

Open Government Data: Right to Information for the Citizens

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Abstract

Open access to information, Open access movement for information, initiatives for open government data etc are the major trends of modern educational society. We are going to make a society where there will be no digital divide and every citizen will be information enrich and conscious about his or her rights. In the following article the term open data and its benefit, open government and the organization taking initiatives of it, open government data with its life cycle, principles, perspective, benefits and challenges are discussed in brief. The initiatives taken by the government and other organizations in India are also given in this article.

Keywords: Open Data, Government Data, Open Government, Open Government Data, NDSAP, DLI, NDL

1. Introduction

From origins in Freedom of Information up to the present day, there is growing practice of open government data (OGD) initiatives around the world. The thought of open data initiatives is one of the humble measures to give the citizens the freedom of information without discriminating individuals. Where Open data basically indicate how to enable the free use, reuse, and redistribution of data, Open government data is a subset of Open Data, and is government-related data that is made open to the public. Here in this article the open government data with its perspective, life cycle, benefits and challenges are discussed. Some of the organizations, institutions and government departments which are taking steps and major initiatives for making data open are also given briefly in this study.

2. Open data

Open data basically indicate how to enable the free use, reuse, and redistribution of data. Open data should not discriminate any person and must not restrict the use of the data to a specific field or venture. Thus, data published in an open data format would be “platform independent, machine readable, and made available to the public without restrictions that would impede the re-use of that information”. Hence open data only refers to data that is available free of charge for the general public without any limitations. Open data is considered to be a key enabler of open government (Kuèera et al., 2013). The benefits of Open Data include:

❖ **Transparency:** Open Data supports public oversight of governments and helps reduce corruption by enabling greater transparency. For instance, Open Data makes it easier to monitor government activities, such as tracking public budget expenditures and impacts. It also encourages greater citizen participation in government affairs and supports democratic societies by providing information about voting procedures, locations and ballot issues.



- ❖ **Public Service Improvement:** Open Data gives citizens the raw materials they need to engage their governments and contribute to the improvement of public services. For instance, citizens can use Open Data to contribute to public planning, or provide feedback to government ministries on service quality.
- ❖ **Innovation and Economic Value:** Public data, and their re-use, are key resources for social innovation and economic growth. Open Data provides new opportunities for governments to collaborate with citizens and evaluate public services by giving citizens access to data about those services. Businesses and entrepreneurs are using Open Data to better understand potential markets and build new data-driven products.
- ❖ **Cost effectiveness:** Open Data makes it easier and less costly for government ministries to discover and access their own data or data from other ministries, which reduces acquisition costs, redundancy and overhead.
- ❖ **Efficiency:** Open Data can empower citizens with the ability to alert governments to gaps in public datasets and to provide more accurate information. Open Data makes it easier and less costly for government ministries to discover and access their own data or data from other ministries, which reduces acquisition costs, redundancy and overhead.

3. Open Government

- ❖ Open government is the governing doctrine which holds that citizens have the right to access the documents and proceedings of the government to allow for effective

public oversight. Among recent developments is the theory of open source governance, which advocates the application of the free software movement to democratic principles, enabling interested citizens to get more directly involved in the legislative process. Organizations campaigning for open government are:

- ❖ **Open Government Partnership** - OGP was an organization launched in 2011 to allow domestic reformers to make their own governments across the world more open, accountable, and responsive to citizens. Since 2011, OGP has grown to 75 participating countries today whose government and civil societies work together to develop and implement open government reforms.
- ❖ **Code for All** - Code for All is a non-partisan, non-profit international network of organizations who believe technology leads to new opportunities for citizens to lead a more prominent role in the political sphere and have a positive impact on their communities. The organizations relies on technology to improve government transparency and engage citizens.
- ❖ **Sunlight Foundation** - The Sunlight Foundation is a nonprofit, nonpartisan organization founded in 2006 that uses civic tech, open data, and policy analysis to make information from government and politics more transparent to everyone. Their ultimate vision is to increase democratic participation and achieve changes on political money flow and who can influence government.

4. Open Government Data

Open government data is a subset of Open Data, and is simply government-related data that is made

open to the public (Kuèera et al., 2013). Government data might contain multiple datasets, including budget and spending, population, census, geographical, parliament minutes, etc. It also includes data that is indirectly 'owned' by public administrations (e.g. through agencies), such as data related to climate/pollution, public transportation, congestion/traffic, child care/education.

