeting process were met according to experts interviewed. There is a better understating generally of the logic of public budgeting and of the limited public resources available. The decision-making processes within the city government are better understood, and trust has been increased. The cooperation of the various interest groups and the City Government has increased, and the overall readiness to participate in public policy has increased, as well.

The non-monetized benefits of the service are summarised in the table below.

Table 63 -Non-monetized benefits Overview

Category	Benefit	Examples
Efficiency	<i>Increase empowerment of civil servants providing the service</i>	This kind of services empowers civil servant as it increases the legitimacy of their actions. Moreover civil servants, by managing the service, are able to increase their engagement skills.
Democracy	<i>Improve access to and reliability of information</i>	More information about the logic of public budgeting and the of the limited public resource available
	<i>Enhance transparency and accountability of decision-making</i>	Decision-making processes within the city government are better understood, and trust increased
	<i>Enhancement in civic participation to policy making</i>	Citizens are empowered as they are able to take part to the decision-making process.

Future developments

Key Success Factors

In the case of Tartu participatory budgeting, the major barriers met were related to political resistance, finance and workflow of civil servants. First, the opposition accused the governing party of making the participatory initiative part of their election campaign; to address this, representatives of all political factions were included in the design process. The co-ordinating body was composed of city officials and politicians, and the involvement of Legal Department personnel was considered especially crucial to have legal processes supporting the participatory budgeting. Second, one of the concerns was related to the financial costs of introducing and managing the service. Based on detailed calculations to reimburse civil servants for their additional related work and to carry out the necessary public campaign, this fear was lowered; the annual costs were calculated to be only € 6,000. Third, there was a debate on the amount of money to be "given" to citizens to decide upon, but consensus emerged rather quickly to have the funds related to the infrastructure row in the city budget and to be related to the improvement of public spaces and specific objects (buildings, parks, etc.).

In order to overcome these and possible other problems, a politically neutral organisation that is also competent in the fields of e-democracy and e-governance – the Estonian e-Governance Academy – was involved as an external expert organisation, managing the whole process. This increased the credibility and legitimacy of the process among different political parties as well as citizens.

Barriers

In the case of Tartu the main barriers – political resistance, financial pressures and additional workflow of civil servants – were addressed before the launch of the service.

Lessons learnt

One of the key lessons from the Tartu Participatory Budgeting is that there is interest on the part of residents in participatory budgeting, and residents are willing to invest their time once they see that the Government is committed and takes the results seriously. It is important to overcome possible political resistance and to present such e-services as politically neutral. In setting up the process, credibility and legitimacy are important factors to consider, and it might be necessary to involve external experts heavily in the design and implementation of such innovative processes.

Future of the service

In the case of Tartu Participatory Budgeting the following areas are considered to be the most important ones to focus on in the future: (1) Improved media coverage to achieve higher participation by the residents. That was already prioritised in 2015, and the increased turnover reflects the importance of this. It is also considered important to increase overall awareness of city governance and especially of the investments by the city; that might also increase participation. (2) The annual kick-off event should not be related so much to the technical and administrative aspects of the process, but rather to examples from other cities how such investments have impacted positively the quality of life in other cities. It would be great to have more "out-of-the-box" ideas submitted to the idea competition. (3) It has also been proposed to increase the investment budget decided upon. (4) Many activists have been identified in presentations and discussions of those projects and could be involved in other city-planning-related initiatives. (5) It is also important to give a signal that not only winning ideas matter, but other proposals that gain considerable support are also important and could be advanced by civil servants/politicians.

Conclusions

Tartu's experiment with Participatory Budgeting since 2013 shows positive results as it shows residents' willingness to invest their time to propose, discuss and vote over public investments. Although the Cost-Benefit Analysis shows negligible results, it is still highly encouraged to introduce such initiatives elsewhere as it brings along improvements in democracy, transparency and community development. It is also important to foresee possible problems, possibly related to political resistance, financial issues and additional workflow of civil servants, but these risks can be mitigated with proper risk management.

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List of experts interviewed

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Executive Summary

Parlement et Citoyens (PetC) is a platform where Members of the Assemblée Nationale (the French Parliament) publish their proposal for feedback and enrichment by the people before they are discussed in Parliament.

It has achieved high rates of participation with thousands of citizens involved. It has been reused for dedicated consultation, such as the government consultation on the Digital Strategy (Republique Numerique) with equally impressive results. It has also managed to reach out beyond the "usual suspects", with half of participants reporting "some" or "no" interest in politics. It is having a direct impact on the policy making process.

Background and Rationale

Background

Parlement et Citoyens (PetC) was launched in 2013 by a group of citizens and developers, after a long building up process. Cyril Lage, one of its founders, worked in the French Parliament in 2009 and identified some weaknesses in the functioning of the legislative process. After joining forces with a service designer (Le Coz) and two developers (Jaillot and Pedrisat) they created in 2012 an association, Democratie Ouverte, with interested citizens from other French speaking countries. They organised a Barcamp in 2012 in the Assemblée Nationale and then included in the process a set of policy organisations, such as think tanks and foundations. The final version of the platform was officially launched together with organisations and Members of Parliament on February 2013.

At the same time, a private company was set up (Cap Collectif) to develop and manage the commercial offering of the same engagement platform, thereby covering the development and maintenance costs.

Needs Addressed

The platform aims to address two interrelated issues:

Closed policy making:

The legislative process remains largely a closed process, involving only politicians and professional lobbyists. The input in the policy making process is limited to those with high interest and investment in influencing policies. This lowers both the legitimacy and the quality of the policies implemented.

Citizens' lack of trust in political representatives:

As a result, citizens increasingly mistrust politicians and believe they are only motivated by greed or power. Citizens turnout is persistently low, and populist parties are on the rise in France and across Europe. This leads to an increasing ideological and partisan policy debate.

Description of the Service

Objectives

The service aims at:

- improving the quality of public policies, by leveraging collective intelligence: more and better ideas through a craftily designed methodology.
- Reinforce the legitimacy of legislation, by opening up the processes beyond professional and lobbyists.
- Increase the trust of citizens towards policy-makers.

The goal is not to introduce elements of direct democracy, but rather to improve the quality of policy-making by making use of collective intelligence.

Inputs and Activities

PetC is an online platform where MPs publish their policy proposals, structured as problem, drivers and impacts.

Any citizen can argue for or against, propose modifications, vote the proposals of fellow citizens.

The platform provides advanced analytics of the results, through a "cartographic" visualisation. The analysis is carried out manually, based on these analytics, directly by the staff of the MPs.

The platform is free for use by MPs. Democratie Ouverte provides also a "service design" methodology to help MPs running their engagement activities.

MPs, on their side, have to ensure the animation of the discussion, and engage with the principles of the platforms, which require them to provide feedback on how they have used the input received. They often organise live events in parallel to the existing online consultation: for instance, in the case of "Republique Numerique", 2 interactive workshops have been organised.

The platform is free for use by citizens and NGOs. There are volunteers providing online engagement services during the consultations.

However, should any organisation beyond the Parliament wish to set up a similar platform for collective intelligence, they should contract the startup "Cap Collectif" which owns and manages these services, and funds the development of the platform. Republique Numerique is one of these cases.

The design of the service is particularly interesting insofar:

- it structures the discussion alongside the traditional policy analysis causality links, such as problem, causes and solutions.
- The contributions are visually organised in terms of for or against
- The contributions are both qualitative (textual) and quantitative (votes). Voting is possible on the original proposal and on the suggested modifications
- There is an analytics service that helps MPs to assess the comments, tag them and reuse.
- All participation data are provided to the organisers as open data
- MPs and government have to engage to provide feedback at the end of the exercise to the contributors, through a report and in some cases through a live online discussion.
- The platform holder have defined a very structured engagement methodology to support the online engagement, but the animation itself is carried out by the organisers.

Overall, the platform is considered very usable. 80% of participants consider the platform easy or very easy to use. However, MPs declare that it is still difficult for participants to fully grasp the complexity of the policy topic.

Timing and Planning

Staff members worked voluntarily for 2 years on the design, implementation, support and additional development of the system. The total estimated investment in the platform is € 500,000.

Finally, the system went public in 2013.

Outputs and Outcomes

Since the beginning of 2013, 9 consultations have been published in the platform by MPs, and the government has used it for a large scale consultation on the national digital strategie, called "Republique Numerique".

The participation data are remarkable:

Table 64 - overview of participation data

Consultation	Contributions	Votes	Users
<i>How to rebuild local democracy?</i>	422	2159	383
<i>Draft Constitutional Law of the Nation of protection</i>	554	8776	1636
<i>Bill for the reconquest of biodiversity, nature and landscape</i>	2049	51516	9334
<i>collaborative economy: challenges for our model of society?</i>	313	779	145
<i>Open data: free public data</i>	312	1153	159
<i>Republique Numerique</i>	8500	147710	21130

There are more than 22.000 users registered in the platform. The vast majority are private citizens, but there are also 250 NGOs and 24 MPs using the platform. These data do not include the "Republique Numerique" consultation, which had a self-standing platform with more than 20.000 users.

The contributions presented by users have a direct input in the proposed legislation. MPs and government have to provide feedback, at the end of the consultation, about the main modifications made following the input received. For instance, in the case of "Republique Numerique", 90 contributions have been integrated in the law proposal following the consultation. More concretely, 6 proposals have made a particular difference:

- opening up public algorithms used by governments in taking decisions;
- shortening the embargo period on research data funded by public programmes
- increasing the sanctions over non release of government data
- providing a special status to e-games competitions, exempt from the lottery regulation
- the right for citizens to host own servers (avoiding restrictions by Internet Service Providers)
- greater span of measures for the accessibility of websites

The follow-up satisfaction survey carried out for Republique Numerique showed high levels of satisfaction. Only 5% declare they will not participate in other consultations after this experience. 70% report they are very likely (7 or more out of 10) to recommend the consultation to friends and 50% have shared links to the consultation on social networks.

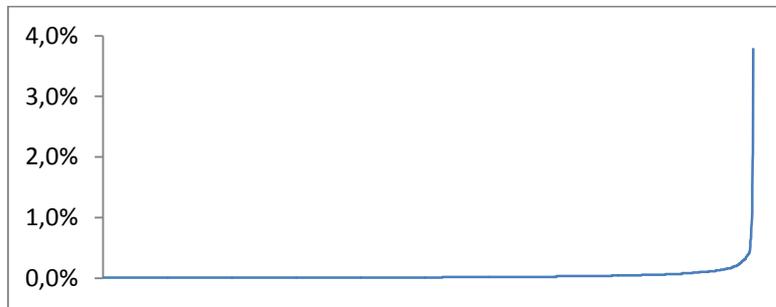
Further analysis on the contributions provided by users has been carried out by the mean of statistical analysis. More precisely we investigated how the contributions (and in particular the comments) were distributed across users. Moreover we also investigated to what extent the comments provided were positive or negative. The software used for the analysis is STATA/SE version 12.0, and R version 3.3.0.

After data cleaning, the number of useful contributions amounted to 8848 comments from 2355 contributors. The distribution of the frequency and percentage of contributions by contributor are displayed in Figures 20 and 21.

Figure 22 - Distribution of Contributions: Frequency

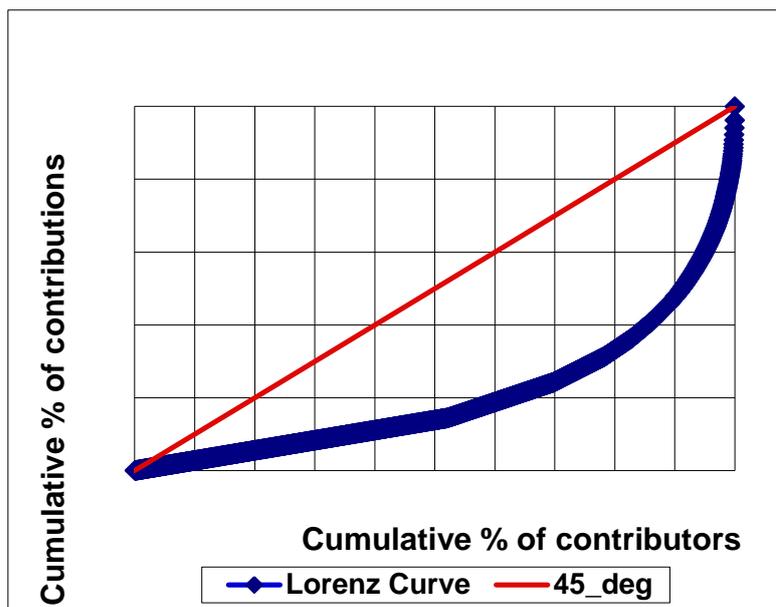


Figure 23 - Distribution of Contributions: Percentage



As we can see the distribution is very skewed, meaning that few users provided a great share of the contributions. In fact, a single user provided more than 300 contributions (almost 4% of the total). Moreover, the top 1% contributors provided over 20% of contributions, while the top 5% contributors provided over 40% of contributions. This pattern is confirmed by a high value of the Gini index (0.8), and by the estimation of the Lorenz curve provided in Figure 22.

Figure 24 - Lorenz Curve for PetC Platform Contributions

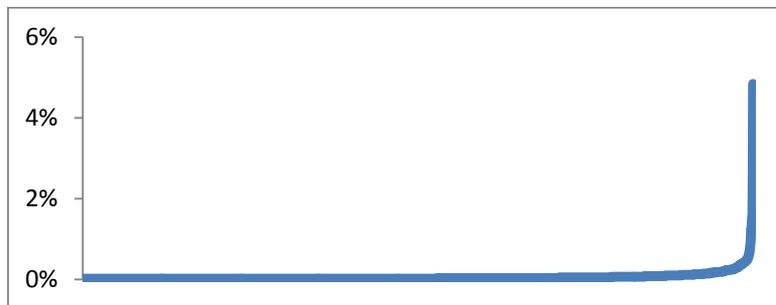


Decomposing the contributions by category, we have 71% of comments, 8% new proposals, 16% request of modifications and 5% new sources for discussion added. Furthermore 49.3% of comments were positive, almost half. The distribution of the frequency and percentage of comments by contributor are displayed in Figures 23 and 24.

