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# Open Data Ireland: Evaluation Framework

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## Glossary

COBIT	Control Objectives for Information and Related Technology
IRF	Independent Reporting Framework
LFA	Logical Framework Approach
MSC	Most Significant Change
ODDC	Open Data in Developing Countries (project)
OGP	Open Government Partnership
OKFN	Open Knowledge Foundation
SIG	(Open Data Ireland) Steering and Implementation Group

## 1 Introduction

Open Government Data supports a number of different objectives; it facilitates transparency and accountability in Government, while also facilitating business, innovation and planning activities. Open Data initiatives create opportunities to exploit data in new and unforeseen ways, especially as more and more datasets become available. To maximise the benefit of Open Data for society, synergies and collaboration between the different stakeholders need to be established - between society, government, research, libraries and archives, but ultimately also establishing interoperability with private and business data sources.

The Open Data Ireland Roadmap sets out a detailed plan for the objectives, structure and actions necessary to advance the publication of national and regional Open Data in Ireland for maximum impact (Lee et al. 2014). In order to ensure the roadmap is on-track, targets are being achieved and the initiative is resulting in positive change, an evaluation framework is required.

This document presents an evaluation framework for the Open Data Ireland initiative. The purpose of this framework is threefold: (i) to assess the current state of readiness for Open Data in Ireland, (ii) to monitor and assess the ongoing progress of the initiative, ensuring actions outlined in the roadmap are being carried out and that the initiative's overarching objectives are being met, and (iii) to measure the actual economic, social and political impact of the initiative. The first aspect of evaluation, *readiness*, is addressed in the 'Open Data Ireland: Best Practice Handbook', which provides a detailed insight into current Irish practice for all of the proposed Open Data Ecosystem elements (Lee & Cyganiak 2014). The second aspect of evaluation, *implementation*, is relatively straight forward to assess; however, it is also important to ensure an adequate risk-management plan is in place so that potential threats and delays can be monitored and mitigated. The third aspect of evaluation, *impact*, is more complex and requires careful planning and execution. Open Data impact evaluation is currently an active area of research and investigation.

The evaluation framework in this paper presents the recommendations of the authors in the context of the state-of-the-art Open Data and eGovernment evaluation best practices, for the Irish national Open Data initiative.

## 2 Open Data Ireland Objectives

The following short, medium and long-term objectives are defined in the Open Data Ireland Roadmap (Lee et al. 2014)

### 2.1 Short-term Objectives (1 year)

- S.1 Agree a National Open Data Strategy, including commitments, goals, principles, and guidelines, using the Best Practice Handbook and this Roadmap.
- S.2 Align the National Open Data Strategy, with other national data strategies, such as the National Spatial Data Strategy, the Data Sharing and Governance Bill and those set out by the National Statistics Board.
- S.3 Agree a National Open Data Roadmap, including detailed actions and time-frame, based on this document.
- S.4 Agree an Open Data License to use for all Irish Open Data, as suggested in the Best Practice Handbook.
- S.5 Publish data on a national portal so that all government data that has been released can be found easily in one place.
- S.6 Release high-quality Open Data that is timely, comprehensive, and accurate. To the extent possible, data will be in their original, unmodified form and at the finest level of granularity available.
- S.7 Release as much data as possible, and where it is not possible to offer free access at present, promote the benefits and encourage the allowance of free access to data.
- S.8 Release at least 10% of Open Data as 5-star Linked Open Data.
- S.9 Develop links with civil society organisations, the business community and citizens to allow the public to provide feedback on the most important data they would like released.
- S.10 Encourage innovative uses of data through the organisation of challenges, prizes or mentoring for data users in our individual jurisdictions.
- S.11 Increase the capacity of public bodies to publish Open Data.
- S.12 Provide continuous evaluation of the progress and impact of the Open Data initiative.

