Whose Open Data Community is it?
Reflections on the Open Data Ecosystem in India

Sumandro Chattapadhyay
Research Director, The Centre for Internet and Society, India
http://cis-india.org/
sumandro@cis-india.org

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1. Where are the NGOs?

On February 04, 2013, several members of the DataMeet network\(^1\) were invited by the National Data Sharing and Accessibility Policy - Project Management Unit (henceforth, NDSAP-PMU) – the nodal agency responsible for developing, implementing, and managing the Open Government Data Platform of India\(^2\) – to share thoughts on the status of the implementation of the National Data Sharing and Accessibility Policy (henceforth, NDSAP), the open data policy of India, and discuss potentials for collaboration. Among other possibilities, the NDSAP-PMU team proposed that the DataMeet community can contribute to the implementation process of NDSAP by mobilising the developer community associated to the group to build applications using the opened up data and demonstrate the value of open government data to drive greater contribution by government agencies and greater utilisation by citizen groups. For DataMeet, a community of open data users and advocates, this invitation to collaborate sets up a slightly different problematic than that in most of the cases of free and open source software development project. The task here is to develop projects that use already available data, which may not offer significantly return to investment at present, but will accelerate the process of opening up of more valuable government data. The development of such applications that effectively utilise government data to foreground a compelling argument or story, however, requires more than a team of developers – it also require domain experts with a deep sense of the context from which the data is emanating. With a vibrant scene of non-governmental organisations involved in monitoring, analysis, and implementation of developmental projects, many of such domain experts in India are located within such organisations, with some being in the academic institutes as well.

Reporting from an open data community meeting organised by the World Bank at the Indian Institute of Technology, Delhi, on December 10, 2014, Isha Parihar asks: “Where are the NGOs?” She points out that “[t]he discussions around open data [in India] also highlight the absence of non-profit

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1  See: http://datameet.org/
2  See: https://data.gov.in/
organisations among the technology-focused groups, entrepreneurs, and businesses” (Parihar 2015). This observation is especially critical as the meeting was organised by World Bank not only to gather public responses to be presented to Government of India, but also to take stock of the open data community in India. The absence of NGOs, although, does not indicate at the lack of interest of the non-governmental research and advocacy organisations in India to work with government data. Such organisations, on the contrary, have a long history of accessing, using, sharing, and communicating government data obtained through proactive and reactive disclosure mechanisms.

While surveying the data practices of non-governmental, and non-commercial, research and advocacy organisations in India, I found that the lack of a common understanding of the open data community in India, and the lack of ready participation of most research and advocacy organisations in the open data community, emerges from a range of issues (Chattapadhyay 2014). A key issue among these is that the very existence of an established range of actors accessing, using, and re-sharing government data for commercial and non-commercial purposes lead to a business-as-usual approach to the discussion of open government data. Most of these organisations have developed skills, methods, and processes appropriate to a context of closed and poorly-open government data. These practices have reached stickiness and have also ensured effective data-driven activities. The same organisations are, hence, often uncertain regarding how open government data will exactly transform and augment their existing practices, especially they are unsure if embracing open government data will offer benefits that counterbalance the efforts to be put in to ensure that respective government agencies starts opening up their data in a human- and machine-readable manner, using open standards, and open licenses. Addressing these questions in the minds of the research and advocacy organisations would require contributions from various actors of the open data ecosystem – from the government agencies who are to supply open government data, to grassroot organisations and citizens who are to be prepared to consume data-driven products and services being developed by the researchers and developers, and also from the donors and funders who will support the making of such data-driven products and services. What inspires this particular paper is this idea that the open data community can and should mediate between, and ensure participation of, disparate kinds of non-governmental actors towards actively demanding open government data from the government.

In the context of the emerging open data ecosystem in India, the notion of the open data community comes forward both as the problem – in terms of the community not yet being there to effectively take forward the open data agenda – and as the solution – as the component of the ecosystem that can successfully bridge gaps between interests and capacities of various stakeholders. Given the gap and the stakeholder concerned, the open data community is expected to perform various critical

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3 In the sense of one star open data, using Tim Berners-Lee’s ranking system. See: [http://5stardata.info/](http://5stardata.info/).
functions. This paper tracks these conceptualisations of the open data community in India, and explores the question of ‘whose open data community is it’ following three points of entry – (1) how the open data community and its functions are understood, (2) which types of organisations are seen as members of the open data community in India, and (3) who all are by identified as the intended audiences of this open data community.