Figure 25 - Distribution of Contributions: Frequency

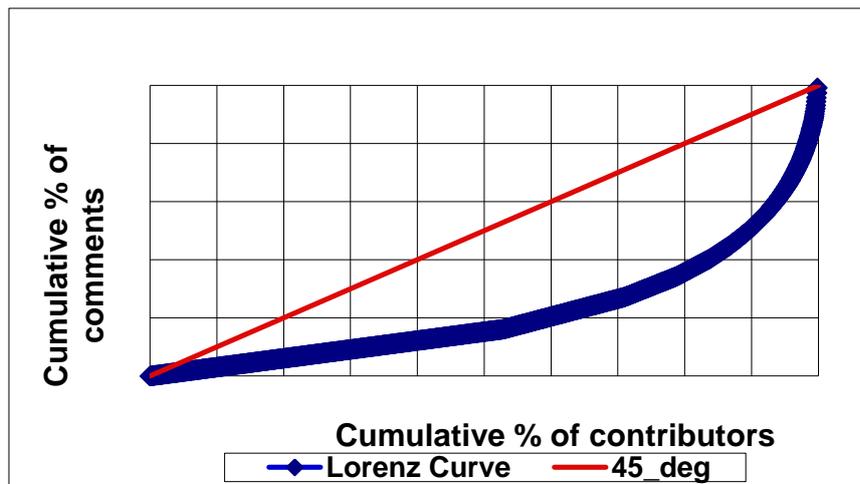


Figure 26 - Distribution of Contributions: Frequency



Also in this case the distribution is very skewed, meaning that few contributors provided a great share of the comments. In fact, a single user provided almost 300 contributions (almost 5% of the total). Moreover, the top 1% contributors provided almost 20% of contributions, while the top 5% contributors provided over 40% of contributions. This pattern is confirmed by a high value of the Gini index (0.78), and by the estimation of the Lorenz curve provided in Figure 25.

Figure 27 - Lorenz curve for PetC Platform Comments



Main Stakeholders Involved

The beneficiaries of the service are both citizens and Members of Parliament, who can use a simple platform and structured method to co-design law proposal. The service relies heavily on the collaboration of the existing participation institutions; MPS and NGOs have been strongly involved from the very beginning.

The animation relies on the work of these players. MPs reach out to their traditional constituency, such as NGOs, asking them to use the platform in order to communicate with them and to disseminate the online consultation in their members, obtaining thereby a "snowball" approach.

With regard to the type of participants, the platform appears successful in reaching out "beyond the usual suspects". Republique Numerique, for instance, for the majority of participants (60%) was the first time they read a law proposal, and only half of participants declare to be "very interested" in public policy. The majority of participants are young (40% below 34) and with university degree (80% of the cases) and men (76%).

Barriers

The main barrier rests with cultural reluctance, both by citizens and parliaments, and with the cultural distance between them.

Despite its high participation rates, the platform remains used by a minority of MPs, on a minority of law proposals.

Online collaboration remains difficult: for citizens, it is difficult to understand the technicalities of a law proposal; for MPs, it is difficult to make sense of thousands of contribution and make people understand what is needed.

In other words, while PetC has managed to successfully overcome the barriers to ensuring adequate quantity of participation, also beyond the usual suspects, it hasn't managed to solve the issue of low quality of input.

Why the Service can be considered an OGS

Table 65. Service Overview.

Starting year	2013
Type of service	Open e-Government Service
Key actors / stakeholders	NGOs, in collaboration with MPs
Number of impacted users	Potentially the whole French population
Policy domain	Democracy
Level of collaborator/s involvement	Implementation cred
Type of Collaboration	Open Collaboration (voluntary)
Resources	Skills and knowledge

The service has been launched by individual citizens, organised in a news NGO, without public funding and independently from government, in partnership with existing NGOs and MPs.

Openness

The **openness** dimension characterised by the fact that law proposals are readily available on the portal and can be accessed by every citizen or institution.

Collaboration

The **collaboration** dimension defined by the active participation of citizens envisaged by the platform which enables them to revise and provide input in law proposals.

ICT-enabled Innovation

The **technology dimension** is represented by the central role played by the online platform of PetC.

Costs-benefits analysis

Costs

Overall, the development of the platform is estimated to have a cost of €500.000. Today, the maintenance and improvement are covered by the revenues of the start-up Cap Collectif

Table 66 - Cost Overview

Type of Costs:	Set-up Year
	2011-2015
Set-up	€ 500,000

The platform is free for use by the MPs and the citizens. Any other organisation willing to use it has to pay a fee.

MPs remain in charge of the online dissemination of the consultation. However, this does not appear to be very time consuming: it requires them to send several emails to their constituents, asking to disseminate the consultation. The consultation requires, overall a day of work during the 30 days-long consultation by MPs staff.

Much more time consuming appears to be the analysis of the data. MPs staff dedicate 1 or 2 days, but only because of lack of time. A proper analysis would require about 10 days of work for analysing about 2,000 contributions. Overall, such a consultation implies adding about one and a half month to the legislative cycle.

The work on the platform does not appear to substitute traditional ways of engagement. MPs still have to adopt the traditional means of discussion (in person and through email) to gather the feedback from their community. As such, the platform implies a net increase of workload of about 15 person days, and a delay of 45 days, for each consultation.

As such, using the platform entails additional workload for MPs, as well as for citizens.

However, this compares well against existing benchmarks for participation. It is well known that the EU eParticipation projects entailed a total cost of about 550 per citizens intervention (comment/votes). Even considering the € 500,000 as a cost, entirely covered by the

organisation, the existing consultations on PetC would come at a cost of €130 per comment, and €7 per vote, therefore very effective in cost/benefit ratio.

Republique Numerique:

Beside the € 50.000 for the platform services, the Government devoted additional dissemination actions worth € 10.000 .

When it comes to the work carried out internally:

- 3 members of the Cabinet devoted 10% of their time in 2 months preparation phase
- During the **consultation**, for 1 month 6 members devoted 30% of the time, plus
- For the **analysis**, during 3 weeks, 6 members of the cabinet devoted 50% of their time
- In addition, in the analysis phase other ministries had to devote some time to review the comments, estimated in 20 people devoting 10% of their time for one month

In other words, for one consultation the human cost amount to about 40.000 EUR, assuming a monthly cost per qualified worker of € 6,000.

Monetized benefits

There are no monetized benefits as such. Interviewed MPs report that the crowdsourcing does not substitute existing lobbying, so that the work is additional to the traditional policy discussions and lobbying. The ideas received are considered not extremely new with respect to what was already known, so that the crowdsourcing was not immediately and concretely useful. With regard to Republique Numerique, the quality of the input was positive, and 6 ideas were directly used and included in the law; some contributions improved the existing proposals (e.g. including sanctions alongside new rules). The contributions directly improved the quality of the law proposal. However, this did not substitute existing consultations and analytical work, so also in this case there were no monetisable benefits.

Discussion

The project does not deliver positive monetary benefits, since it increases the workload for MPs and does not provide concrete short term benefits. The project does deliver impressive non-monetized benefits, in terms of participation, awareness and satisfaction. In this sense, the project is certainly cost effective considering non-monetized benefits in the medium term.

This is a traditional pattern for open policy / e-participation initiatives and should not be considered negatively. Of course, the greatest visible impact was on issues directly related with technology (i.e. Republique Numerique) for which the stakeholders are probably keener to participate online.

Non-monetized benefits

The project delivers substantial non-monetized benefits, in terms of raising awareness about policy issues among a far wider circle of citizens.

Thousands of citizens are taking an active role in policy-making. Citizens express their high satisfaction, only 5% declare they will not participate in other consultations after this experience. 70% report they are very likely (7 or more out of 10) to recommend the consultation to friends and 50% have shared links to the consultation on social networks.

There is also a positive benefit in terms of kind of participants: for the majority of participants (60%) was the first time they read a law proposal; half of participants were not "highly interested" in politics and 5% didn't even vote.

In the long term, the service is increasing trust in parliament and policies.

The non-monetized benefits of PetC are summarised in table 3.

Table 67 – Non-monetized benefits Overview

Category	Benefit	Examples
Effectiveness	<i>Increase in inclusiveness of services</i>	The service empowers every citizen to provide input to the decision-making process
Efficiency	<i>Increase empowerment of civil servants providing the service</i>	This kind of services empowers civil servant as it increases the legitimacy of their actions. Moreover civil servants, by managing the service, are able to increase their engagement skills.
Democracy	<i>Enhance transparency and accountability of decision-making</i>	Clearly the decision-making process is under a deeper scrutiny and it is more transparent
	<i>Enhancement in civic participation to policy making</i>	A lot of citizens that before did not take part in politics because discouraged or not interested, and some citizens that before did not even vote, thanks to PetC are able to take part to policy making



Di@vgeia program

www.crowdpolicy.com

Di@vgeia, Greece

Executive Summary

The enhancement of democratic processes is becoming a crucial priorities for many countries across Europe. Within this framework the Di@vgeia programme aims at increasing civic participation in the democratic process along with opening up public institutions to the civil society by making it more transparent and accountable for its actions. The Di@vgeia programme makes use of ICT tools such as an online platform where both central and local public administrations could upload documents and processes in order to enable citizens and businesses the get access to them in an easy and user friendly way. The commitment and vision of the central government has been crucial for the successful development and implementation of the initiative. Several benefits have been achieved by the platform, both in terms of cost savings on reduced paper-prints along with more non-monetized aspects related to the aforementioned enhancement of the democratic process.

Background and Rationale

Background

The Di@vgeia Programme was initiated by MAREG (Ministry of Administrative Reform and e-Government) following the approval of the Law 3861/2010 by the Greek Government. The Programme forces all government institutions to upload their acts and decisions on the Internet with a specific focus on issues related to national security and sensitive personal data. Di@vgeia can be considered as an open government best practice and has been presented to many European and international conferences, receiving very positive feedback. In Greece it is considered a model for the design of future e-Government interventions, both at an organizational and a technological level.

In June 2014, the Di@vgeia II portal has been implemented and launched with renovated communication and participatory tools, in order to enable a greater user interaction and engagement.

Needs Addressed

Different types of needs have been addressed by the introduction of the programme. More specifically, among the most relevant it can be accounted:

Citizens' engagement:

The Di@vgeia database enable citizens and businesses to get access to a wide range of information. In addition, taking into consideration that the Greek crisis has been determined, among other things, by the non-transparent relationship between the citizens and the state, the Di@vgeia Programme enabled high standards of transparency within all levels of Greek public administration. This initiative has a deep impact on the way officials handle their executive power. The radical transparency that the Di@vgeia Programme introduces reduces corruption by exposing it more easily when it takes place, since any citizen and every interested party enjoy the widest possible access to questionable acts.

Furthermore, its open architecture allows for the dissemination and re-use of Public sector information: indeed, a number of applications have been built by citizens and private companies on various platforms upon the transparency open data access tool.

Maladministration control:

The Di@vgeia portal is a great tool for monitoring and control, used also by Greek Controlling Bodies for checking cases of illegality and maladministration in the public sector. The Controllers working for the Inspectors-Controllers Body for Public Administration (I.C.B.P.A.) have access to reports from the Di@vgeia portal in order to monitor legality and good administration in public legal entities.

Description of the Service

Objectives

The programme entails several objectives and goals. Among the most relevant it can be accounted:

- The safeguard of transparent government actions and decisions
- Eliminating corruption by exposing it more easily when it takes place
- Monitoring of legality and good administration
- Enhancing and modernizing existing publication systems of administrative acts and decisions
- Reinforcing Greek citizens' constitutional rights, such as the participation in the Information Society
- Enhance accessibility and comprehension of administrative acts for citizens
- Enable the possibility to provide open data to citizens and businesses for analysis and potential use.

Inputs and Activities

The Di@vgeia Programme works by obliging public institutions to publish acts and decisions online with each document digitally signed and linked to an Internet Uploading Number (IUN), which certifies that the decision has been uploaded on the Portal. The technological implementation model of the platform has been based on an agile strategy with "open content" and "open architecture" that enable citizens and other private actors to generate their own applications and services via the program's open content API. The whole platform has been developed in-house by the Greek Research & Technology Network via an open source software. The system is supported by existing ICT infrastructures already owned by the public sector. It is also worth to mention that besides the ICT components the system can be also perceived as including relevant legal frameworks, operational processes and other technological instruments.

In 2014 the MAREG decided to launch a new and updated version of the portal, named Di@vgeia II which enhances: user inclusion especially for those with disabilities, search via new portal search-mechanisms, new online communication channels.

Timing and Planning

A total of 12 staff members worked voluntarily for four years on the design, implementation, support and additional development of the system. More specifically the design phase lasted for 2 months to which followed the adoption by the Greek Parliament of the Law 3861/2010. The development phase lasted for 2 more months leading to 1 month of testing and 1 month of pilot phase.

Finally, the system entered into the production phase. Different production paths were followed by the different authorities involved. More specifically:

- Ministries: 4 months after the enforcement of the law
- Overall Public Sector and other independent authorities: 1 months after Ministries
- Regional and Local Authorities: 6 months after Ministries.

Several additional initiatives were also launched in order to support the uptake of the system. An education programme lasting 9 months was held across the different regions targeting legal, administrative and technical issues using the platform. Moreover, different social media were also chosen as preferred channels for publicizing the materials posted online on the Di@vgeia website. Moreover, in 2014 the above mentioned Di@vgeia II portal was also launched.

Outputs and Outcomes

Since the beginning of the Programme, 12.600.00 acts and decisions have been uploaded on the Di@vgeia portal and 4.157 public authorities have been involved. A total of 36.500 public servants have been involved as active users with a total of 16.500 uploads per working day.

Main Stakeholders Involved

The beneficiaries of the Programme are all Greek citizens and business who need to exercise their constitutional right to be informed, as well as all public servants who need to use public acts and decisions on a daily basis as part of their work. In particular, thanks to extensive amount of public users Di@vgeia can be regarded as the most extensively and widely used public application. A dynamic human network of project task forces (more than 4.000 people) has been activated nationwide during the implementation phase of the platform, to share strong authority to coordinate and educate their associates, as well as to communicate the merits of the Programme. The network has contributed to the rapid spread of the new values of transparency, responsibility, accountability, participation and collaboration.

Barriers

One of the major barrier concerning the adoption of the system is related to change management and to the need to push all the different public bodies to actively participate in the successful development and deployment of the platform. The public administration is often characterised by a conservative organisational culture adverse to radical changes. Therefore, the adoption of a system which forced public institutions to open up their documents to the general audience proved to be especially difficult.

Why the Service can be considered an OGS

Table 68 - Service Overview

Starting year	2010
Type of service	Open e-Government Service
Key actors / stakeholders	Public administration
Number of impacted users	Potentially the whole Greek population
Policy domain	Democracy
Level of collaborator/s involvement	Implementation

Type of Collaboration	Open Collaboration
Resources	Many eyes many hands

Source: authors' elaboration

Openness

The **openness** dimension is defined by the readily available information and data on the portal that can be accessed by every citizen or institution.

Collaboration

The **collaboration** dimension is defined by active participation of citizens in monitoring the publications of documents and acts along with the possibility to report potential maladministration issues.

ICT-enabled Innovation

The **technology dimension** is characterised by the online platform of Di@vgeia along with its implementation Di@vgeia II which upgraded some of the previous functions along with implementing new ones.

Costs-benefits analysis

Costs

Initially, no investment costs were sustained for the development, implementation and support of the system. Everything was sustained thanks to the internal resources of the public administration. Some relevant costs were instead sustained for the Di@vgeia II platform, amounting to a total of € 1,700,000 for the design, implementation and production phase (including both the software and hardware components).

