A Guide to Implement Open Data in Public Agencies

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Agenda

- Introduction
- State of the Art
  - Experiences reported in bibliography
  - OD-MM
  - Expert’s opinion
- Open Data Implementation Guide
  - Roadmap
  - Recommendations
- Conclusions
Introduction

- **Data reuse**: key task to promote the capacity of innovation.

- **Impulse of policies**: are enabling a revolution in the way of distributing and consuming **PSI** (Public Sector Information).

- **Publish data**: (in a structured way) is:
  - a necessary condition to implement new applications and services
  - *it is not realistic to expect that innovation occurs automatically.*

- **Action plan** is required to:
  - stimulate the consumption of datasets
  - create new applications
  - drive an economical area, reducing the cost of reuse.
Introduction

Elements to consider in a plan are:
- gathering information from citizens to know the most relevant information to them
- incorporating social networks to common channels of participation
- OGD projects succeed where they satisfy the existent demand of information
- In short, there must be an active partnership between government and private stakeholders.

It is necessary to spread out the efforts made by PAs:
- establishing a set of indicators to facilitate measuring and plan targets compliance.

In this context:
- we give some recommendations to address this complex task
- we synthetize in a roadmap the implantation of a OGD ecosystem
- the Open Data Implantation Guide (ODIG) provides 15 recommendations
- If PAs follow ODIG recommendations, then they will have a maturity level equal to or above 3 from a maximum of 4 in the maturity model developed by us
State of the art

Three sources provided information for the development of recommendations tailored to reality:

1. The bibliography in OGD subject from which different proposals of OGD implementation arise
2. Related to the results of the Open Data Maturity Model (ODMM) application, from which are collected the recommendations suggested by the model
3. A survey carried out by stakeholders and OGD experts around the world
State of the art

1. Experiences reported in the bibliography

- Obama’s memo: the open government directive instructs PAs to include in their plans:
  - links with information about their FOIA processing and processes
  - agency's capacity to analyze, coordinate, and respond in a timely manner
  - milestones that detail how the agency will reduce its pending backlog of outstanding FOIA requests by at least 10% each year.

- PAs to take 3 steps to the goal of creating an OG:
  - (1) Publish OGD online
  - (2) Improve the quality of OGD
  - (3) Create and institutionalize a culture of OGD.

- Required components of the OGD plans developed by PAs are:
  - Transparency; Participation; Collaboration;
  - Flagship initiative;
  - Public and agency involvement.
State of the art

1. Experiences reported in the bibliography

- **U.S. government**: a document establishes **4 strategic principles** to guide initiatives in digital government:
  - Focus on information; Shared platform; Focus on the customer; and Security and privacy.

- The government of **Australia**:
  - Provides **13 recommendations** as a guide to Government 2.0.

- **A private proposal** (Lee & Kwak, 2011):
  - Identify **10 key challenges** for OGD implementation in 3 dimensions:
    - Organizational; Technology; and Government-wide challenges.
  - Present **15 recommendations** that PAs can use to implement their OGI.

- **ORSI (2010)**:
  - **10 measures** are proposed for a local government.

- **Specific scope in the U.S.**:
  - **8 steps guide** designed for transportation agencies.
2. Recommendations collected from the OD-MM maturity model

- OD-MM applied to 6 PAs in 3 countries in Latin America (Chile, Colombia and El Salvador), provided a diagnosis to each PA.

- Each diagnosis generates its corresponding roadmap with recommendations to continue evolving to the next level of the MM.

- Recommendations to improve on lesser capacity level issues detected in the application of the OD-MM implementation are typical of a more advanced stage of e-gov.
State of the art

2. Recommendations collected from de OD-MM maturity model

From the recommendations obtained from the roadmaps generated by OD-MM, the suggestions generated are:

- **Create training initiatives** on issues related to OGD. Create an OGD specific training plan identifying needs of training and other pertinent matters.

- **Manage projects with established procedures.** Create a PMO to ensure the compliance of standard procedures in management of OGD projects.

- **Establish metrics to assess OGI.** Create a regular and systematic assessment plan to identify a set of appropriate metrics to evaluate OGI performance.

- **Publish numerous open data** to the community, covering the entire organization.

- **Create full indicators,** with internal tracking. Perform a light analysis of results and propose evident improvement measures.

- **Offer documents** either of informative or strategic and technical character.