### 2.2 Medium-term Objectives (2 years)

- M.1 Define a recommended set of standards for the publication of Irish Open Data, to facilitate internal and external data interoperability
- M.2 Work to increase Open Data literacy and encourage people, such as developers of applications and civil society organisations, to unlock the value of Open Data.
- M.3 Make key datasets, namely National Statistics, National Maps, National Elections and National budgets available and discoverable, and accessible.
- M.4 Put in place a preservation strategy for Open Data.
- M.5 Release at least 20% of Open Data as 5-star Linked Open Data.
- M.6 Develop a cross-sector data infrastructure ensuring data interoperability

### 2.3 Long-term Objectives (3 years)

- L.1 Establish an expectation that all government data be published openly by default.
- L.2 Release at least 40% of Open Data as 5-star Linked Open Data.
- L.3 Facilitate an Open Government culture across the public sector.
- L.4 Determine the to-date economic impact of Open Data in Ireland.
- L.5 Improve overall transparency of the Irish public sector and increase the levels of trust.
- L.6 Ensure the individual's right to privacy is protected.

## 3 State-of-the-Art

### 3.1 Open Data Evaluation

In the ‘Open Data Ireland: Best Practice Handbook’, we outlined current international best practice in terms of Open Data evaluation. Open Data evaluation and assessment frameworks can be grouped into three broad categories: readiness assessments, implementation evaluations and impact assessments (Davies, Perini, et al. 2013). Readiness studies seek to assess whether the conditions in a country, city or sector might be appropriate for an Open Data initiative to be effective, and may seek to also highlight areas where investment or effort would be needed to get ready for an Open Data initiative, for example, the World Bank’s Readiness Assessment Tool<sup>1</sup>. Studies of implementation seek to assess whether the conditions for Open Data, or Open Data itself, actually exist in a country, city or sector: that is, whether Open Data policies are being implemented, for example, OKFN’s Open Data Index, the Open Data Barometer and the OGP’s Independent Reporting Mechanism (IRM)<sup>2</sup>. Impact studies ask whether Open Data has led to change. Generally they focus on whether Open Data has brought one of the specific benefit that Open Data advocates suggested would result from opening datasets – such as economic growth or democratic empowerment. While examples of readiness assessments and implementation evaluations are listed in ‘Researching the Emerging Impacts of Open Data: ODDC Conceptual Framework’, the authors admit that “as yet, there are no large-scale rigorous studies of Open Data impacts, and most work remains at the level of ad-hoc and isolated case studies or anecdotes.”

#### 3.1.1 Case Studies

The general benefits of Open Data initiatives are cited as: government transparency, government efficiency, environmental sustainability, social inclusion, economic growth and entrepreneurial activity. These are the groupings that the Open Data Barometer uses to measure impact (Davies, Farhan, et al. 2013). The expert survey researchers looked for media and academic mentions of where open data had been used, and had been cited as the cause of some substantive change, across these groupings. Following on from this research, in the Exploring the Emerging Impacts of Open Data in Developing Countries (ODDC) project, in-depth case studies of Open Data in use in a range of governance settings and country contexts across the developing world are examined, exploring the impact of Open Data under difference disciplinary lenses (political, economic and social) (Davies, Perini, et al. 2013). The ODDC highlights six key areas that each case study should address:

- The context for open data
- The supply of open data
- Technical platforms and standards
- The context of the specific governance setting
- Intermediaries and data flow
- Actions and impacts

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<sup>1</sup> <http://data.worldbank.org/about/open-government-data-toolkit/readiness-assessment-tool>

<sup>2</sup> <http://www.opengovpartnership.org/independent-reporting-mechanism>

### 3.1.2 Economic Impact Evaluation

There has been many international studies carried out to determine the potential and actual economic impact of Open Data. These include Graham Vickery's study into the value of PSI re-use in Europe, commissioned by the European Commission (Vickery 2011), McKinsey's 2013 report on 'Open data: Unlocking innovation and performance with liquid information' (Manyika et al. 2013), and CapGemini's 2013 report into 'The Open Data Economy: Unlocking Economic Value by Opening Government and Public Data' (Tinholt 2013). There have also been a number of national economic impact studies, many of which focus on a specific sector, such as the Spanish 'Characterization Study of the Infomediary Sector' (Datos.gob.es 2012), the Danish Enterprise and Construction Authority's study into 'The value of Danish address data' (Danish Enterprise and Construction Authority 2010), and the UK Ordnance Survey's 'Open Data Economic Value Study' (UK Ordnance Survey 2013). In all of these studies, there is not a standardised way for evaluating economic impact or an acceptance of metrics that underpin the assessment of value. This in fact is one of the recommendations from the UK Ordnance Survey's report:

*The consultants recommend that OS, in conjunction with the geospatial industry sponsor an initiative to establish common methodologies for evaluating economic value from proposed policy initiatives ideally before rather than after the political decisions have been made.*

## 3.2 Governance and Evaluation Frameworks

In this section we present examples of governance and evaluation frameworks, which may be adapted to Open Data initiatives for monitoring and assessment purposes.