Table 69 - Cost Overview

Type of Costs:	Set-up Year	
	2010	2013
Set-up	€0	€1.7 M

Source: authors' elaboration

Monetized benefits

One of the major benefits obtained by the introduction of the service has been the savings generated from the reduction of printed documents. Thanks to the Di@vgeia programme public institutions are obliged to upload documents on the portal in order to make them reusable by citizens. By uploading the documents in an electronic format it is possible for public institutions to directly reduce the costs for printing. Thereby the monetized benefits stem directly from the technology and openness dimensions leading to the opening-up of data. More particularly the technology dimension is given by the use of the ICT platform to store the documents, while the openness dimension is defined by the readily available information and data on the portal that can be accessed by every citizen or institution.

It has been calculated²⁵ that the Greek Ministry of Development for one process/document uploaded saves an average of approximately 130,000 paper-print per month. By considering an average cost for all consumables for just one-print to be around € 0,21²⁶ it can be estimated that the overall monthly savings in terms of printed paper for the Ministry of Development amount to € 27,300 and yearly savings of € 327,600. The overall yearly savings for 16 ministries would amount to € 5,241,600 which multiplied for the 5 years since the programme has been operational account to € 26,208,000.

Table 70 – Monetized benefits Overview

I.e. of benefits	Calculation method	Quantification
Direct Cash	<p>Reduced data transaction costs: € 327,600 (yearly savings from Ministry of Development) x 16 (overall number of ministries) = € 5,241,600 € 5,241,600 X 5 (number of years since the program has been operational) = € 26,208,000</p>	<p>€ 26,208,000 for 5 years</p>

Source: authors' elaboration

Discussion

The Di@vgeia service enabled the Greek government to achieve substantial benefits, especially in terms of the overall reduction of paper costs following the digitalization of the procedures. Worth pointing out is that only via the cost savings achieved from a reduction in printed papers in all the ministries across Greece it was possible to fully repay the investment and development costs for both the Di@vgeia and Di@vgeia II platform. No data were available in relation to other administrations paper reductions, however if also these other figures were included into the calculations the savings would have been even more relevant.

Non-monetized benefits

Several non-monetized benefits can be recorded in relation to the Di@vgeia system. The table below categorize the main non-monetized benefits achieved by the service:

Table 71 – Non-monetized benefits Overview

Category	Benefit	Examples
Effectiveness	Increase in inclusiveness of services	Thanks to the materials uploaded online it is possible for everyone with an internet connection to get access to all the documents; therefore inclusion and empowerment as well as access to information are enhanced via the Di@vgeia service.
Democracy	Enhance transparency and accountability of decision-making	By publishing official documents and acts online it is possible for every Greek citizen to constantly monitor the activity of policy makers and eventually report potential cases of maladministration to the relevant controlling bodies.

²⁵ According to the data provided by the case representative

²⁶ <http://www.office.xerox.com/latest/OPBFS-13>

	Enhancement in civic participation to policy making	Policy making is also improved thanks to a better scrutiny of the public of the decisions made
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Source: authors' elaboration

Future developments

Key Success Factors

One of the key success factors of the service is related to the will from the political entities to deeply change the culture inside the Greek public administration by opening it up to citizens and therefore making it more transparent and responsible. Another key success factor is also represented by the open data functionalities of the programme which enable citizens along with businesses to get access to a wide range of data and develop applications on various platforms. Finally, the significant reductions in terms of costs achieved can be also regarded as another key success factor of the Di@vgeia programme.

Lessons learned

Several lessons have been learned as a result of the development and implementation of the service. Among the most relevant it can be accounted:

- Necessity of change management in the public administration context
- Importance of communication
- Importance of listening to both public servants and citizens
- The necessity for a clear vision and strategy from central Greek governing institutions
- Importance of using the talent and dedication of employees along with providing full autonomy to the project team.

Future of the service

Besides the recent launch of the Di@vgeia II portal other actions were also taken by the Greek authorities especially in relation to legislative interventions. More specifically, the MAREG has recently taken the following actions concerning the Programme's policies and tools:

Strengthening the Programme through Law 4210/2013 (O.G. A' 254)

Here below the main regulatory actions:

- Acts are valid and enter into force only after they have been uploaded on the Di@vgeia portal
- The uploaded document prevails over all other versions of the act
- Uploaded acts can be used by citizens and the other public authorities without validation, by solely referring to their IUN.

Among other short term future plans of the Di@vgeia Programme it can be accounted: the development of strong reporting tools, the standardization of all public documents as well as the creation of a single public authorities' registry, complete with contact details and important collective administrative and financial information.

Conclusions

The Di@vgeia portal represents a successful case of ICT technologies used for enhancing the participation of citizens and all the relevant stakeholder to the democratic life of a country. Moreover, the service can be also regarded as a valuable example of transparency and accountability in a country affected by chronic problems of lack of transparency between public institutions and the civil society. The international recognitions received by the service support also its value as a leading Open eGovernment Service at European level.

Sources:

Hellenic Republic: Ministry of Administrative Reform and Electronic Government 2014, Project "Di@vgeia" – The Transparency Programme, Information Document for the 2014 WITSA Global ICT Excellence Award.

Hellenic Republic: Ministry of Administrative Reform and E-Governance 2014, Di@vgeia – The Transparency Initiative in Greece.

List of all project references interviewed

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NEM ID

NemID, Denmark

<https://www.signicat.com/>

Executive Summary

In order to improve the efficiency of public administration procedures it is becoming of crucial importance for both central and local institutions to exploit the benefit resulting from the development of ICT technologies. Within this framework, the NemID login service which has been developed and implemented in Denmark since 2003 goes in the direction of simplifying bureaucratic processes and administrative procedures for citizens and the whole civil society. The system enables Danish citizens to access a wide range of public administration's services but also online banking and tax services by entering an individual user name, password and code. In spite of the overall capitals invested in the system, a large volume of monetized benefits has already been achieved especially in terms of data transaction savings resulting from the digitalisation of procedures.

Background and Rationale

Background

NemID is under the responsibility of the Danish Agency for Digitisation and the supplier Nets DanID A/S. It is technologically based mainly on JavaScript and Java. It has been introduced in order to improve communication between public institutions and citizens. The system can be categorized as an OCES (Public Certificates for Electronic Services or in Danish: Offentlige Certifikater til Elektronisk Service). OCES digital signatures are advanced electronic signatures under the notion of the eSignature directive. They are software-based with enforced password-protection, in order to ensure "sole control". Several public acts have been adopted by the Danish government in order to establish a legal framework that could boost the use of eGovernment services. Among the main acts it can be accounted the "joint eGovernment Strategy 2011-2015" and the "Act on Public Digital Post 2012".

Needs Addressed

The main needs that have been addressed by the introduction of the system can be mostly related to the enhanced interactions resulting from the digitisation of all relevant communication between companies, citizens and the public sector. Moreover, safety in internal and outside communication between public institutions and the civil society has been also addressed and improved thanks to the system.

Description of the Service

Objectives

The objective behind the creation of a country-wide digital signature is to enhance communication between the public administration and citizens. On the one hand, via NemID, physical documents are replaced with electronic ones accessible 24 hours/day along with other

public services. On the other hand, the overall efficiency and services provided by the public administration are enhanced.

Inputs and Activities

The overall system is made by two key components: a personal password and a code card with different codes to be used each time. In order to receive both the password and the code card it is necessary for citizens to provide their personal identification number (CPR) along with the number from their Danish passport. The system can be accessed from any device and requires only to enter a user-ID along with the above mentioned password and codes. A wide range of services can be accessed via NemID spanning from online banking to public authorities's self-service or tax authorities personal webpage. Moreover, the system enables an individual to be identified as an employee of a specific company and act on its behalf especially for communicating with public authorities, sign online documents, access information from a public authority. Similarly NemID can be also used for corporate online banking. The system is highly secure thanks to the different identification layers which therefore prevent potential intrusions from burglars or hackers.

Timing and Planning

NemID has been launched in July 2010, from a previous Digital Signature Services, implemented in 2003. The solution has been developed through 4 different phases:

- Design: this phase lasted 13 months and took a point of departure in identifying the areas of improvement from the previous solution along with involving users' interest groups in the design the solution.
- Testing: this phase lasted 6 months and was handled via a tendering process
- Implementation: this phase lasted for 18 months and involved the contribution of the Danish Agency for Digitalisation and the Centre for Digital Signature along with external assistance by consultants and NGOs for testing and evaluating NemID.

Diffusion: this phase lasted for approximately 9 months and involved the diffusion of the service across a population of about 3.5 million users.

Outputs and Outcomes

The use of the system has been steadily rising since its first introduction. Approximately more than 80% of the population use the system for online banking and for accessing online public services. In addition, more than 1.4 billion transactions have been made via NemID from July 2010 to September 2013. The table below show the overall number of end-users of the service in the 4 year period from 2013 to 2016.

Figure 28 - Users of the service

	2013	2014	2015	2016
Citizens	4,08 Mln	4,3 Mln	4,58 Mln	4,69 Mln
Businesses	N/A	482,000	558,000	548,000

Source: authors' elaboration

Main Stakeholders Involved

The service is available to Danish citizens living abroad and to some extent in Greenland and the Faroe Islands as well. Everyone in Denmark above the age of 15 is eligible for a NemID. Likewise, companies, organisations with any affiliation with Danish public authorities are eligible. The Danish financial sectors represents also one of the main stakeholders of the service. Its involvement led to a significant increase in users usability.

Barriers

Several barriers have been encountered while developing and implementing the service. Among the most relevant it can be accounted:

- Time taken for establish a large scale and effecting digital infrastructure
- Time taken for engaging citizens to use the system
- Maintain it trustworthiness via constant upgrades and developments
- Maintain it user friendly via additional interfaces and services

All the above mentioned barriers have been addressed with a continuative approach: before, during and after launch.

Why the Service can be considered an OGS

Table 72 - Service overview

Starting year	2003
Type of integrated solution	Open e-Government Service
Key actors / stakeholders	Citizens, PA, Private Companies
Number of impacted users	4.69 million
Policy domain	General public services, Economic affairs, Health, Education
Level of collaborator/s involvement	Design, Monitoring, Implementation, Evaluation
Type of Collaboration	Tournament based collaboration and open collaboration

Source: authors' elaboration

Openness

The **Openness** dimension is defined by the possibility for end-users to access different public administration services along with online banking. With the adoption of the eIDAS Regulation NemID could be also reusable, allowing Danes to access public online services of other EU Member States via their own eID.

Collaboration

The **Collaboration** dimension is defined by the different types of collaboration in the form of user test and citizen participation in the different phases. Moreover, a private supplier in cooperation with both the financial and the public sector has developed the system.

ICT-enabled Innovation

The **Technology** dimension of the system is defined by the ICT platform that has been developed in order to enable Danish citizens to access online services of the public administrations and banks.

Costs-benefits analysis

Costs

The table below provides an overview of the costs sustained for developing and running NemID. The one-off costs sustained in the start-up year (2007) refer to the planning and development of the necessary infrastructure for the implementation of the service, including among the others; hardware and software application development, IT training. Operational costs have been inserted under one single category, which includes: costs for running the system, costs for monitoring and evaluating the system, dissemination costs. Finally, the additional costs sustained for upgrading the system have been included under "other investment costs". Recurrent costs refer to the average yearly costs sustained across the last 4 year-term that has been taken into consideration in the analysis.

Table 73 - Cost overview

Type of Costs	One-off costs	Operational/Other investment costs			
	2007	2012	2013	2014	2015
Start-up	€ 150,000 ²⁷				
Operational²⁸					
Overall operational costs	-	€ 5,36 M	€ 5,36 M	€ 5,36 M	€ 5,36 M
Other investment costs					
Additional investment costs for scaling, upgrading or improving the service	-	€ 6,7 M	€ 6,7 M	€ 6,7 M	€ 6,7 M
Total costs per year	€ 6,7 M	€ 12,06 M	€ 12,06 M	€ 12,06 M	€ 12,06 M
Recurrent costs <i>(average of operational and other investment costs)</i>		€ 12,06 M			

Source: authors' elaboration

Monetized benefits

Among the main monetized benefit achieved by the implementation of NemID it can be accounted the savings in terms of data transaction costs especially in relation to a reduction in the use of postage and paper. Overall, it has been estimated by the National Agency for

Digitalisation that the above mentioned benefit amount to a total of 1 billion Kr (€ 134,363,994) annually. Clearly the monetized benefits stem directly from the technology and openness dimensions characterizing the use of electronic identity. In fact the system makes use of an ICT platform, enabling citizens to access online services of the public administrations and banks, while at the same time end-users can access different public administration services along with online banking.

Discussion

The overall costs sustained in the last four years (2012-2015) and start-up year (2007) for developing NemID amounted to € 54,94 M including the costs sustained in the start-up year, recurrent costs for the daily operations of the system along with additional costs for further upgrading and scaling of the system. The overall savings achieved by the implementation of the service account for a total of € 134,363,994 per year mostly generated by a reduction in data transaction costs. Therefore, the system enabled to generate substantial monetized benefits which fully repay the costs sustained for its development and running.

Non-monetized benefits

Thanks to the adoption of the system several non-monetized benefits were achieved, among the most relevant it can be accounted:

Table 74 - Cost Overview

Category	Benefit	Examples
Effectiveness	<i>Reduced administrative burden for the businesses/citizens</i>	Reduction of users travel time thanks to leaner and faster online processes.
	<i>Increase in the value that users receive from the service</i>	The system enhances communication between citizens and the public administration and enhanced services integration
Efficiency	<i>Better organizational, management and IT architecture of the services</i>	Thanks to the unified login system users can access different online services with the same credentials

Source: authors' elaboration

Future developments

Key Success Factors

Several key success factors can be highlighted in relation to the NemID system. The most relevant can be summarised as follows:

- Cost-effective roll-out since there is no requirement for physical presence and no requirements for special hardware or software
- No costs to be sustained by end-users
- A common standard which encourages easy and cost-effective development of eGovernment services
- The high levels of adoption which enabled the service to become mandatory

Lessons learnt

Among the main lessons learnt in relation to the development and implementation of the system it can be accounted the importance of partnering up and cooperate with end-users. Moreover, the importance of constantly improving security and other technical features proved to be another crucial lesson, especially in relation to the potential target for cyber- attacks represented by such a complex system.

Future of the service

Since the present NemID contract will expire at the end of 2017, the public administration is planning "the next generation of NemID". The future developments of the system are expected to retain the current successful elements along with integrating new ones. Among the main features that will be added in the future include:

- Improved administrative solutions for the different type of businesses using the service
- Extended and enhanced use of private NemID for business purposes
- Improved login factors which need to be adapted to different platforms including mobile ones
- Improved security levels and a separation between eID and electronic signature
- Improved privacy
- Improve online-support options in order to increase the user friendliness of the system and its overall accessibility.

Conclusions

The Danish NemID system represents an example of a successful implementation of ICT applied to e-social security and one of the best practices example in the Open eGovernment Services field. The service can be considered especially remarkable in relation to the level of diffusion and use across the Danish society. Moreover, the system can be considered as cost-effective with the overall savings achieved fully covering the expenses that the central administration had to sustain for its development. Finally, the possibility for citizens and private entities to collaborate actively to the successful implementation of the system can be also considered as another strength of the NemID service.