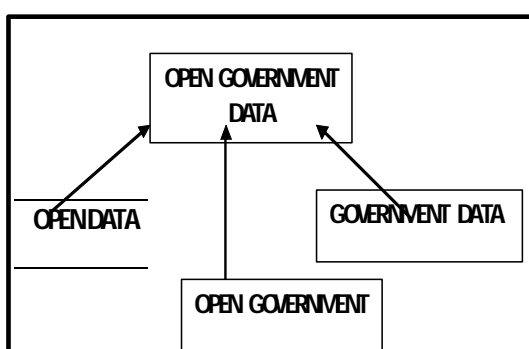


Figure 1: Open Government Data

Open government principles in four key areas:

- ❖ **Fiscal transparency:** By the open government there would be transparency in financial and every monetary dealing in government sectors and the citizens of that country can be informed about the whole activity.
- ❖ **Access to information:** the common people can also get access to information about the activities of the government. The common people have right to information about the decision and policies taken by the government for the welfare of the common people.
- ❖ **Income and asset disclosures:** Income of a democratic government is mainly from the taxes given by the people of the country so the income and asset of government as well as the citizen must be open and fair.

- ❖ **Citizen engagement:** If the citizen can get the information of government activity and can participate in it, the engagement of mass will make the government purpose and policies successful. They will be proud to think themselves a part of the activities of government.

4.1 Open Government Data Life Cycle

- ❖ **Data Creation** — the open government data life-cycle typically starts with the creation of data. In public or governmental entities, the creation of data is usually part of daily procedures, however, it is also possible to collect data for the specific purpose of publishing it.
- ❖ **Data Selection** — This is the process involving selecting the data to be published. This requires removing any private data or personal data, as well as identifying under which conditions will this data be published (potentially through the specification of open government data policies)
- ❖ **Data Harmonization** — this step involves preparing the data to be published in order to conform to publishing standards, such as the Eight Open Government Data Principles
- ❖ **Data Publishing** — this is the actual act of opening up the data by publishing it on government portals.
- ❖ **Data Interlinking** — data interlinking is the final step in the Five Star Scheme for Linked Open Data. This allows published data to have additional value, as the linking of data gives context to its interpretation.
- ❖ **Data Discovery** — the publishing of data is not enough to enable its reuse. Data consumers must discover the existence of open data in order

to be able to consume it. Data discovery can be enhanced by actively raising awareness on its existence.

- ❖ Data Exploration — this step is the most trivial way of consuming data. Here, a user passively examines open data by visualizing or scrutinizing it.
- ❖ Data Exploitation — this step is a more advanced way of consuming data. Data Exploitation enables a user to pro-actively use, reuse or distribute the open data by leading out analysis, creating mashups or innovating upon the open data.
- ❖ Data Curation—while not necessarily occurring at a fixed stage, data curation is vital in ensuring the published data is sustainable. This involves a number of processes, including updating stale data, data and metadata enrichment, data cleansing, etc (Attard et. al., 2015).

4.2 The Eight Open Government Data Principles:

1. Complete — all available public data that is not subject to privacy, security or privilege limitations is made available.
2. Primary — data is made available as it is available at the source, and not aggregated or modified.
3. Timely — data is made available to the public as soon as possible after the actual data is created, in order to preserve the value of the data.
4. Accessible — data is made available to all consumers possible, and with no limitations on its use.
5. Machine Processable — data is published in a structured manner, to allow automated processing.

6. Non-Discriminatory — data is available for all to use, without requiring any registration.
7. Non-Proprietary — data is published in a format which is not controlled exclusively by a single entity.
8. License-Free — other than allowing for reasonable privacy, security and privilege restrictions, data is not subject to any limitations on its use due to copyright, patent, trademark or trade secret regulations.

These principles provide a roadmap for the data publisher and help for being consumed by the stakeholders.

4.3 Perspectives of Open Government Data

Recent research from the University of Manchester's Centre for Development Informatics identifies four different perspectives that derive from OGD's conceptual foundations. These are:

- ❖ The **bureaucratic perspective** – This perspective is associated with ideas of government data – OGD as a government policy that uses greater data management efficiency and effectiveness to improve public service delivery.
- ❖ The **technological perspective** – This perspective is associated with ideas of open data – OGD is a technological innovation that improves the functional qualities of government data infrastructure.
- ❖ The **political perspective** – This perspective is associated with ideas of open government – OGD is akin to a fundamental right that will empower citizens and improve transparency and accountability of government to citizens.