### 3.2.1 COBIT Framework

Control Objectives for Information and Related Technology (COBIT) is a business framework created by ISACA A for the Governance and Management of Enterprise IT (ISACA 2012). The current version, COBIT 5, was published in 2012. COBIT 5 is based on five key principles, as shown in Figure 1. The separation of governance from management echoes the structure of the Open Data Ireland initiative, with the Open Data Board responsible for the governance of the initiative and the Steering and Implementation Group responsible for the management of the initiative.

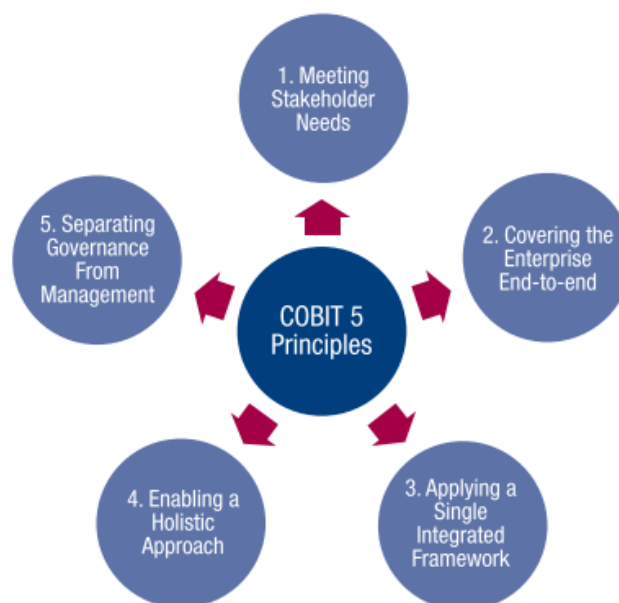


Figure 1: COBIT 5 Principles (ISACA 2012)



### 3.2.2 Logical Framework Approach

The Logical Framework Approach (LFA) is an analytical process and set of tools used to support objectives-oriented project planning and management. The following information is extracted from the Guide to the Logical Framework Approach, prepared by the Government of the Republic of Serbia and the EU Integration Office (Government of the Republic of Serbia 2011). The LFA provides a set of interlocking concepts which are used as part of an iterative process to aid structured and systematic analysis of a project or programme idea. Originally developed and applied in science (NASA) and the private sector (management by objectives) for the planning and management of complex projects, the LFA was first formally adopted as a planning tool for overseas development activities by USAID in the early 1970s. Since then it has been adopted and adapted by a large number of agencies involved in providing development assistance. They include the British DFID, Canada's CIDA, the OECD Expert Group on Aid Evaluation and the International Service for National Agricultural Research (ISNAR).

The LFA is composed of two stages used in project identification and formulation:

- The **Analysis Stage** should be carried out as an iterative learning process, rather than as a simple set of linear 'steps'. For example, while stakeholder analysis must be carried out early in the process, it must be reviewed and refined as new questions are asked and new information comes to light.
- In the **Planning Stage** the results of the analysis are transcribed into a practical, operational plan ready to be implemented. It is the stage where the project is technically designed. This stage is again an iterative process, as it may be necessary to review and revise the scope of project activities and expected results once the resource implications and budget become clearer.

The results of the logical framework analysis are presented and further analysed in the Logframe matrix. The matrix essentially provides a summary of the project down to the activity level. The Logframe consists of a matrix with four columns and four (or more) rows, summarising the key elements of a project, namely:

- The project's hierarchy of objectives (Project Description or Project Intervention Logic);
- The project environment and key external factors critical to the project's success (Assumptions); and
- How the project's achievements will be monitored and evaluated (Indicators and Sources of Verification).