- **Offer some self-financing opportunity** or give adequate information about the possibility of external financing usable in the OGD project development.
State of the art

3. Expert’s Opinion

- Consultations to more than 50 stakeholders and OGD experts from 15 countries of 4 continents gave a first-source perception about impacts, either social or economic, that OGD have, its eventual reuse, and recommendations to fostering OGDs.
3. Expert’s Opinion

**Survey Methodology:**

- The poll had 9 questions (2 were open answers and optional), that could be answered in few minutes. Built in a Google doc format, providing the chance of answering directly on the web.
- Identification of a group of experts in OGD, for the poll delivery.
- First three questions try to capture the importance of OGD for the expert, specifically on social and economic impact.
- It is also important to know their opinion on issues such as the most relevant scopes, costs, benefits, risks and barriers for the OGD implementation.
- They responded an open question about their immediate experience regarding to specific results of some impact appreciated, either social or economic, resultant of OGD and/or its subsequent reuse.
- An open question remained for further comments to help promoting OGI
State of the art

3. Expert’s Opinion

Survey Results:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Scope</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transport</td>
<td>17%</td>
</tr>
<tr>
<td>2</td>
<td>Transparency</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>Environment</td>
<td>9%</td>
</tr>
<tr>
<td>4</td>
<td>Culture and Recreation</td>
<td>7%</td>
</tr>
<tr>
<td>5</td>
<td>Public Administration</td>
<td>7%</td>
</tr>
<tr>
<td>6</td>
<td>Meteorology</td>
<td>6%</td>
</tr>
<tr>
<td>7</td>
<td>Tourism</td>
<td>5%</td>
</tr>
<tr>
<td>8</td>
<td>Delinquency</td>
<td>5%</td>
</tr>
<tr>
<td>9</td>
<td>Education</td>
<td>5%</td>
</tr>
<tr>
<td>10</td>
<td>Finances</td>
<td>5%</td>
</tr>
<tr>
<td>11</td>
<td>Health</td>
<td>4%</td>
</tr>
<tr>
<td>12</td>
<td>Business</td>
<td>4%</td>
</tr>
<tr>
<td>13</td>
<td>Properties and Land Registry</td>
<td>4%</td>
</tr>
<tr>
<td>14</td>
<td>Political scope</td>
<td>4%</td>
</tr>
<tr>
<td>15</td>
<td>Scientific</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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State of the art

3. Expert’s Opinion

Survey Results:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Benefit</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Transparency</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>Participation</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>Trust</td>
<td>17%</td>
</tr>
<tr>
<td>4</td>
<td>Efficiency and effectiveness of public policies</td>
<td>14%</td>
</tr>
<tr>
<td>5</td>
<td>Economic development</td>
<td>12%</td>
</tr>
<tr>
<td>6</td>
<td>Entrepreneurship</td>
<td>6%</td>
</tr>
<tr>
<td>7</td>
<td>Quality of life</td>
<td>3%</td>
</tr>
<tr>
<td>8</td>
<td>Updated information/knowledge</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
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## State of the art

### 3. Expert’s Opinion

- **Survey Results:**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Barriers</th>
<th>%</th>
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<tbody>
<tr>
<td>1</td>
<td>Lack of political will</td>
<td>20%</td>
</tr>
<tr>
<td>2</td>
<td>Cultural problems</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>Lack of laws and regulations</td>
<td>16%</td>
</tr>
<tr>
<td>4</td>
<td>Lack of leadership</td>
<td>14%</td>
</tr>
<tr>
<td>5</td>
<td>Lack of qualified personnel</td>
<td>12%</td>
</tr>
<tr>
<td>6</td>
<td>Ignorance</td>
<td>12%</td>
</tr>
<tr>
<td>7</td>
<td>Lack of confidence</td>
<td>8%</td>
</tr>
<tr>
<td>8</td>
<td>Very high costs</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</tbody>
</table>

**Barrier for OGD Implantation**
### State of the art

#### 3. Expert’s Opinion

**Survey Results:**

<table>
<thead>
<tr>
<th>#</th>
<th>Costs</th>
<th>%</th>
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<tbody>
<tr>
<td>1</td>
<td>Sensible data</td>
<td>39%</td>
</tr>
<tr>
<td>2</td>
<td>Processing cost</td>
<td>21%</td>
</tr>
<tr>
<td>3</td>
<td>High investments</td>
<td>14%</td>
</tr>
<tr>
<td>4</td>
<td>None</td>
<td>11%</td>
</tr>
<tr>
<td>5</td>
<td>Publication of useless data / data quality is poor</td>
<td>7%</td>
</tr>
<tr>
<td>6</td>
<td>Data not reused</td>
<td>4%</td>
</tr>
<tr>
<td>7</td>
<td>Regulation</td>
<td>4%</td>
</tr>
<tr>
<td>8</td>
<td>Citizen’s fear</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>OGD Costs and Limitations</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
State of the art

3. Expert’s Opinion

Survey Results:

Some comments given by the experts are:

- Difficulties in impacts measuring; there is a consensus about existent impacts, but measuring the increase of trust in PAs does not seem easy.