❖ The **economic perspective** – This perspective is emergent from the ideas of open government data itself – OGD as a means to create additional economic value through new products and services.

otherwise. For example, it is directly related to what degree the data is accessible, open, interoperable, complete, and discoverable (Liu et al., 2011). The more the published data is

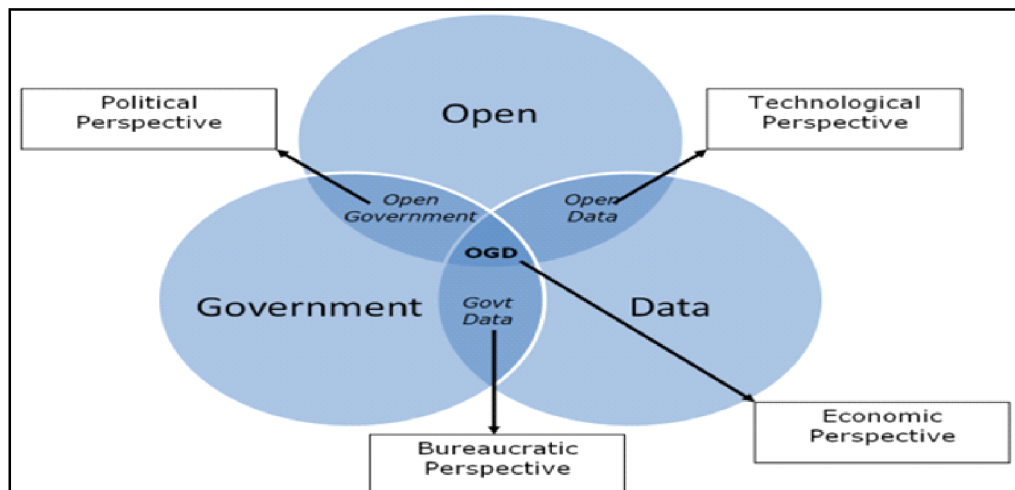


Figure 2. Different Perspectives of Open Government Data

The above figure shows a dominance of bureaucratic and political perspectives. The bureaucratic perspective is strongest within government and is shared to some degree by international organizations and local activists. The political perspective is strongest outside government via international organizations and local activists and is shared to some degree by government stakeholders (Gonzalez-Zapata, 2015).

4.4 Quality Measurement of Open Government Data

❖ **Usability**-This is the most “generic” quality criterion. By usability we mean how easily the published data can be used. It is the most generic as it depends on other quality dimensions whether the published data is usable or

usable, the more potential data consumers are encouraged to reuse and exploit the data.

❖ **Accuracy**-By accuracy we mean the extent to which a data/metadata record correctly describes the respective information. With respect to metadata, this quality dimension directly affects the discoverability of datasets, as good quality metadata enables the dataset to be easily discovered by data consumers (Kuèera et al., 2013).

❖ **Completeness**-This quality dimension deals with the number of completed fields in a data/metadata record. Thus, a record is considered complete only when the record contains all the information required to have the ideal representation of the described data. The completeness of the metadata, like accuracy, also directly affects the discoverability of datasets.

- ❖ **Consistency**-The consistency of record fields depends on whether they follow a consistent syntactical format, without contradiction or discrepancy within the entire catalogue of metadata (Kuèera et al.,2013). Apart from the syntactical format, a field is considered to be consistent if the respective values are selected from a fixed set of options.
- ❖ **Timeliness**-By this quality dimension the extent to which the data or metadata is up to date is meant. The organizational approach affects the timeliness of the published data, which depends on whether the data is directly or indirectly provided by the data provider.
- ❖ **Accessibility**-The accessibility quality dimension has two measures. The cognitive accessibility defines how easy it is for a data consumer to understand the published information. The second measure is the psychological or logical accessibility, which can be defined as the ease with which the relevant dataset is discovered through a data catalogue or repository. This quality dimension is affected by the format in which the data is published, the search tool used, and the discoverability of the dataset.
- ❖ **Openness**-The openness of a dataset directly influences the use, reuse, and redistribution of data. Open data can be technically defined to be open if it is available as a complete set in an open, machine readable format, at a reasonable price which is not more than the cost of reproduction (Kuèera et al., 2013).