Sources:

Digitaliseringsstyrelsen; 2015, Next Generation Digital Signature, Available at:
<http://www.digst.dk/ServiceMenu/English/Digitisation/Digital-Signature/Next-Generation-Digital-Signature>

Digitaliseringsstyrelsen; 2016, Om Digital Post – til pressen, Available at:
<http://www.digst.dk/Loesninger-og-infrastruktur/Digital-Post/Om-Digital-Post-til-pressen>

List of all project references

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Executive Summary

Kublai is an open and collaborative environment consisting in a platform where creative individuals can present project ideas that can be discussed, refined, and developed into viable projects. The project has been initiated in 2008 by the Department of Development Policies of the Italian Ministry of Economic Development with the aim to help individuals that lack capability to gain access to funding both public and private, to turn ideas into real world social innovation projects with a concrete economic and employment impact at the local level. Despite limited monetary benefits, the project has provided a number of non-monetized services deemed very useful by users.

Background and Rationale

Background

At European level, or what concerns the support to start-ups, most of the initiatives are carried out by DG CONNECT, and focus on creating a more favourable environment for web entrepreneurs as well as on networking activities, providing access to contents and skills, and identifying and removing bureaucratic obstacles.

The most important activities fostered by the European Commission include:

- Tech All Stars, which aims to provide visibility to the best we European start-ups in order to favour relationships with potential investors, mentors, partners and venture capitalists;
- The crowdsourcing exercise launched on www.openideo.com, aimed at collecting ideas upon which building the activities necessary to support web entrepreneurs in the growth of sustainable businesses in Europe;
- The Web Entrepreneurs Partnership, including private companies offering web resources (mentoring, free hosting, free advertising) to web entrepreneurs.

Some other European institutions and DG that are developing initiatives relevant to Kublai are:

- DG ENTR: it provides supports to entrepreneurship projects (Erasmus for young entrepreneurs, education and training for entrepreneurship). Moreover, the DG has mapped the knowledge related to the state of the art and the evolution of entrepreneurship in Europe;
- DG RTD: in 2014 has launched the program COSME (Programme for the Competitiveness of enterprises and SMEs), which represents the continuation of the current Competitiveness and Innovation Programme (CIP);
- DG REGIO: ICT Regio is a set of Smart specialisation strategies fostered by regions, with the aim to develop an innovation strategy based on the involvement of local stakeholders and entrepreneurs since the design phase;

In order for innovative ideas to enter the market there is the need for additional support services for young entrepreneurs and start-ups in the early stages of development. The

accelerators converge the skills and experience needed to support growing businesses, to test new ideas, to encourage rapid learning within a community of innovators, and to establish a clear and defined path to boost the most promising initiatives.

Some examples are:

- Springboard, which is a program providing mentoring, seed capital, office space and a smart community composed of mentors and entrepreneurs;
- Startup Week end Europe: global movement including entrepreneurs willing to learn the basic elements for the foundation of start-ups and for the launch of successful initiatives;
- IAccelerator Academy, which is a program lasting 12 weeks and consisting in training and mentoring for digital entrepreneurs willing to grow their business;
- Seedcamp, which is a European leader in the field of mentoring and micro-seed investment. Since its launch in 2007, it includes 70 start-ups successful at European level;
- Startupbootcamp (SBC), a quarterly program of acceleration for start-ups in which participants learn how to fully exploit funding and market opportunities;
- Bethnal Green Ventures is a start-up accelerator that selects each year a small group of companies at the initial stage, and funds them with 15.000 Pound Sterling;
- Microsoft® BizSpark®, which is a global program helping software start-ups in achieving success through boosting partnerships and agreements with important industrial actors.

In the same respect initiatives supporting start-ups in Italy include:

- Hangouts online and events
 - Italian Startup Scene, meeting place for entrepreneurs, investors, developers, bloggers and everybody else interested in startups and venture capital;
 - Indigeni Digitali. Association of 5.000 members involved in the organization of events supporting the dissemination of digital and innovation culture;
 - Topix. Its development program provides infrastructural support (broadband, server, hosting, housing) to the startups using broadband Internet as main tool.
- Co-working, Fablabs, Maketspace, social incubators
 - The Hub (Milano, Bari, Siracusa), which is a co-working where entrepreneurs, creative individuals and professionals meet to share idea and cross-fertilize;
 - Officine Arduino (Fablab Torino): Fablab developed around the Arduino R&D department with the aim to foster digital fabrication and open source culture;
- Business Plan competition, startup events
 - Innovation Lab, which aims to teach academics the core elements necessary to understand the market potential of an innovative project, as well as how to present the idea in an effective way to investors and venture capitalists;
 - Bollenti Spiriti, project supporting young entrepreneurs initiated by Apulia Region. One of its initiatives, Principi Attivi, provides funding also to startups.
- Incubators and accelerators

- I3P at the Polytechnic University of Turin. This is the major Italian incubator engaged in the launch of new science-based companies with a high potential for growth. I3P provides consultancy services and a network of entrepreneurs, managers and investors;
- Area Science Park. This consortium is engaged in technological transfers. Its incubator and industrial park are within the synchrotron R&D area;
- The Net Value, Internet startup incubator providing support regarding management and strategy to companies aimed at developing projects in the digital world;
- H-Farm, venture incubator supporting internet startups by means of seed capital and incubation services;
- Annapurna Ventures, which aims to identify and support innovation in the digital media industry;
- Enlabs, which is an incubator and accelerator providing also co-working spaces.
- Early stage venture capital (1MLN+ Euro):
 - Principia SGR manages two investment funds mostly investing in Internet and other digital technologies;
 - Innogest, which is an 80 MLN Euro fund managed by Claudio Giuliano and Marco Pincirolì;
 - 360 Capital Partners, which has an endowment of 100 MLN Euro and invests in a variety of fields;
 - Eporgen, venture specialized in biotech and life sciences.

Problems Addressed

At the foundation of Kublai there is the recognition that funding for local development, particularly in the south, do not succeed in mobilizing local creative individuals, but rather the public financing professionals. Thereby too often public funding focuses on traditional and low risk projects. This issue creates a vicious circle in which the creative individuals do not have sufficient expertise in design, are not motivated to develop them because public financing is very bureaucratic and funding accrues to process experts rather than to real innovators. In this way the results of public funding competitions create further mistrust and sense of detachment. Traditional measures of animation and project design support have failed to bridge this gap. In this respect the main strategic objective of Kublai is to foster the growth of project design skills among the creative individuals, particularly in Southern Italy, in order to turn creative ideas into project proposals having a good chance to receive funding for local development. Thereby at the root of challenge faced by Kublai lies the ability to reach and engage an audience of creatives who typically is not interested in public funding. More in particular the target of the project has the following characteristics:

- A strong innovative capability and a high quality of project ideas
- Low capability to gain access to funding both public and private;
- Localization in southern Italy;
- Limited capabilities in turning ideas into projects.

Description of the Service

Objectives

The main strategic objective of Kublai is to foster the growth of project design skills among the creative individuals, particularly in Southern Italy, in order to turn creative ideas into project proposals having a good chance to receive funding for local development. The development of such skills is deemed to increase the capability of creative individuals to attract financial resources such as structural funds, and thereby to ultimately improve the impact and sustainability of the initiatives aimed to support innovative resources, rather than usual suspects.

More specifically the objectives of the initiative are the following:

- Improving the impact of structural funds;
- Improve user involvement in public funding;
- Provide creative individuals with the skills necessary to design and prepare a tender;
- Engage creative individuals in public financing programs through an informal and peer to peer approach.

Further objectives:

- Increase the number of users supported through peer to peer mechanisms;
- Mobilize new resources useful for the public administration;
- Transfer towards other initiatives the Kublai approach;
- Encourage the sharing of knowledge and ideas among the participants

Inputs and Activities

Kublai is a collaborative environment where project ideas can be discussed, refined, and developed into viable projects. It has been created in 2008 by the Department of Development Policies of the Italian Ministry of Economic Development to help good ideas turn into real world social innovation projects with a concrete economic and employment impact at the local level. Kublai does not stress competition amongst start-up projects, but aims at promoting exchange and establishing collaboration amongst people who share the common interest based on the assumption that innovation is always a collective process. Cooperation is free and voluntary: based on personal passions, interests, and life projects, each and every participant to Kublai's social platform can choose the most appropriate way to interact with others. The Kublai environment includes a dedicated staff actively assisting all the ongoing discussions and projects, and available to support all project proponents at every step of the drafting process through different tools: project threads, chatrooms, and live helpdesk sessions. Kublai does not award funds to start-ups, but advises and accompanies the deserving projects at the end of the process, to the sources of competitive funding most appropriate for them – both private and public. Only exception to this rule is the Kublai Award, which every year is given to the best social and territorial innovation project raised inside the Kublai community: the award aims at supporting the project promoter in the acquisition of consultancy and/or training services needed for project take-off.

Timing and Planning

The project has been initiated in 2008 by the Department of Development Policies of the Italian Ministry of Economic Development. Participation to the project has been very high in the first years but in 2011 and 2012 has drop dramatically due to a discontinuation in the animation activity due to management issues. In 2014 the Spanish consultancy Open Evidence carried out an evaluation of the project and a feasibility study aimed at providing recommendations

regarding the future set up of the project in order to ensure its sustainability. At the moment of writing the project is about to be relaunched with a new governance set up.

As for funding, in 2008 the project has been funded by the Laboratory for Development Policies of the Department of Development Policies (Laboratorio per le Politiche di Sviluppo), from 2009 to 2011 by the National Agency for inward investment and economic development of the Italian Ministry of Economy (Invitalia), and finally from 2012 to 2014 by the National Operative Programme Governance and Technical Assistance (PON GAT).

Outputs and Outcomes

For what concerns the output and outcomes of the service, we are presenting the take up in terms of registered users and projects presented in the platform and thereby supported, and we are also depicting the most important activities performed within the scope of the initiative. As it can be seen from the table below, the number of registered users, projects presented and comments in the platform reached their peak in 2009 and 2010, and decreased sharply in 2011 and 2012, while increasing again in 2013.

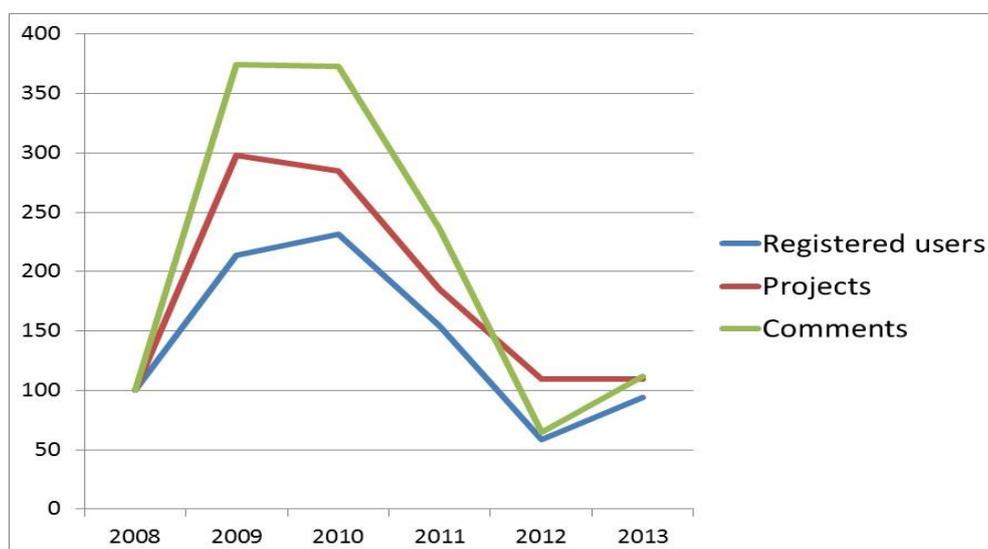
Table 75 - Users overview

Type of output	2008	2009	2010	2011	2012	2013
Registered users	453	967	1050	699	264	428
Projects	53	158	151	98	58	58
Comments	1266	4741	4719	2992	821	1420

Source: authors' elaboration

In total the platform had 3861 registered users that presented 576 projects and produced 15959 comments. The trends in the take up of the service are depicted in the figure below.

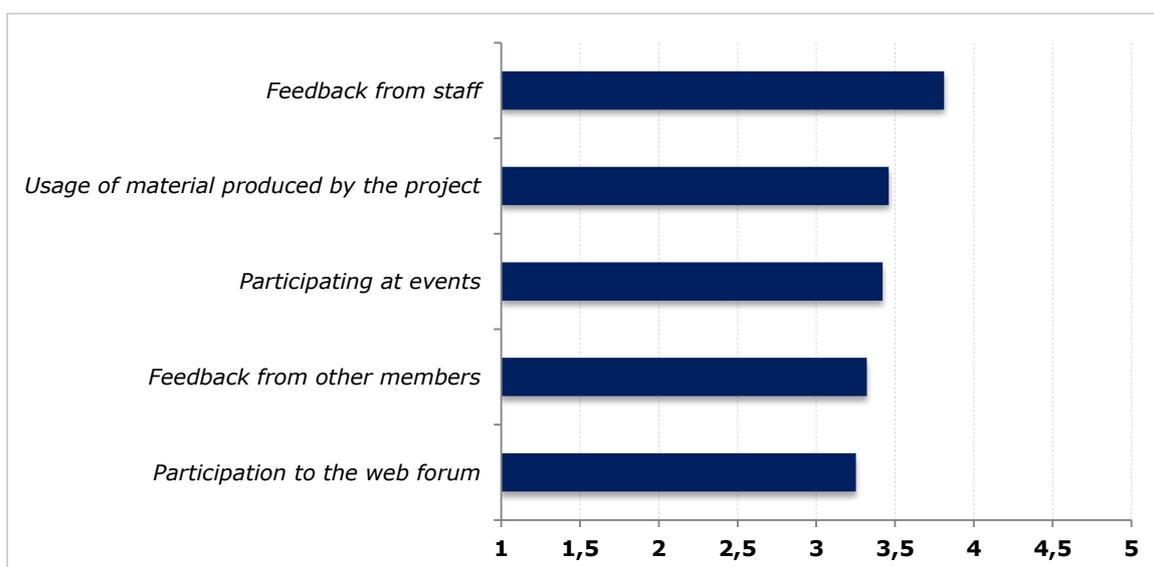
Figure 29 - trend in the take-up of the service



Source: authors' elaboration

For what concerns the participants to the project, most of them (58%) are older than 35, have at least a University degree (73%), are employed (67%) employed, of which 73% with at least 3 years of experience, mostly as independent. Participants declared that 54% of the projects presented became reality. Moreover, out of the projects that became reality, 90% are still active, and 53% constitute a firm. This shows that Kublai managed in avoiding opportunistic behaviours and in fostering the emersion of true projects. The challenge of peer to peer is met only in part, as 50% of users shared a lot of their knowledge, while 23% claimed to have shared in small measure. Moreover 39% of users claimed to have received more than what they have given, while 19% declared the opposite. Thereby the net effect is positive. Moreover 47% of respondents declared that without Kublai they would not have realised (or they wold have realised in a weaker way) the project. Furthermore, more than 80% of respondents would advise other peers in using the service, and 70% of respondents would present other projects in the platform. Finally, 30% of respondents would be willing to pay at least € 5 per month for the services received. Clearly the most important service provided is given by the feedback received from the staff, followed by the usage of the material produced by the project, and the participation at events. Fairly important are also the feedback received from other members of the community, as well as the participation to the web forum.