- Impacts in PA are also mentioned, by improving internal processes. This with respect to organization and classification of information, to make it more accessible. Additionally, fostering innovation in the country is not a minor issue.

- More training and divulgence: Several comments point out to the need of sensitizing authorities with seminars, divulgence and training campaigns for OGD issues.

- Other comments emphasize the urgency of these issues and the need to accelerate data opening processes, otherwise public pressure will become stronger increasing the discredit of government institutions.
State of the art

Comparing Proposals

- Recommendations of the Australian Government
- U.S. government
- ORSI (2010) for local governments as municipalities,
- Private proposal of Lee & Kwak (2011)
- An implementation proposal in a specific scope of application such as transport (Kaufman & Wagner, 2012)

In all proposals is mentioned as an important action:

- "A declaration of open government by the government"
- "Develop and communicate a government-wide strategy"
- “Coordinate with leadership, guidance and support”
- “Align OGI with the agency’s goals”
- “Institutionalize OGI” and “create and institutionalize a culture of OGD”.
State of the art

Comparing Proposals

- **Opening:**
  - "Make PSI open, accessible and reusable" (Australia)
  - "Public data opening “ (ORSI)
  - "consider conducting pilot projects“ (Lee & Kwak, 2011),
  - “flagship initiatives” (US).
  - "Find your data; Convert data; and Test your output" (the way to operationalize)

- **Collaboration:**
  - "Encourage public servants to engage online" (Gruen, 2009)
  - "using tools of internal collaborative work“
  - "encourage internal participation in the city council" (ORSI, 2010)
  - "integrate public engagement applications" (Lee & Kwak, 2011).

- **Accessibility:**
  - "create and maintain a dialogue" (Kaufman & Wagner, 2012)
  - "platforms of participation and citizen’s collaboration" (ORSI, 2010)
  - "use a democratic, bottom-up approach" (Lee & Kwak, 2011).
Open Data Implementation Guide (ODIG)

Some of the principles and criteria considered for the ODIG design:

- **Simplicity**: Time of implementation should not be too extensive. If some laws are not required, initial results should be available within 18 months.

- **Quick-win**: means a quick initial development with some visible results that could help legitimizing the initiative and obtaining additional support from stakeholders. This involves the need of a subsequent long-term development, but experience acquired at the beginnings and its legitimization can facilitate the concretion of the following steps.

- **Maturity level**: this guide intends to provide the first steps towards the development of OGD in a PA. Still, if this ODIG can be properly implemented, it can be guaranteed that, submitted to the OD-MM maturity model, the entity could achieve a level 3 of maturity or very close to it (for a maximum of 4).

- **Share experience**: it is always worth to consider the learning and exchange of experiences between countries and institutions to move forward.

- **Data liberation**: The data considered in ODIG are those contained and recorded in any format; they are collected, produced, and/or received by PAs, and should be available to the public.
Open Data Implementation Guide (ODIG)

Roadmap:

1) Have an organization appropriate to build OGD (not necessarily equal to the existent, for the management of traditional e-gov activities)
2) Hire and generate a training plan to provide qualified professionals in OGD.
3) Articulate an institutional statement provided by the Presidency in favor of OGD asap
4) Have an interoperability platform between different PAs (desirable).
5) Datasets opening. Carry out a market research regarding to the most relevant data that companies/citizenship are requiring.
6) Develop an OGD policy including the adoption of standard open formats to facilitate its later reuse.
7) Construction of an official website of OGD including results of previous study with best practices in the field.
8) Establish an action plan to stimulate data consumption between companies.
9) Create alliances and agreements with stakeholders from society and private sector to promote specific projects of data reuse of a public value for citizens and/or PAs.
10) Establish a measurement of initial diagnosis of PAs maturity level regarding to OGD, to serve as a baseline in the periodic measurement of progresses expected and approaches, and to facilitate necessary corrective and timely decision making.
Open Data Implementation Guide (ODIG)

15 recommendations:

- **THE EXISTENCE OF AN INSTITUTIONAL FRAMEWORK WITH A RECOGNIZED ORGANIZATION FOR OGD:** Starting point to implement an OGI with success. It might be ascribed to an existing e-gov initiative or related organization. It must generate an organizational structure. For example, it is desirable to have a person in charge of PSI re-use, a contents manager who knows the procedures for data processing, with knowledge of DB and applications, and web portals.

- **EXISTENCE OF A RECOGNIZED LEADER IN CHARGE OF IMPLEMENTING AN OGD INITIATIVE:** It is necessary to appoint a suitable and empowered person to hold a position that requires technical skills and a good political management to interact with different social levels of the public sector, and organizations of the civil world.