4.5 Benefits of Open Government Data:

There is a huge benefit in open government data in different sectors of society like public administration, industry, research etc. For the public administrators the benefit is to speed up, co-ordinate and optimize the administrative process through data exchange, for industrialists it is for new services in business, for researchers it is for quality data accessibility and speed of innovation and for general people of the country it is for transparency, participation and freedom of opinion. These are briefly described in the following table:

Open Government Data	Public Administration	<ul style="list-style-type: none"> · Speed up the co-ordination · Optimization of the administrative processes · Better data usages through data exchange
	Industry	<ul style="list-style-type: none"> · New services · New turnover chances · New business areas
	Research	<ul style="list-style-type: none"> · Better data accessibility · Increase the quality of research findings · Speed up the innovation process
	Citizen	<ul style="list-style-type: none"> · Transparency · Participation · Political forming of opinion · Increase of the capability to act · New services

4.6 Challenges or Issues hindering data from being truly open

There are a number of issues and challenges which hinder governments from making data truly open. These challenges vary between organizational,

economic and financial, policy and legal, and cultural barriers. The main barriers are discussed below:

- ❖ **Awareness:** The concept of open data and what it involves seems unfamiliar for the common people (Verma & Gupta, 2013). For this reason, the value and potential use of raw open data needs to be highlighted. Common people keep faith on the data published from well known publishers. So initiatives have to be taken to make awareness about it.
- ❖ **Motivation:** The provision of raw data can be considered to be extra work without any purpose, especially to public entities such as those described above (Verma & Gupta, 2013). The value of the data generated during day-to-day administration needs to be pointed out. The reuse of open datasets can be a great motivator in portraying the unexpected use of the generated data, and can also help the data producers in understanding the true value of the data they create and publish (Parycek et al., 05, 2014).
- ❖ **Capacity:** It should be available for the use, reuse, and distribution of all but many entities are not so open-minded about the application of open data, and rather focus on the simple publishing of data rather than ensuring that it is of good quality in this aspect. There is the urgent need for the application of standards and large-scale training in order to overcome the issues like public entities' focus on publishing data with no value, rather than other, more relevant, data (Verma & Gupta, 2013), (Zuiderwijk & Janssen, 2014).

- ❖ **Budget provision:** There is the new necessity of having a specific budget allocated for open government data efforts, otherwise there is the risk that open government initiatives are not given the priority they deserve, moreover if public entities do not grasp the true value of open data (Verma & Gupta, 2013).
- ❖ **Technical Support:** Most of the existing government data portals were not envisaged for large-scale open data publishing and consumption. Thus, these public entities now require technical support to update their websites or portals to enable their published data to achieve its highest reuse potential (Eckartz et al., 2014).
- ❖ **Institutionalisation:** Being a relatively new initiative no institutional structure or public entity dedicated solely to this task of making data open, open data tasks are usually assigned to employees whose job was already predefined (Eckartz et al., 2014) (Zuiderwijk & Janssen, 2014). This issue results in no regular monitoring of the open data initiative performance. The establishment of open government initiative policies would help in this challenge.
- ❖ **Conflicting regulations:** Many open government data initiatives still belong to existing legal frameworks concerning freedom of information, reuse of public sector information, and the exchange of data between public entities. The issue lies in the unclear task of how such initiatives can interact, resulting in uncertainty on the possible use of the relevant data (Dulong de Rosnay & Janssen, 2014).

- ❖ **Privacy and data protection:** There is a considerable conflict between open data and the aims of transparency and accountability, and data protection and the right to privacy (Zuiderwijk & Janssen, 2014). This issue requires more research in order to come up with guidelines that can provide a solution to this conflict, however a plausible approach would be to employ access control mechanisms which regulate data access but restricts the openness level of such data.
- ❖ **Copyright and licensing:** The licensing of published data is one of the Eight Open Government Data Principles. The first aspect of this issue is the incompatibility of licenses. Data providers should provide efforts towards publishing their data in an open format, allowing the free and unrestricted use, reuse and distribution of data. The definition of clear data policies is a means to provide a solution to this challenge. The issue of copyright inconsistencies that arise from unclear dataset ownership resulting from data sharing, for example between public entities. This hinders data from being published (Eckartz et al., 2014), (Zuiderwijk & Janssen, 2014).
- ❖ **Competition:** The companies who invested in creating their own data stores, if the same data they created is made public through government open data initiatives, these companies will obviously deem it to be unfair competition as there is the possibility of new competitors who did not need to invest anything but could get the freely available open data. On the other hand, public entities might be reluctant to publish their data openly due to not wanting data belonging

to the public (and paid by taxes) to be used for commercial gain. This limits the openness of the data in question (Dulong de Rosnay & Janssen, 2014).