Figure 30 - Services received from the initiative



Source: authors' elaboration

Main Stakeholders Involved

The initiator of the project has been the Department of Development Policies (DPS) of the Italian Ministry of Economic Development. The current staff providing services to the community is composed by the following individuals:

- Criscia / Maria Cristina Di Luca - Community Manager
- Paola Di Lazzaro – Responsible for Communication
- Alfredo Fortunato - Coach
- Maria Bianco – Institutional Relations

The original members and founders of the community have been: Alberto Cottica, Marco Colarossi, Criscia / Maria Cristina Di Luca, Walter Giacobelli, Antonella Napolitano, Marta De Cinti (aka Mae), Giuseppe Granieri, Alfredo Scalzo, Tito Bianchi, Marco Magrassi. Finally, the coordinator of the activities on the behalf of the DPS has been until recently Tito Bianchi.

Barriers

As for the barriers to the project, they include:

- Limited concrete benefits
 - According to the users, benefits are limited in terms of new collaborations with the public administration and capability to obtain funding
- Limited capability of collaborating with other public actors or with agencies engaged in funding innovation
 - So far the Kublai model has not been adopted by other public administrations, and relationships with funders are occasional
- Limited buy-in and acknowledgement of Kublai's strategic importance within public administration
 - Limited endorsement of Kublai by the public administration
- Lack of a long-run strategy
 - Need for a revival of the project that actively involves the coaching team, users and the public administration in the development of a new strategy
- Success of the community linked to charismatic personalities
 - The loss of charismatic personalities such as the founder Alberto Cottica has had a strong impact on the intensity and the quality of the interaction
- Limited benefits stemming from the interaction with other participants
 - Concrete collaboration among participants has been sporadic
- The community is self-sustainable over time
 - Participation has differed a lot over time. After a "viral" spread, the level of participation has significantly decreased between 2010 and 2012, due to a discontinuity in the animation activity

Why the Service can be considered an OGS

In the table below it is explained why the service can be considered as an Open eGovernment Service.

Table 76 - Service Overview

Starting year	2007
Type of service	Support to entrepreneurship
Key actors / stakeholders	Department of Development Policies (DPS) of the Italian Ministry of Economic Development; staff supporting the community.
Number of impacted users	3861
Policy domain	General public services
Level of collaborator/s involvement	Leader and initiator of the project
Type of Collaboration	Open collaboration
Resources	Specific thematic knowledge

Openness

The openness dimension concerns the fact that all the information in the platform including comments, feedback and training material, is provided openly and for free.

Collaboration

Collaboration is given by the peer to peer support provided by the users of the platform to other users presenting a project by the mean of comments.

ICT-enabled Innovation

The technology dimension is represented by the central role played by the online platform of Kublai, which allows asynchronous communication. Synchronous communication tools such as Second Life have played another crucial role.

Costs-benefits analysis

Costs

Let us see now in the table below the structure of the costs. Clearly the costs are very low, with a start-up investment of € 248,616, and recurrent costs of € 298,225. The development costs for the platform were zero as the department used internal resources, thereby the start-up costs refer to personnel costs for hiring the first project staff (€ 166,000) and contracting a pool of experts (€ 7,500), as well as the costs of communication (€ 33,680). In the table below the costs are broken down into categories.

Table 77 - Cost Overview

Type of Costs	Start-up Year	Last 6 Years			
	2008	2009	2010-2011	2012-2013	2014
Start-up	€ 248,616				-
Operational²⁹					
Costs for running the system		€ 361,270	€ 179,457	€ 337,956	€ 204,216
Communication and dissemination	-	€ 10,000	€ 10,000	€ 90,000	
Recurrent costs		€ 298,225			

Source: authors' elaboration

²⁹ The costs provided are estimated from Oxfordshire County Council. monitoring and evaluating the system takes place as part of business as usual activities (staff time), dissemination costs include internal staff time (for example time taken for training and familiarisation with the system, which cannot be accurately measured)."

Monetized benefits

No official data from the case representatives have been collected in regards to the monetized benefits achieved by the use of Kublai to support prospective entrepreneurs. However, it has been possible to make some estimations by using data and information available via desk research. More specifically, as shown in the calculations below, it has been estimated the overall amount of costs that the Department of Development Policies would have spent to establish a "traditional" supporting system. An example of such "traditional" supporting system is for example the "Sportello Start-up" implemented by Sardinia Special Administrated Region, which provides a wide set of consultancy services to prospective entrepreneurs who want to open/established their activity in Sardinia. On the top of those services, the "Sportello Start-up" provides also financial support, while Kublai did not. Summarizing, the monetized benefits of the initiative stem directly from its peer-to-peer approach which substitutes the direct support provide by public administration officials.

From 2010-2011 data from the project we know that the total personnel cost has been € 169,457 for 336 working days, which makes € 63 per hour. Considering the number of comments per project as a proxy for the time dedicated to each project, and assuming 2 two hours spent by participants per each comment provided, we have that the total time dedicated to each project amounts to 55.4 hours. This considering the personnel cost computed above, would make a cost of € 2620 per project.

Table 78 - Tangible benefits Overview

I.e. of benefits	Calculation method	Quantification
Direct Cash	<i>Cost avoidance</i> <i>From project data we know that the total personnel cost has been € 63 per hour. Considering the number of comments per project as a proxy for the time dedicated to each project, and assuming 1,5 two hours spent by participants per each comment provided, we have that the total time dedicated to each project amounts to 55.4 hours. This considering the personnel cost computed above, would make a cost of € 2,620 per project</i>	€ 2,620 /project
Overall benefits achieved		€ 1,509,120 (for all projects presented)

Source: authors' elaboration

Discussion

In general terms we have that the overall project cost has been € 1,441,514, with a cost per comment equal to € 90.33 (compared to over 550 of EU eParticipation projects), a cost per user of € 373.35, and a cost per project of € 2,503. The use of traditional support methods would have entailed a cost of € 1,509,120, which thereby represent the monetary benefit of using Kublai, with a net benefit of € 67,606. Monetary benefits are limited, also if we take into account the fact that Kublai is complementary with respect to other services to support start-ups, and also by the fact that the number of successful business created by Kublai is extremely limited.

Non-monetized Benefits

Let us present now the non-monetized benefits of the initiative. Most of the benefits concern the dimension of effectiveness, as regards the reduction of administrative burden, due to the fact that taking part to Kublai does not involve a great deal of paperwork, the increase in the value users receive from the services, due to the service received by the staff, and the inclusiveness

off the service, as Kublai engaged prospective entrepreneurs that before were excluded from public support. Also the dimension of efficiency is rather important, as public servant increase their skills and feel more empowered.

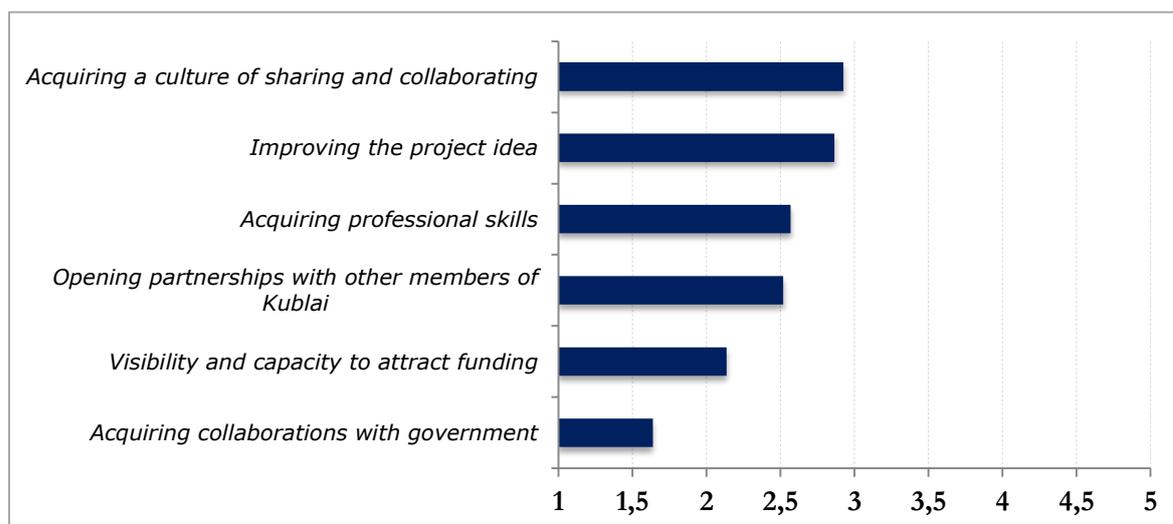
Table 79 – Non-monetized benefits Overview

Category	Benefit	Examples
Effectiveness	<i>Reduced administrative burden for the businesses/citizens</i>	Joining and participating to Kublai is very easy and does not involve a lot of bureaucracy. Moreover, prospective entrepreneurs do not have to spend a great deal of time and resources in filling applications for public funding.
	<i>Increase in the value that users receive from the service</i>	Prospective entrepreneurs receive a high value service, especially from the feedback from the staff. In this regard non-monetized benefits include: <ul style="list-style-type: none"> • Acquiring a culture of collaborating and sharing • Improving the project idea • Acquiring professional skills • Opening partnerships with peers • Acquiring visibility and capacity to attract funding • Acquiring collaborations with PA
	<i>Increase in inclusiveness of services</i>	Kublai engaged prospective entrepreneurs that before were excluded from public support
Efficiency	<i>Increase empowerment of civil servants providing the service</i>	Public servants involved in the project increase their IT and business skills, and are empowered by the fact that they see a concrete impact of their action.

Source: authors' elaboration

In particular, we can present the benefits stemming from the services. Clearly according to the registered users the biggest benefits were the acquisition of a culture of collaborating and sharing, the improvement of the project idea, and the acquisition of professional skills.

Figure 31 – Non-monetized benefits from joining Kublai



Source: authors' elaboration

Future developments

Key Success Factors

The success factors of the Kublai project include:

- The presence of a strong community, easily recognizable and stable over time
 - In this respect the platform has generated, over 7 years, more than 15000 thousand comments from 3861 users that have presented 586 projects
- High level of satisfaction of users
 - More than 80% of users would recommend Kublai to others, and more than 70% would present other projects on the platform, while about 30% would be willing to pay at least 5 euros per month for the services provided
- Diffusion of a culture based on collaboration and sharing
 - 50% of participants declared to have shared a lot of information, while only 23% declared to have shared a small amount of information. 39% declared to have shared more than what they have received
- Benefits especially for less experts
 - The usefulness and benefits of Kublai appear to be higher for users coming from disadvantaged regions and with lower management skills
- Disincentive of opportunistic behaviour and incentive to the presentation of real projects
 - Kublai does not provide funding thereby experts in procedures do not have incentive to take part, while individuals with a very creative idea do
- Some other non-monetized benefits regard the development of an attitude to collaboration and improvement of the project ideas

Lessons learnt

The lesson learnt from the project are the following:

- It is necessary to ensure a continuous online and offline animation in order to ensure the take up of the project. In this sense the community created was not self-sustainable;
- The most important benefits provided by this class of services are non-monetized such as the acquisition of a culture of collaborating and sharing, the improvement of the project idea and the acquisition of professional skills.

Future of the service

The options considered for the future of the project include:

- **Closure of the project.** The first option to be taken into account is clearly the discontinuation of the initiative. In this respect the current context is clearly different from the one present at the birth of Kublai, given that today there are many initiatives supporting startups, while in 2007 the possibilities were limited.
- **Business as usual.** This solution would ensure the continuity of current management and would allow the valorization of the benefits reached so far. Although refined, this solution would not address the gaps identified and a situation of uncertainty with respect to the strategic directions of Kublai would remain. If realised, it should be accompanied by a new strategic plan that clearly identifies priorities and organizational models for the medium term, in order to prevent a recurrence of critical situations such as the absence of animation dedicated resources had in the past.

- **Development of a so-called "multi-client public option":** the idea is to provide a new structure and a new momentum to the project with public administration, creating a service supporting several mechanisms of funding of local development (multi-client). These mechanisms, independently from being of private or public nature, should share the values of Kublai and should be engaged in collaborating with the project.
- **Development of a "private" spin-off:** launch of Kublai in the market as a self-sufficient entity managed by the animation staff. This would entail the use of the Kublai community as a support service for both prospective entrepreneurs and financing parties. The project income could come from services provided or from "success fees" paid by projects receiving funding.

Conclusions

Kublai is a pioneer project consisting in a peer to peer support to prospective entrepreneurship by the mean of a social media platform in which a community of registered users can present and discuss project ideas. Further support is provided by a staff of animators. Kublai has achieved great success in engaging individuals with strong innovative capability and a high quality of project ideas but a low capability to gain access to funding both public and private and to turning ideas into projects. Another important challenge met regarded the creation of a strong community. In 7 years the platform has generated more than 15000 comments from 3861 users that presented 586 projects. On the other hand, participation has decreased significantly between 2010 and 2012 due to a discontinuation in the animation, thereby the project was not able to achieve the creation of a critical mass of participants self-sustainable without the presence of a constant animation. Even though it has delivered limited direct concrete monetary benefits, its non-monetized benefits in terms of acquiring a culture of collaborating and sharing, improving the project idea, and acquiring professional skills have been deemed very useful by the participants.

Sources

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www.progettokublai.net

List of all project references interviewed

Doctor Alberto Cottica
Initiator of the Project
Head of Research, Edgeryders

Doctor Tito Bianchi
Local Economic Development Expert
Fondazione Cariplo

Mr. Renato Santelia
Director
Agency for Territorial Cohesion



**ioPartecipo+,
Emilia-Romagna**

Executive Summary

ioPartecipo+ is an online platform that aims at connecting citizens and regional Public Administrations. It allows citizens, local governments, companies and NGOs to actively contribute to regional policy-making processes. It has been implemented in 2013 by the Emilia-Romagna Region in Italy and has registered 27.000 visits since its launch. Start-up costs have demonstrated to be remarkably low due to the existence of a previous online regional platform. In order to involve citizens and all stakeholders to the implementation phase of the service, innovative co-designing and co-creation activities have been undertaken, which have demonstrated their effectiveness and efficiency. The two-fold nature of the service which includes both, online and offline activities in an integrated way, has also demonstrated to be of particularly efficacy. Indeed, most of the tangible benefits stemming from the ioPartecipo+ platform come from this integrated approach, which has allowed the Region for a high take-up of the service, accompanied by relevant tangible benefits.