- **FORMULATION OF AN OGD STRATEGIC DEVELOPMENT PLAN:** When formulating a plan, the recommendation is to involve different social actors and at diverse instances; namely, to generate seminars inviting diverse social organizations to make their contributions; in parallel, leave enough room on the website for the citizen feedback. Although the process seems slower, in the long-term will generate greater legitimacy. The advice is to provide activities to the short, medium and long term plan. Short term measures must be visible enough to generate a positive impact on the population and thus, more support for long term actions.
15 recommendations:

- **CONSTRUCTION AND DELIVERY OF NECESSARY LAWS TO THE CONGRESS FOR A BETTER OPERATION OF THE OGD**: May vary from country to country and even omitted, but in general it is necessary to promulgate laws related to the regulation of transparency and protection of information. After this promulgation, training and divulgation of them is the next step for a better understanding/interpretation of their scopes.

- **PROMULGATION OF POLICIES AND INTERNAL REGULATIONS**: Standards are important, but to keep evidence of their compliance through various control mechanisms. The pertinent authority must ensure a proper understanding of the standards. An issue related to this point is the formulation of an open data policy including the adoption of open standards formats to facilitate their later reuse.

- **TRAINING PLAN IN OGD**: It is essential to have support of trained personnel. An ‘On the way’ learning is not enough, or that more advanced professionals in charge should be able to solve problems. Experience shows that this long-term strategy is inadequate (increase the costs). After about six months, there will be available a significant number of key personnel trained in OGD (digital comm. systems, IT tools, e-services, etc.)

- **PROJECT MANAGEMENT OFFICE DEVELOPMENT**: The OGD implementation requires the development of several projects; it is necessary to ensure the compliance of standard procedures in project management (weakness in the field of software engineering)
**15 recommendations:**

- **HAVE A PERFORMANCE ASSESSMENT SYSTEM OF THE PROJECTS:** The experiences indicate that often no formal metrics mechanisms are present to measure projects performance.

- **DEVELOPMENT OF A STUDY OF REQUIRED ICT INFRASTRUCTURE CAPACITY:** Decision makers must be aware of safeguarding that systems will have sufficient capacity to manage the demands (i.e., avoid equipment’s saturation with WS).

- **GRADUALLY INCORPORATE SEMANTIC TECHNOLOGIES:** These technologies are available today and it is a need to incorporate them to train technical staff (reaching levels 4 and 5 stars). The use of these technologies allows to manage a multiplicity of catalogs of different sources. It facilitates interoperability, data aggregation, and catalogs, plus its updating from external sources.

- **DEVELOPMENT OF A FIRST OGI:** This first initiative (pilot) must be the most emblematic and with significant impact in the short term. Identification of the most relevant information and at the same time easier to open; it is important to consider citizens’ participation.
Open Data Implementation Guide (ODIG)

15 recommendations:

- **EXISTENCE AND MANAGEMENT OF DATASETS INDICATORS FOR ACCESS AND/OR DOWNLOADING, TOGETHER WITH DATA MONITORING**: This is essential to assess the level of success (especially to the first initiative), taking appropriate corrective actions. It is recommended to complement it with periodic public opinion polls.

- **PROMOTION ACTIONS FOR RE-USE**: Offering documents of strategic and technical character encourage the use of OGD. Speeches, workshops, seminars, applications contests, are some of the initiatives that must have available in a systematically way. The recommendation is to publish successful stories with metrics that establish the benefits and impacts that they had for users if possible.

- **EXISTENCE OF A CHANNEL FOR COMPLAINTS AND CONFLICTS RESOLUTION**: The portal must have at least a form available with clear instructions, helpful to canalize users difficulties with data reuse. This mechanism will be essential to improve aspects related to the reuse.

- **EXISTENCE OF A FORMAL CHANNEL OF PARTICIPATION AND COLLABORATION OF CIVIL SOCIETY**: Participation and cooperation of citizens should be the cornerstone of any OGD project to ensure its success. Procedures and verification of opinions and suggestions must be available for consultation before future improvements.
Conclusions

- **Recurrent elements in the bibliography:** related to political leadership:
  - Cited as critical to a successful OGD implementation
  - It is present in all the proposals of OGD implementation plans
  - It emerges as one of the weaknesses found in the OD-MM application
  - All OGD experts polled emphasize it, **so its presence is natural in the ODIG.**

- The new elements in the actions proposed by the ODIG are:
  - the formulation of OGD training plans,
  - the formulation by the PA of a strategic OGD development plan,
  - having a performance evaluation system of OGD projects, including the development of a PMO.

- The experience of applying a pilot to 6 PAs in three LA countries:
  - demonstrates that the proposed ODIG, assumes its weaknesses detected in the diagnosis of these PAs.
  - when following the actions proposed by ODIG, these PAs will reach level 3 of maturity, or very close to it (from a maximum of 4).
Acknowledgement

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