- ❖ **Liability:** This issue is limited to data providers. Public entities fear being held liable for damage caused by the use of the provided data, due to it being stale, incorrect, or wrongly interpreted (Dulong de Rosnay & Janssen, 09, 2014), (Eckartz et al., 2014). To cater for this fear, many public entities either do not publish their data or otherwise impose restrictions on its use, resulting in data which is not truly open. In the worst case, due to fears of data being used against the publishing entity, such data might not even be collected/ generated any longer (Zuiderwijk & Janssen, 2014).

Considering the above risks or negative impacts, it is vital to find a trade-off for open government initiatives. One must keep in mind the numerous benefits associated with open data, but also cater and prepare for any risks, challenges and issues.

5. Some Open Data Initiatives in India

5.1 NDSAP (National Data Sharing and Accessibility Policy):

NDSAP aims to provide an enabling provision and platform for proactive and open access to the data generated by various Government of India entities. The objective of this policy is to facilitate access to Government of India owned shareable data (along with its usage information) in machine readable form through a wide area network all over the country in a periodically updatable manner, within the framework of various related policies, acts and rules of Government of India, thereby permitting a wider accessibility and usage by public.

5.2 Open Government Data (OGD) Platform India

Open Government Data (OGD) Platform India - data.gov.in - is a platform for supporting Open Data initiative of Government of India. The portal is intended to be used by Government of India Ministries/ Departments their organizations to publish datasets, documents, services, tools and applications collected by them for public use. It intends to increase transparency in the functioning of Government and also open avenues for many more innovative uses of Government Data to give different perspective. It is a joint initiative of Government of India and US Government. Open Government Data Platform India is also packaged as a product and made available in open source for implementation by countries globally.

5.3 REAL Geospatial Open Data Portal 4 India (GOPI)

REAL (Rural Education and Action for Liberation), a non-profit organization formed in 1978. Now we are taking an initiative to educate, enhance and develop the rural India through a platform called "Geospatial Open Portal 4 India" (GOPI). GOPI is nothing but an online portal which aims at collaborating all the open-access remote sensing and GIS (Geographical Information System) data and information products for India.

The portal provides interactive visualization map that explains the data in a simple and effective way which can be understood by the common people. It will enable educators, planners, decision makers and the public to utilize the geospatial data more effectively and utilize it to the maximum potential. This will be useful mainly for decision makers and common people to explore and know about their arena through proven scientific way.

5.4 Natural Scientific data

Scientific Data is a peer-reviewed, open-access journal for descriptions of scientifically valuable datasets, and research that advances the sharing and reuse of scientific data. Scientific Data is an open-access, online-only journal for descriptions of scientifically valuable datasets. The six principles credit, reuse, quality, discovery, open, service are designed to align with and support for scientific data management, which declare that research data should be **Findable, Accessible, Interoperable** and **Reusable**.

5.5 Digital Library of India (DLI)

Digital Library of India (DLI) is a digital collection of freely accessible rare books collected from various libraries in India. DLI project started in early 2000 with the vision to archive all the significant literary, artistic and scientific works of mankind and to preserve digitally and make them available freely for every one over Internet for education, study, appreciation and for future generations. The Project was initiated by the Office of the Principal Scientific Advisor to the Government of India and subsequently taken over by the Department of Electronics and Information Technology (DeitY), Ministry of Communications and Information Technology (MCIT), Govt. of India.

5.6 National Digital Library of India (NDL)

Ministry of Human Resource Development under its National Mission on Education through Information and Communication Technology has initiated the National Digital Library (NDL) pilot project to develop a framework of virtual repository of learning resources. It is being developed at IIT Kharagpur. NDL is designed to hold content of any

language and provides interface support for leading vernacular languages (currently Hindi and Bengali).

6. Conclusion

From the above study we come into conclusion that the open government data is very important for the stakeholders like administrators, politicians, decision makers, researchers as well as common people for transparent and fair activity of the government. The people of a country must information enrich so that he can be aware about his rights, freedom, restrictions etc in his day to day life. If the government activities are open and fair and can easily reach to every citizen of a country then he or she will think himself or herself as a part of the government. So OGD is a very important initiative to give freedom of information to every citizen of the country.

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