Background and Rationale

Background

In the early 2000's, the EU started opening its policy making processes to citizens with the aim to actively involve the civil society and reduce the 'democratic deficit' through enhanced transparency, effective communication and increased participation. In 2002, the EU launched the **Interactive Policy Making** (IPM) application to support the development of EU policies, and promoted online public consultations through the portal '**Your Voice in Europe**'. Since then, the focus on citizen's involvement to decision-making processes has been rising, leading in 2009 to Art. 10 of the **Lisbon Treaty**, which states European citizens' right to participate to EU decision-making activities. National Authorities have consequently adapted their legislation to the principles of transparency and participation: these, together with the development of ICT and PA digitalisation, has boosted open-e government services. The Italian government with the Law 150/2009, has included the right to transparency among citizens' civil and social rights. In 2011 the online platform, **www.datigov.it**, has been launched remarkably increasing the amount of available open data. In the same year, Italy has joined the **Open Government Partnership** to promote transparency, fight to corruption and participatory democracy. The initiative has represented a strong input for regional authorities that have consequently launched inclusive and innovative initiatives. Among Italian regions, Emilia- Romagna, with its "**E-R Partecipazione**" website and the new '**ioPartecipo+** platform' represents one of Italian best-practices. Indeed, the regional Digital Agenda 2015-2019 (ADER) envisages a completely digitalised region by 2025, whose citizens live, study and work through ITC and the Internet.

Needs Addressed

The platform ioPartecipo+ responded to the need of a new channel of communication between citizens and the regional public administration. When implemented, the online platform offered a new web space enabling horizontal communication with the ultimate objective of enhanced

participation. As declared by the regional representatives, the main driver for promoting participatory activities has been the objective of enhanced cooperation with citizens. Participatory processes are intended as an opportunity to gather, optimise and explore citizens' ideas on matters that directly affect their daily lives, with the aim of both, finding shared solutions and connect the civil society to public administrations.

Description of the Service

Objectives

Main objectives of ioPartecipo+ include the increase of the **quality of implemented policies**, a boost to **citizen's participation** to PA decisions and actions, also facilitating the path for bottom-up ideas to influence the political agenda (democratisation or participation needs); it provides citizens with details of PA activities, in order to make public servants **more accountable** for their decisions and actions (open policy-making); furthermore it has also the aim to increase social cohesion as well as **conflict-reduction**, through the strengthening of trust on regional institutions; finally one of the main objectives include increased transparency and openness of regional activities.

Inputs and Activities

Participatory activities are uploaded to the platform and allocated into virtual squares. Squares are virtual public spaces where projects are presented to stakeholders and where participatory processes take place. There, stakeholders can: download the documentation related to the theme discussed, share information, discuss ideas and propose solutions, via surveys, Q&A sections and forums. Squares are also used to send invitations and promote off-line participatory processes, such as public meetings, workshops and related events. Stakeholders can interact with regional administration throughout different degrees of participation, such as communication, consultation, projecting, and empowerment activities. Furthermore, participatory activities take place through different policy-making phases, namely: policy analysis, design, projecting, implementation, and evaluation of the policies proposed. It is worth noticing that participatory processes are available without any charge for end-users, and users can interact with the online service simply connecting to the *ioPartecipo+* website through registration of personal credentials. Off-line Participatory activities include offline events such as workshops, meetings with regional officers and presentations.

Timing and Planning

ioPartecipo+ has been implemented throughout the year 2013, as a brand new version of the previous ioPartecipo platform, after a co-design phase and consultations with citizens, experts and public servants. The co-design phase took place from January to March 2013; the second phase, mainly the design, prototype and development phases, have been carried out in June 2013. Finally, ioPartecipo+ was launched in July 2013.

Cost structure

Due to the existence of a prior website and an already existent software developed by the Emilia-Romagna Region, **start-up costs** are relatively low. The large majority of initial investments has been devoted to the transition phase and the check of its functionalities. **Operational** and **maintenance costs** concern the necessary resources to guarantee the correct functioning of the service, after its transition phase and are mainly due to personnel costs.

Table 60 - Cost Overview

Type of Costs	One-off costs	Operational/Other investment costs		
	2012	2013	2014	2015
Start-up	€ 85,000 ³⁰	-		
Operational¹				
Costs for running the system		€ 14,580	€ 14,580	€ 14,580
Costs for monitoring and evaluating the system, including communication	-	€ 29,760	€ 29,760	€ 29,760
Total costs per year	€ 85,000	€ 44,340	€ 44,340	€ 44,340
Recurrent costs <i>(average of operational and other investment costs)</i>		€ 44,340		

Source: authors' elaboration

Main funding sources came from the regional budget (20.000 Euro) and from European funding (55.000 Euro). The budget has been allocated as follows:

Table 80 - Cost Allocation

Phase	Share
Projecting	50%
Execution	30%
Check and control	10%
Implementation	10%

Source: authors' elaboration

Outputs and Outcomes

At the time being, 22 squares have been opened in the platform, and 15 regional policies have been discussed. A direct indicator to measure the outputs and outcomes of the project is the number of active users of the website and its visitors. As to April 2016, indicators have reported the following:

Table 81 - Outputs and Outcomes

Type of users	2013-2015
Total number of visits	27.000
Number of unique visitors	7.000
Number of registered users	1.500
Average length of visit	3 minutes 50 seconds

Source: authors' elaboration

Main Stakeholders Involved

ioPartecipo+ addresses a wide-range of actors: citizens, regional and local PAs, NGOs and private companies. Actors have been involved since the designing phase of the service, throughout workshops and online consultations. The service is free of charge for its users. Users can access the platform throughout pre-registration, giving basic personal details. In each virtual square are defined the actors invited to the participatory process, as well as the degree of participation required. Depending on that, participatory activities range from online documentation, online surveys, Q&A sessions, forums and invitation to offline activities. The service is largely scalable: it can be used by local government to promote e-participation, and it can be also used as a model for other Public Authorities at the National level.

Barriers

Main barriers and obstacles have been divided according with different phases of the project.

- System planning and development phase: lack of previous experiences and statistical references, limited involvement of the beneficiary side, long-term duration of the project, high impact of the technological asset.
- System acquisition and implementation phase: external constraints, high number of projects to be implemented and large number of partners, cross-disciplinary aspect of the project.
- Transition phase: external constraints, absence of a sustainability plan, low commitment level of the service recipients, lack of a training and communication plan.
- Functioning check phase: low commitment level of the service recipients, cross-disciplinary aspect of the project, relatively new technical assets.

The large majority of the mentioned obstacles have been addressed during the designing phase through co-designing activities. Communication and training issues have been solved through the 'Communication Thematic Group', internal to the institution

Why the Service can be considered an OGS

Table 82 - Service Overview

Starting year	2013
Type of integrated solution	Open e-Government Service
Key actors / stakeholders	Citizens, PA, Private Companies, NGOs
Number of impacted users	1.500 registered users; 7000 visits;
Policy domain	General public services
Level of collaborator/s involvement	Design, implementation, monitoring, evaluation
Type of Collaboration	Open collaboration
Resources	Specific thematic Knowledge

Source: authors' elaboration

Openness

The openness dimension is characterised by the transparent policy-making process enabled by the service; furthermore, data are uploaded and available to everyone for downloading, sharing and comment through related public forums. Only active participation requires a simple registration procedure. Registration can be also done through socials such as Facebook or Twitter.

Collaboration

The collaboration aspect is the main feature of the service. The collaboration dimension is defined by **co-design** and **co-production** activities. Indeed, ioPartecipo+ is the outcome of innovative co-designing activities which have involved researchers, experts and end-users of the service. The objective of the activities has been the production of ideas and proposals throughout focus groups and feedback analysis on the website prototype. Main benefits of the co-design activities is to promptly generate proposals, providing at the same time tangible problematics and critics to the service. During the implementation phase of the service, online co-design activities have been organised; a new virtual square, called 'creiamo insieme ioPartecipo+' has been created, to openly discuss the redesigning of the platform and its new functions.

ICT-enabled Innovation

The technology dimension is characterised by the online platform, resulting from the re-use of existing SW components.

Costs-benefits analysis

The 'SEINONDA' square

Given the wide-ranging nature of the service, in order to develop a clear quantitative analysis of the service, the focus has been on one public consultation process enabled through the ioPartecipo+ platform. The participatory process at issue has been chosen according with the following criteria:

- Proven success of the participatory activities
- Longevity of the service
- Availability of specific data

The virtual square chosen for the aim of the costs-benefits analysis is '**SEINONDA**', which represents one of the most successful squares in terms of its participation ratios, activities carried out and final outcomes.

SEINONDA is a participatory process which comprises both online and off-line participatory activities.

Background: As previously mentioned, EU legislation gives particular attention to citizens' participation on environmental issues. The decisive impetus came from the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and implemented in the EU legislation through the Directive 2000/60/CE, on water protection and the Directive 2001/42/CE on the Strategic environmental assessment. Successively, the EU Parliament issued the Directive 2007/60/CE on the assessment and

management of flood risks. The focal point of the above mentioned Directives is that they envisaged participation and active involvement of citizens, particularly through online activities.

Needs addressed: The SEINONDA square is compliant with the EU Parliament Directive 2007/60/CE on the assessment and management of flood risks. The Directive requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets, but moreover, the Directive reinforces citizens' rights to access information and to have a say in the planning process.

Objectives: Main objectives of the square are to inform citizens on flood risks providing and circulating hazard maps and showing the potential adverse consequences associated to these events, guaranteeing at the same time shared consultation processes and active collaboration. The final objective is to educate and increase citizens' awareness on appropriate behaviours.

Degrees of participation enabled: communication and consultation.

Methods and tools used: uploading of online documentation, online forums and pools, blog, workshops.

Communication: an online campaign has been launched, which has reached more than 26K visits; 185 press releases.

Timing: the consultation was open in May 2013 and lasted until December 2015.

Outputs: 2926 ideas and proposals; 1301 total participant.

Impacts: the regional strategy in Flood Risk Management has been re-defined with citizens' contribution; cooperation between different public institutions has been enhanced and new communication channels between public institutions and citizens during emergency situation have been developed.

Inputs and activities:

Offline activities:

In total, offline activities have reached **1270** people. During the year 2014, three types of off-line public consultations have been organised, reaching **575** citizens in total. The first public consultation has been organised in December 2013 and has involved 138 participants. Broader consultations have seen a remarkable involvement of the local Public administration, including 8 Provinces, 146 Municipalities, 21 Civil protection authorities, 21 networks administrators and 9 different authorities: 328 active participants have been involved. Finally, two different workshops have been organised with a focus on two streams 'SEINONDA sulla costa' and 'SEINONDA da fiumi e canali': 109 citizens participated in total to the workshops.

In 2015, **695** citizens have been involved in offline activities. In March 2015 a public conference on the quality of water and floods safety has been organised, involving 197 participants. Seminars and meetings with local public authorities have involved 161 citizens, 9 provinces, 100 municipalities, and 52 experts. Furthermore, 160 people attended a seminar to analyse the implementation of the Floods Directive 2007/60/CE in October 2015. Finally, three workshops have been carried out, which have seen the participation of 177 citizens in total. Themes covered in the workshops were related to the cooperation between citizens to manage floods risks, the preservation of water courses, canals and coasts, and the alert systems in case of emergency.

Table 83 – Participation to Offline Activities

Offline consultations	Number of participants 2014	Number of participants 2015
Citizens consultations	138	357
Conference organised by Provinces	328	161
Workshops	109	177
Total	575	695

Source: authors' elaboration

Online activities:

During the years 2014 and 2015, visitors to the square have been 12.409. In 2014, **2600** people have visited the 'SEIONDA' square. In 2015 visitors have been **9809**.

The range of online activities is indeed diverse: surveys have been launched both in 2014 and 2015: main online activities include public forums and surveys. The table below summarises the activities carried out relatively to the two years of the square.

Table 84 - Overview of Online activities

Online consultations	2014	2015
Forum	4 launched, 4 comments registered	6 launched, 9 comments registered
Surveys	2 launched, 66 contribution	4 launched, 114 contribution
Visitors	2600 unique visitors	12.000 contacts reached, of whom 9.809 unique visitors

Source: authors' elaboration

Costs

The costs of the **SEIONDA** square are mainly operational costs. This group of costs concerns resources related to labour costs of the personnel (costs for running the system) in charge of the actual functioning of the platform, as well as monitoring and evaluating participatory activities in the platform. Personnel costs amounts to 35,700 Euro for 2 years of activities and it includes three project coordinators and 60 working days, as well as support personnel dedicated to online communication activities. In the table below, the total cost has been divided for the years 2014- 2015. Dissemination costs include costs sustained for the organisation of offline activities with the collaboration of external experts and costs for published material, and they have also been equally divided between the years 2014 and 2015.

As far as users are concerned, it is worth notice that ioPartecipo+ does not charge any cost on its users. The only costs that users face concern timing costs (3 minutes per user on average) and connection costs. Offline activities are free and open to the public.

Table 85 - Sei in Onda Cost overview

Type of Costs	Operational costs	
	2014	2015
Costs for running the system	€17,850	€ 17,850
Offline activities and dissemination costs	€ 45,805	€ 30,180
Total costs per year	€ 63,655	€ 48,030

Source: authors' elaboration

Economic benefits

Given the above costs and number of participants, the costs per person of the service in 2014 has been 20 Euro, whereas the cost per person in 2015 has been calculated to be 4.5 Euro circa.

Although total costs of the square have decreased in 2015, the drop of the cost per person is mainly due to the outstanding increase of the number of participants. In particular, online users have registered a 270% increase, specifically from 2600 in 2014 to 9809 in 2015; on the other hand, figures of offline users in 2015 have increased by 20% with respect to users in 2014.

This more than proportional growth of online users allowed for a considerable diminution of the cost per person of the square: indeed, savings have been calculated up to 15.5 Euro per person.

Eventually, economic benefits from rising online participation are estimated to be approximately **162.800,00** Euro for the year 2015.

Table 86 - Sei in onda Economic benefits Overview

I.e. of benefits	Calculation method	Quantification
Future cost avoidance	Lower costs for increasing online participation: €15,5 savings per person X number of users in 2015 (10,504)	€ 162,800€

Source: authors' elaboration

Discussion

It is evident that using online activities to involve citizens in the regional decision making processes comes with a considerable advantage for regional PAs. Indeed, it tremendously increases the number of people that can be reached and involved in participatory processes, and at the same time it decreases by a large margin costs for public participatory activities.

Non-economic value of the service

Nevertheless, main benefits of ioPartecipo+ can be attributed to the non economic category. The table below summarize the different typologies of intangible benefits generated by the service.