The Logframe also provides the basis on which resource requirements (inputs) and costs (budget) are determined.

Logic of intervention	Objectively Verifiable Indicators	Sources of Verification	Assumptions
Overall Objective			
Purpose			
Results			
Activities	Means	Costs	
			Preconditions

Figure 2: LFA Logframe (Government of the Republic of Serbia 2011)

### 3.2.3 Most Significant Change

The most significant change (MSC) technique is a form of participatory monitoring and evaluation. The following information is extracted from the 'The Most Significant Change ( MSC ) Technique, by the Rick Davies and Jess Dart (Davies & Dart 2005). MSC is participatory because many project stakeholders are involved both in deciding the sorts of change to be recorded and in analysing the data. It is a form of monitoring because it occurs throughout the program cycle and provides information to help people manage the program. It contributes to evaluation because it provides data on impact and outcomes that can be used to help assess the performance of the program as a whole.

Essentially, the process involves the collection of significant change (SC) stories emanating from the field level, and the systematic selection of the most significant of these stories by panels of designated stakeholders or staff. The designated staff and stakeholders are initially involved by 'searching' for project impact. Once changes have been captured, various people sit down together, read the stories aloud and have regular and often in-depth discussions about the value of these reported changes. When the technique is implemented successfully, whole teams of people begin to focus their attention on program impact.

## 4 Open Data Ireland Evaluation Framework

Adopting the Open Data Barometer approach, we propose framing the Open Data Ireland Evaluation Framework in terms of readiness, implementation and impact.

### 4.1 Readiness

The 'Open Data Ireland: Best Practice Handbook' provides a detailed insight into current Irish practice for all of the proposed Open Data Ecosystem elements (Lee & Cyganiak 2014). It can therefore be considered a substantial study of Open Data readiness in Ireland. If additional exploration into readiness assessment is deemed necessary, we recommend the use of an international readiness assessment framework, such as the World Bank's Open Government Data Working Group's 'Open Data Readiness Assessment' tool<sup>3</sup>.

### 4.2 Implementation

The Open Data Ireland Roadmap sets out a detailed plan for the objectives, structure and actions necessary to advance the publication of national and regional Open Data in Ireland for maximum impact (Lee et al. 2014). For each of the Open Data Ecosystem elements, a list of specific actions are defined, as well as a timeframe within which the action should be carried out, who is responsible for completing the action, and what overarching objectives the action aims to achieve. The implementation of the Open Data Ireland Roadmap could be managed using a framework, such as the COBIT Framework or the Logical Framework Approach. While the Open Data Board is responsible for the governance of the Open Data Ireland initiative, the Steering and Implementation Group (SIG) is responsible for its management. Therefore, the progress of the implementation evaluation should be published by SIG annually.

As well as managing the implementation of the roadmap locally, the progress of the Open Data Ireland initiative as a whole will be continually monitored through international evaluation indicators, such as the OGP Independent Reporting Mechanism, Open Data Barometer, and the OKFN Open Data Index. The Open Data Board and SIG should incorporate these studies into the overall evaluation framework.

### 4.3 Impact

In order to evaluate the impact of the Open Data Ireland initiative, we recommend both a macro and micro approach. A macro impact evaluation will examine the broad outcomes of the initiative from a social, political and economic perspective, similar to those studies outlined in section Economic Impact Evaluation. At a micro level, particular case-studies can be explored to get a clear understanding of the impact of Open Data in specific sectors and under a certain set of conditions. The Most Significant Change technique could be used as a framework to capture and analyse particular stories. The observed and measured impact should then be compared to the original objectives outlined in the Open Data Ireland roadmap.

An independent impact review of the Open Data Ireland initiative should be carried out biannually. Academia, civil society and research institutions could also assist with impact assessment strategies.

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<sup>3</sup> <http://data.worldbank.org/about/open-government-data-toolkit/readiness-assessment-tool>

## **5 Conclusion**

In this document, an evaluation framework for Open Data Ireland is outlined, under the categories of readiness, implementation and impact. This framework should be adopted and expanded on by the Open Data Board and Steering and Implementation Group.

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