Table 87 - Intangible Benefits Overview

BENEFIT	EXAMPLES
Enhance transparency and accountability of decision-making.	Involving citizens in public activities offers the opportunity for the citizens to become more aware of the goals and constraints of the administration, and to express opinions which may be taken into account in the decision process. These elements support both the agreement on public decisions and makes the public administration more open from a citizen perspective, increasing legitimacy of the local government.
Enhancement in civic participation to policy making.	Information, consultation and active participation increase the transparency of the administration and give more responsibility to the administration to act in a way that represents the citizens. In this context, strengthening the relation between citizen and public administration fosters the active citizenship and favours its integration in society. Similarly, it increases the commitment of citizens on the public activities, promoting their participation in political debates or in voting.
Getting to a better quality in public policies:	Improving the connection between citizen and public administration increases the interest of the citizens in public issues. Information, consultation and active participation give the public administration a better basis to draft public policies and allow a more effective decision implementation, since citizens are already aware of policies, as they actively contributed to them.

Source: authors' elaboration

Future developments

Key Success Factors

Scalability: One of the key features of ioPartecipo+ is the possibility to make the platform available for local public administration. This will strengthen the objectives of social inclusion throughout participative e-democracy, efficiency and effectiveness.

Law 3/2010: The regional law 3/2010, enables and requires regional authorities to actively involve citizens in the regional decision-making process throughout online and offline methods. As stated in the regional law, not only regional authorities have to promote participatory models, but also, the outcomes of the processes have to be implemented accordingly.

Lessons learnt

The main lessons learnt come from the co-design phase of the service. Firstly, it is crucial to involve all the relevant stakeholders from the beginning in order to gather all relevant feedback either positive or negative to the project. Involving them in such kind of activities, increases the awareness on the utility of the service. Furthermore, it also helps adapting the service to end-users needs, guaranteeing a success after the launch of the service.

Future of the service

The scaling and replication option is considered to be the key point for the future of the service. This concerns especially the potential future use by other local Public Administrations. Indeed, the Region Emilia-Romagna has implemented a service that can be used both at the local and national level. At the time being, other Italian Regions have demonstrated their interest on this service, looking at it as a successful model for participatory policy-making activities.

Conclusions

As emerged from the previous analysis, ioPartecipo+ can be considered as a relevant example of Open eGovernment Services. Co-creation played a central role for the implementation of the service with the involvement of citizens along with other relevant stakeholders across the different project phases. As far as benefits are concerned, the analysis has demonstrated that both tangible and non-tangible benefits have been achieved: on the one hand, the increasing involvement of online users has determined remarkable savings for the Regional PA. On the other hand, relevant intangible benefits have been also achieved: they are related to the enhancement of transparency and accountability of decision-making processes and to the improvement of civic participation in policy-making.

Sources:

Regione Emilia-Romagna (2016). PartecipAzioni: sostantivo, plurale. Guida metodologica per la gestione di processi di partecipazione integrati.

List of all project referen

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3.3 Excerpt from the Scenario Workshop

General information

The Scenario Workshop was organised in the framework of the study "*Analysis of the Value of New Generation of eGovernment Services and How Can the Public Sector Become an Agent of Innovation Through ICT*". The main objectives of the event were to:

- Outline the state of the art of new eGovernment services;
- Provide suggestions to inspire the development of future scenarios;
- Share some case studies focussing on issues such as culture, organisational change, incentives, sustainability and communication.

The Workshop took place on the 31st of May 2016 in Brussels, within DG CONNECT's premises (Avenue de Beaulieu 25), from 10:30 till 16:00.

In order to meet the set objectives a vast panel of relevant speakers was involved.



The main facilitators of the Workshop were the study's Project Manager Giovanna Galasso from PwC Digital Innovation, Giancarlo Senatore, Partner at the PwC Public Sector Unit, the study's Scientific Director David Osimo from Open Evidence and representatives from the European Commission - DG Connect Mechthild Rohen, Head of Unit for "Public Services" and Anders Gjoen, Policy Officer.

Extensive dissemination activities were carried out over the two months preceding the event. These included different rounds of emails sent to several stakeholder communities, publication of information in the dedicated webpage in Joinup community and direct contact with relevant key stakeholders.

Out of a 135 people - **from 28 different countries** - who registered for the Workshop around **60 actually attended**. Most of them were representing central and local EU public administrations, research institutes and various business support organisations, as well as business representatives.

A workshop folder was distributed during the on-site registration to all participants that attended the meeting. The folder contained:

- The list of registered participants
- A Workshop evaluation sheet
- The Future Scenarios description.

Giovanna Galasso - Senior Manager, PwC Italy – Digital Innovation Team

Introductory greetings

Ms. Giovanna Galasso, - Senior Manager, PwC Italy – Digital Innovation Team - briefly presented the study "Analysis of the value of new generation of eGovernment services and how can the public sector become an agent of innovation through ICT". The project under Service Contract SMART 2014/0066 between DG CONNECT and PwC, Open Evidence and the Institute of Baltic Studies.

The Agenda

First Session - Morning	
10:00-10:30	Welcome coffee and registration
10:30-10:40	Opening Greetings <u>Speaker:</u> Mechthild Rohen - Head of Unit for "Public Services" - DG CONNECT
10:40-11:00	Keynote speech: Co-delivery of public services and promoting public sector innovation <u>Speaker:</u> B. Ubaldi Senior Project manager – Digital Government & Open Data - OECD
11:00-11:20	The value of Open eGovernment Services and the public sector's role innovating them: overall presentation of the study, definitions & taxonomy Giovanna Galasso will make an introductive presentation on the project structure and goals, while Francesco Mureddu will focus on of what is meant by "Open eGovernment Services". <u>Speakers:</u> Giovanna Galasso, Senior Manager - PwC, Digital Innovation Team & Francesco Mureddu, Senior Researcher - Open Evidence
11:20-12:30	The value of delivering Open eGovernment Services: presentation of selected cases Giancarlo Senatore will moderate a session with case representatives, sharing insights collected through the Cost Benefit Analysis (CBA) on concrete cases of Open eGovernment Services; a plenary discussion and Q&As with all case representatives will close this session. <u>Moderator:</u> Giancarlo Senatore, Partner - PwC, Government & Public Sector
	<p style="text-align: center;">Case 1: IoPartecipo+</p> <p>IoPartecipo+ is a co-created platform for collaborative decision making and idea sharing, operating at the regional and local level. <u>Speaker:</u> Sabrina Franceschini - Regione Emilia Romagna - Italy</p>
	<p style="text-align: center;">Case 2: NemID</p> <p>The eIDM system in Denmark introduces a general open, scalable and transparent security infrastructure based on PKI, controlled by the State and operated by private Certificate authorities. <u>Speaker:</u> Asger Rønn Jensen - Danish Agency for Digitization - Denmark</p>
	<p style="text-align: center;">Case 3: FixMyStreet</p> <p>FixMyStreet is a service that allows citizens to report and provide feedback to public authorities, making the public sector save time and money. <u>Speaker:</u> Benjamin Nickolls - MySociety -</p>
	<p style="text-align: center;">Case 4: Di@vgeia</p> <p>Di@vgeia is an online platform where both central and local public administrations can upload documents and processes to enable citizens and businesses to access them in a user friendly way.</p>

	UK, and Sam Drury, Project Manager - Oxfordshire County Council, UK	Speaker: Nancy Routzouni - Ministry of the Interior and Administrative Reform - Greece
	Open eGovernment Services and Social Welfare	
12:30-12:45	Gianluca Misuraca will briefly present four additional cases of Open eGovernment Services applied to the social welfare domain. The cases have been analysed within the scope of the project <i>IESI - ICT-Enabled Social Innovation in support to the implementation of the EU Social Investment Package</i> . Speaker: Gianluca Misuraca - Senior Scientist - JRC-IPTS	
12:45-13:00	What are people saying about Open eGovernment Services and how the public sector can innovate them: first outcomes from the web-survey & the interviews In this session the results of the interviews and the web-survey will be presented. These were organised to gather stakeholders' perception on Open eGovernment Services, namely around the responders' view of the drivers and barriers for the adoption of Open eGovernment Services. Speaker: David Brunelleschi, Manager - PwC, Government & Public Sector	
13:00-14:00	Buffet lunch	
Second Session - Afternoon		
14:00-14:15	The rise, fall and ultimate triumph of open government Alberto Cottica will present the past, current and future scenarios for Open eGovernment Services. Moderator and Speaker: Alberto Cottica Head of Research - Edgeryders	
14:15-14:30	Public Sector Innovation and the future of Open eGovernment Services: Presentation of the "future scenarios" David Osimo will present some possible "future scenarios" on the potential adoption of Open eGovernment Services. This introduction will open the way towards the group discussion over these scenarios. Moderator and Speaker: David Osimo, Scientific Director - Open Evidence	
14:30-15:30	Focus group discussions on the "future scenarios" and initial ideas on possible "policy recommendations" The participants will be divided into several panels. Each member of the group will be invited to provide inputs and discuss his/her views with the other group members, while a facilitator in each group will make sure to keep on track the discussion. Following, the same groups will be challenged to share some initial ideas on possible relevant policy recommendations; it will be particularly relevant to highlight HOW the upscaling can happen.	
15:30 - 15:40 - Coffee break		
15:40-15:55	Plenary discussion on "future scenarios" All the participants will get together for the final plenary session. The main results - including initial ideas emerged on policy recommendations from each group - will be outlined. Moderator and Speaker: David Osimo, Scientific Director - Open Evidence	
15:55-16:00	Wrap up, next steps and final greetings As a concluding remark of the event there will be a wrap-up of the whole scenario workshop. Finally, next steps will be disclosed concerning in particular publishing proposed "policy recommendations" open to an iterative discussion and online validation process with stakeholders. Speakers: Giovanna Galasso, Senior Manager - PwC & Anders Gjoen Policy Officer - DG CONNECT	

Mechthild Rohen - Head of Unit for "Public Services" - DG CONNECT

Opening

Mechthild Rohen, Head of Unit for "Public Services" at DG Connect briefly introduced the workshop and the overall framework behind Open eGovernment Services referring to the recently-published eGovernment Action Plan 2016-2020. She pointed to the key role Open eGovernment Services will play in the future and the need for government to keep pace with the constant changes and trends happening in modern societies.

Barbara Ubaldi Senior Project manager – Digital Government & Open Data - OECD

Keynote speech: Co-delivery of public services and promoting public sector innovation

Barbara Ubaldi is a Senior Project Manager at the OECD. She is responsible for the areas of Digital Government, Open Government Data, Public Governance and Territorial Development. During her presentation Ms.Ubaldi focused on the "Digital Transformation of Public Services and the Take-off of User-Driven Services".

Ms. Ubaldi's presentation was divided into four blocks. The first three blocks addressed the OECD recommendations on Digital Government Strategies while the last one focused on the different types of support tools that the OECD has in place in order to help governments tackling the challenges of Digital Public Services:

- Openness and engagement
- Governance and coordination
- Capacities to support implementation
- Overcoming the challenges

At the beginning of her presentation Ms.Ubaldi stressed the importance of new technologies for improving public sector

intelligence, understanding users' needs, enhancing service delivery channels, improving cost-effectiveness of engagement/participation mechanisms and to breaking down silos of activities in the public sectors.

Concerning **openness and engagement**, Ms.Ubaldi pointed out the central role played by new technologies in the emergence of user-driven services and the opening up of the public sector towards citizens. Within this framework the OECD has been working with national institutions especially from Sweden and Denmark on services in the welfare domain.



Ms.Ubaldi stressed the importance for governments **to plan** the way they use technologies, deploy the use of technologies and assess the use of technologies. According to Ms.Ubaldi the main countries that have embraced the idea of digital transformation are the UK, Australia and New Zealand. The main rationale behind digital transformation is to make sure that governments have the right governance mechanisms in place in order to ensure a high integration among the different digital opportunities.

However, in order to successfully deploy Digital Services, governments and civil servants need to have the **right capabilities and skills in place**. Ms.Ubaldi stressed the need for a new design thinking process that could support public institutions to plan the way problems are identified and solutions are spotted. Within this framework, crowdsourcing, engaging different actors from outside and inside the public sector along with creating a context favourable to change are key elements for the success of Digital Services. New ways of planning products involving the creation of prototypes and the launch of several testing phases with the involvement of sample users are also important. Finally, a "scaling-up" approach needs also to be taken into consideration by public authorities. Solutions that have been implemented in a single ministry or public body without cross-cutting collaborative approaches and without investments linked to strategic objectives and vision can be hardly successful.

In order to help and support governments in their efforts to open up digital service delivery the OECD has been working in close co-operation with different countries. Via country reviews the OECD is providing local public institutions with **in-depth analysis and recommendations** on how to best exploit the potential of digital services. Moreover, via the Observatory for Public Sector Innovation, the OECD is also trying to create a platform where virtuous examples of Public Digital Services are published and where different stakeholders can interact.

Giovanna Galasso, Senior Manager - PwC, Digital Innovation Team & Francesco Mureddu, Senior Researcher - Open Evidence

The value of Open eGovernment Services and the public sector's role innovating them: overall presentation of the study, definitions & taxonomy

Ms.Galasso and Mr.Mureddu made a general presentation of the study, as well as a description of the taxonomy of Open eGovernment Services and an illustration of the ten selected cases for the cost-benefit analysis.

Ms.Galasso started off by introducing the key objectives of the study including:

- What do we mean exactly by "Open and Collaborative eGovernment Services?"
- Why are "Open eGovernment Services" important?
- How can "Open eGovernment Services" be fostered by the public sector, in terms of innovation culture and enabling factors.

Starting from the overall approach, Ms.Galasso presented the key steps of the study. In order to **develop a shared conceptual model and a taxonomy** the team launched a wide desk research and a community built through online engagement. Starting from the results of the desk research, a long list of cases was drafted. Thanks to the long list of cases it was then possible for the team to identify 10 cases on which

to undertake a **cost-benefit analysis**. The results from the cost-benefit analysis at the case level were used in order to produce some macro-estimation and projections of results at the EU28 level. The third and last step of the study included the identification of **drivers and barriers for OGS development through Public Sector Innovation**. The scenario workshop along with a web-based survey, a series of interviews and desk research were the activities that will feed into the drafting of the report on Task 3.

Mr.Mureddu presented the Taxonomy. He started introducing the 3 main characteristics of Open eGovernment that are at the base of the study, namely: **openness, collaboration, ICT technology**. He then went on explaining the different Taxonomy domains:

- Taxonomy of Scopes with the different levels including: Width, Domain, Branch, Level of Government, Users, Objects.
- Taxonomy of Types, including: Collaboration, Role, Technology, Cycle Phase, Collaborator, Resources.

Ms.Galasso concluded by explaining the identification process for the 10 case studies. The team started by drafting a long list of 183 cases found through the literature review, internet research and online consultation. Starting from the long list 30 cases were selected based on the taxonomy developed in Task 1. The final selection of 10 cases was based on the level of maturity, data availability, country coverage and business case. The cases were identified



according to different criteria including among the others: availability of quantitative data, open service technology, open data technology, open, inclusive and collaborative features. The 10 selected cases were also clusterized into three main areas following an OECD categorization, namely: human, administrative and policy. The presentation ended with an introduction of the first findings from the analysis. Services clustered within the Human and Administrative area have been considered as promising and mature according to: technology costs, tangible benefits, intangible benefits and scalability. Services in the policy domain have stronger non-economic value as the tangible benefit are less evident.

The value of delivering Open eGovernment Services: presentation of selected cases

Mr. Giancarlo Senatore, Partner at PwC Italy, briefly introduced the session with the selected case studies.

Case 1: IoPartecipo+

Ms. Sabrina Franceschini presented the service IoPartecipo+ developed by the Italian region Emilia-Romagna. IoPartecipo+ is an online platform that aims at connecting citizens and regional Public Administrations. It answered the needs of **new channel of communication between citizens and the regional public administration**. It allows citizens, local governments, companies and NGOs to actively contribute to regional policy-making processes. Participatory activities are uploaded on the platform and allocated into virtual squares. Squares are virtual public spaces where projects are presented to stakeholders and where the participatory process takes place. Squares are also used to send invitation and promote off-line participatory process, such as public meetings, workshops and related events.



One single virtual square was chosen in order to calculate the costs and benefits. On the one hand the **benefits** achieved can be mostly related to:

- Savings from online participation

On the other hand the **costs** sustained refer to:

- Costs for running the system
- Offline activities and dissemination costs

In the future personalised access to data and services based on a "user profile" which will take into account users' previous knowledge, interests and levels of participation in the past initiative is planned. Moreover, a mobile version is planned to be developed along with an integration with open data services.

Case 2: NemID

Mr. Asger Røn Jensen introduced the Danish service, NemID. The NemID login service which has been developed and implemented in Denmark since 2003. The system enables Danish citizens to **access a wide range of the public administration's services but also online banking and tax services by entering an individual user name, password and code**. The service has been highly successful in Denmark with more than 4,68 million users, 188 million transactions with public sector & 3rd parties in 2015, 45 million bank transactions every month

The service has recorded some relevant tangible **benefits** including:

- Reduction in paper and postage
- Replacement of physical letter and applications by online transactions

In regards to the **costs** sustained it can be accounted:

- Start-up
- Operational
- Additional yearly investments
- Recurrent yearly costs

Several improvements are planned for the service in the coming years, especially in relation to enhanced login factors, security levels, privacy and online-support options.

Case 3: FixMyStreet

Mr. Ben Nickolls started by introducing the overall features of the service and the main steps in its development and implementation. The FixMyStreet service, launched and run by the NGO mySociety since 2007, has become an **important tool for several local public administrations in order to enhance street maintenance**. It works by entering a postcode (or by enabling the website to locate the user automatically) along with the description of the problem that needs to be fixed. The issues reported by citizens are then emailed directly to the relevant Councils. Four weeks after the report has been created, citizens are then contacted by FixMyStreet in order to confirm that the problem has been fixed. The service has received approximately GBP 1 million investment since 2008 from philanthropic investors. It has also generated revenues amounting to GBP 75,000.

Mr. Sam Drury explained the implementation of the service in Oxfordshire. The service was introduced by Oxfordshire County Council in 2012 thanks to a successful co-operation with mySociety. The service is fully embedded into the Council's web site. Thanks to FixMyStreet it is possible for the Council to improve highway inspections, customer communication, and performance monitoring. The main actors involved are the highways teams, customer service centre, parish councils and the public in the form of end users. The service has recorded some relevant tangible **benefits** including:

- Reduced physical presence
- Digital by Default
- Future Cost avoidance

In regards to the **costs** sustained these are:

- One-off startup costs
- Operational costs
- Future development costs

In the future FixMyStreet will still operate as a charity, it will be operated as a product via a non-for-profit subsidiary. The ambition for the future is also to increase the revenues while lowering the total operating costs for the customers.

Case 4: Di@vgeia

Ms. Nancy Routzouni presented the Greek service Di@vgeia. The Di@vgeia programme makes use of ICT tools such as an online platform where both **central and local public administrations could upload documents** and processes in order to enable citizens and businesses the get access to them in an easy and user friendly way. The Di@vgeia Programme was initiated by MAREG (Ministry of Administrative Reform and e-Government) following the approval of the Law 3861/2010 by the Greek Government. The technological implementation model of the platform has been based on an agile strategy with "open content" and "open architecture" that enable citizens



and other private actors to generate their own applications and services via the program's open content API. The whole platform has been developed in-house by the Greek Research & Technology Network using open source software.

The service has recorded some relevant tangible **benefits** including:

- Reduced data transaction costs

In regards to the **costs** sustained were listed:

- Set-up costs for the design, implementation and production phase

In the future the scope of the initiative will be expanded by including the possibility for non-profit entities to publish spending information and have public entities publishing data on the execution of their budgets on a monthly basis. New initiatives are also planned in order to develop stronger reporting tools, standardize all public documents and create a single public authorities' registry based on the data model.

Gianluca Misuraca - Senior Scientist - JRC-IPTS

The Open eGovernment Services and Social Welfare

Mr Giancarlo Misuraca focused his presentation to "Open Digital Welfare Services". Mr Misuraca works for the Joint Research Centre which is the body in the European Commission focusing on providing data and information for supporting the different DGs.

Mr. Misuraca started by introducing the policy context. Within the policy framework **a central role is played by the "Social Investment Package"(SIP)** which encourages Member States to pursue active policies for prioritising social investment and modernise their welfare systems. More specifically the main areas of action for the SIP concern:

- More efficient spending in order to ensure adequate and sustainable social protection
- Invest in people's skills
- Make sure that the welfare system respond to the actual needs of citizens.

Especially in the context of the deep economic and social crisis that is affecting Europe the JRC has tried to establish an **observatory on Social Innovation** in order to:

- Contribute to develop the knowledge on how to use ICT-enabled social innovation for supporting the implementation of social policies
- Explore how Member States could use ICT-enabled social innovation in order to implement the actions in the SIP



- Analyse results from the different initiatives implemented in EU Member States
- Develop a methodological framework of analysis of the impacts generated by ICT-enabled social innovation initiatives promoting social investment.

A strong importance in the analysis and research conducted by the JRC is given to the mapping of initiatives against their ICT-enabled social innovation potential and governance level or type of integration. A database is currently being built involving 420 relevant policy initiatives and half of them have already been analysed according to some criteria of evidence. Starting from the 420 initiatives, 14 relevant initiatives were selected as relevant cases. Four main thematic areas have been covered including: social security, employment services, social inclusion, active healthy ageing.

Among the main conclusions that can be drawn:

- Importance of ICT for supporting the process of social services delivery reform
- ICT as a tool for digitalising processes and improving payment mechanisms
- ICT can be useful for reducing social services fragmentation and duplication
- ICT as a tool for making social services closer to the citizens
- ICT as a vehicle for increasing the accountability and extend the reach of service delivery.

Mr.Misuraca concluded his presentation by introducing some potential future scenarios of the welfare system. More specifically Mr.Misuraca pointed to the need to design welfare policies that could support job transitions, enable work-life balance and also facilitate mobility and flexibility. In addition, one of the main targets of the welfare system will be to guarantee social inclusions to the most exposed and vulnerable social groups.

David Brunelleschi, Manager - PwC, Government & Public Sector

What are people saying about Open eGovernment Services and how the public sector can innovate them: first outcomes from the web-survey & the interviews

Mr.David Brunelleschi presented the first outcomes from the web-survey and the interviews conducted by the PwC team as part of the study.

The aim of both the survey and interviews was to understand the **general knowledge and interest** on Open eGovernment Services along with the main **barriers and drivers** for its implementation and delivery.

Respondents from 25 member states took part in the survey with 201 completed questionnaires. According to the answers provided, most of the respondents never used Open eGovernment Services (86%), however they will be really interested in using them (63%). The most popular OGS are those allowing citizens to report and provide feedback. A similar scenario was also confirmed by the interviews. Services allowing citizens to report and provide feedback, allowing participation in public decision making process, government to government integration are those that registered the higher actual and potential use.



According to respondents the current role of the Public Sector in OGS is mostly the one of enabler (44%), however the role it should have in the future is the one of leader (41%). In order to increase public value Open eGovernment Services should be developed in collaboration with citizens (91%) at the national level (89%). Organisational culture is referred to, by most of the respondents, as the major barrier to Open eGovernment Services innovation, similarly leadership of top political managers is considered as a major driver and demand for Open government innovation by citizens as a major enabling factor for private sector participation in OGS.

Mr. Brunelleschi concluded his presentation by stressing the importance of public sector innovation labs as the most important strategy for OGS innovation according to public administration

respondents, along with innovation-friendly public procurement according to respondents from the Business/NGO field.

Alberto Cottica, Head of Research Edgeryders

The rise, fall and ultimate triumph of open government

Mr. Alberto Cottica started his presentation by discussing Open Government. He pointed out the **role played by internet** and the strong political will of public authorities, like the US president **Barack Obama**, in spreading the Open Government paradigm. However, Mr. Cottica stressed how Open Government has lost some of its momentum in recent years. The main answers according to Mr. Cottica can be found in the differences between government and society. While government is oriented towards efficiency and top-down processes, society has no specific goal and is more oriented towards bottom-up processes. Society is a complex adaptive system, and top-down policies are likely to fail more in future.

These differences can be seen across all societies from the Middle Ages until modern times. Some examples of the government orientation towards efficiency can be found in the first nation-wide modern census introduced in France in the 17th century or the introduction of surnames in the Philippines during the Spanish colonial times.

In order to overcome the above mentioned barriers to the diffusion of Open Government, Mr. Cottica explains how several experts and scholars point to the need for governments to **increase the use of external contributions**. Government should just play the role of shaping the environment and adapting to the flow of emergent policies.

David Osimo, Scientific Director - Open Evidence

Public Sector Innovation and the future of Open eGovernment Services: Presentation of the "future scenarios"

David Osimo Scientific Director of Open Evidence explained the workshop activities related to the "future scenario" and the afternoon round table sessions. Two weeks prior to the Workshop the study team submitted to all participants and posted online **the description of possible future scenarios** on the future of Open eGovernment Services. Each of the four scenarios proposed described a different outcome:

- Developing Open decisions
- Fostering Collaborative human services
- Federating administrative services
- The end of open government.

The goal of the roundtables was to add to these scenarios inputs from the participants and create a sort of collaborative knowledge process. Each participant volunteered to join one of the above mentioned four scenarios. The participants of each of the four round tables were asked to discuss and provide their understanding of the drivers and bottlenecks for the implementation of that scenario as well as making policy recommendations. At the end of the discussion during the plenary session each working group presented the main outcomes of the internal discussion.

Focus group discussions on the "future scenarios" and initial ideas on possible "policy recommendations"

Plenary discussion on "future scenarios"

Scenario 1 – Open Decisions:

What emerged from the discussion is the need for government to invest in solving more complex issues while leaving the least complex ones to crowdsourcing. In addition, participants pointed out the need to educate people on civil society issues. In the short term it is important to engage disconnected groups, combine online and offline tools, redesign policy processes based on citizens' insights and educate politicians; also to disseminate information on good practices.



Scenario 2 – Collaborative human services. What emerged from the discussion is the lack of motivation among people to collaborate. Also, the participants stressed how hard it is to arrange public consultation in individual countries and even more at European level. Services like FixmyStreet targeting specific needs at a local level are perceived as more successful than the more generic one. As an example one participant mentioned the Estonian app "let us know". The app is similar to FixmyStreet, however its scope goes beyond the one of fixing potholes or streetlamp by including other more generic aspects like rubbish collection. Unfortunately, due to its wide scope and lack of commitment from the local authorities to fix the problems reported, the app did not succeed. In order to overcome these problems, participants suggested investing more in the design of the service and in the promotion campaigns of the service, starting with focused projects to build up public familiarity.



Scenario 3 – Federated administrative services. What emerged from the discussion is the need to have a base registry of data with defined access rights along with a unique identifier and standards. Some of the main issues and problems that could emerge are related to low level of trust of government by citizens. Moreover, from the discussion emerged also the need for forcing digital by default, make interoperability frameworks happen and have standardized cross-border services.

Scenario 4 - The end of Open Government. According to the participants some major problems could be identified arising from a lack of organisational culture and structure. If organisations cannot change it is hard. Moreover, they also stressed the need to develop a structural framework for the use of data.

Analysis and evaluation

Workshop evaluation

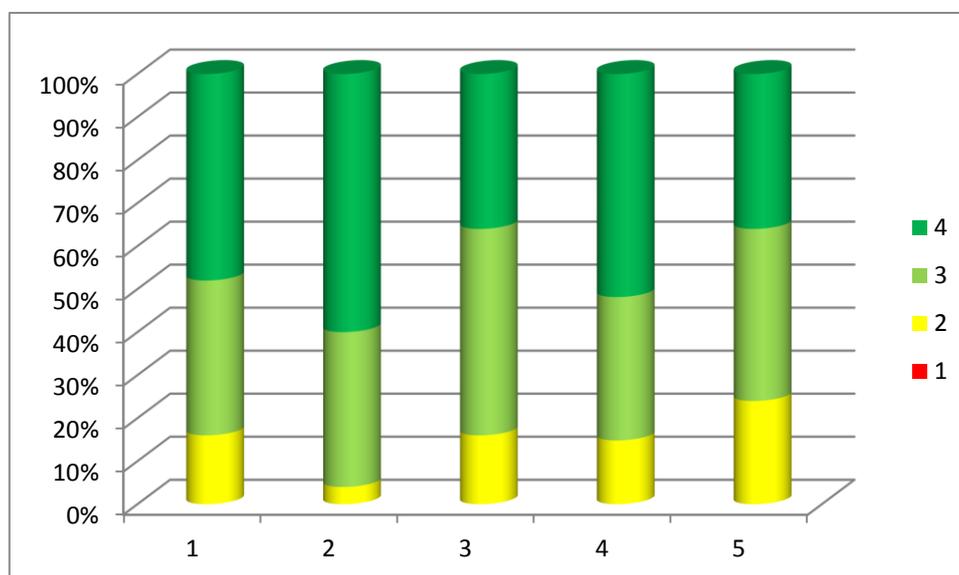
At the end of the Workshop, the audience was asked to fill out an evaluation questionnaire aimed at assessing whether they enjoyed the event and found it useful in relation to their activity. Participants were required to evaluate the different aspects of the event ranking each statement from 1 (which expressed strong disagreement with the remark) to 4 (which expressed strong agreement with the remark).

The table below shows the items presented in the evaluation questionnaire:

Evaluation Questionnaire - Items	
1	The information that you received before the event was adequate
2	The organisation and infrastructure of the event were good
3	The event fulfilled your expectations
4	The speakers and moderators contributed to a clear and effective Workshop
5	The event in its whole allowed dynamic exchanges among participants

The results of the Workshop evaluation questionnaire, as presented in the graph below, show that the participants evaluated the event in a very positive way, especially appreciating the possibility to interact with the other participants, the organisation of the Workshop and the usefulness of information provided. The total number of questionnaires collected was 25.

All items presented in the questionnaire received more than 85% of completely positive feedback. The negative feedback was related to the possibility of increasing the time dedicated to participant interactions.



The evaluation questionnaire offered the opportunity to provide further comments and possible suggestions. Among the most significant comments registered, a few participants underlined that it would be useful to organize a future workshop with more practical examples on e-services.

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