The paper is based upon an intensive study of fourteen non-commercial and non-governmental research and advocacy organisations in India, and their practices of accessing, using, and sharing government data (Chattapadhyay 2014). The study was conducted as part of, and was supported by, the ‘Exploring the Emerging Impacts of Open Data in Developing Countries’ (henceforth, ODDC) research network managed by the World Wide Web Foundation, and supported by the International Development Research Centre, Canada. The fourteen above mentioned organisations were selected on the basis of their engagements with national-scale government data in India. These organisations mostly directly access government data from various ministries and agencies, or collect primary data in sectors where open or publicly accessible government data is absent. They also perform the task of mediating access to data and information, and enabling its usage by other organisations. A few of the organisations considered in the study do not share data with other organisations at the present, but have the potential – in terms of willingness and capacity – to do so. The process of identifying these organisations began with an ineffective web-based survey, and was finally completed by approaching the most active and known organisations in the open data space in India, and asking them for references to further key organisations. Under no circumstance, this is to present a representative description of non-government and non-commercial organisations working with government data in India, but to bring forward the experiences of major organisations doing the same. A questionnaire was shared with representatives of each of these organisations, and a semi-structured interview was conducted in person on the basis of this questionnaire.

2. Open Data Policy and Portal in India

During the 2010-11 India visit of Barack Obama, President of the United States of America, several collaborations between the Indian and the US governments were launched. One of such initiatives was the Open Government Platform (henceforth, OGPL) – an open source data and content management system that can be customised easily to develop open data portals for various types of agencies, including national government. National Informatics Centre, Ministry of Communications and Information Technology, Government of India (henceforth, NIC) and Office of Citizen Services and Innovative Technologies, General Services Administration, Government of USA, undertook a collaborative software development project to build the Open Government Platform in early 2011.

As the text of the NDSAP document makes explicit, the dominant focus of the Policy is towards describing the desired functioning of the Open Government Data Platform of India – the URL of the same was specified in the Policy itself – as opposed to describing a government-wide re-engineering of data collection, management and publication practices towards opening up government data.

The first draft version of the NDSAP document was published first on May 2011 along with a call for public responses. Although this may have attracted various feedbacks from different stakeholders, only the one submitted by The Centre for Internet and Society, Bengaluru, is publicly accessible from its website (Prakash 2011). None of the suggestions from this submission, however, were reflected in the final version of the policy published in The Gazette of India on March 17, 2012. The policy declared that data produced, collected and collated by the government agencies using public funds should be made publicly available in an organised, well-documented and timely manner, so as to enable the use of such data to produce socio-democratic as well as economic value. The policy covers all ministries, departments, subordinate offices, organisations and autonomous bodies of the central government, and mandates that all 'shareable' ‘non-sensitive’ data should be published through a common government data portal deployed and managed by NIC. Here ‘shareable’ refers to data declared to be such by the government agency that created it, and ‘non-sensitive’ refers to data sharing of which is not prohibited by any central government acts. NDSAP further states that the published data must be available in both human-readable and machine-readable formats, adopt file and metadata standards as specified by NIC, and should be updated regularly.

Following the directive of NDSAP, NIC created the NDSAP Project Management Unit (henceforth, NDSAP-PMU) in 2012 to build the Open Government Data Platform of India. The first version of the Platform was launched in May 2012. It was powered by a thoroughly customised version of the above mentioned OGPL software. Since then the NDSAP-PMU has interpreted its initial mandate of developing and managing the data portal to include various other critical roles such as enforcing adoption of open standards for published datasets, evangelising proactive sharing of government data across agencies through detailed consultation meetings, organising community outreach programmes to induce increased usage of the datasets available from the portal, etc. Informed by its consultations with various government agencies, non-government organisations and citizen groups, it prepared an implementation guidelines document that has already been through a few iterations (Open Government Data Division, National Informatics Centre 2014). This document details out the stages of the data contribution process, including the role and responsibilities of the Data Controllers, relevant metadata and file standards, and management of datasets after they have been published in the Platform. The most recent version of the Platform was launched on February 18, 2014. The website is now powered by an upgraded OGPL built on Drupal 7\(^5\) that implements API based public

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access to the datasets hosted in the platform. The Platform attempts to provide an unified catalog of
data sets submitted to the Platform by various central government agencies. This software allows
users, both governmental and non-governmental, to browse the data catalog, view the metadata
associated with each data set, comment on and rank various aspects of the data set, create basic
visualisations by choosing variables from the dataset, download available data sets and submit
request for those that are not available yet. Further, it has features such as for exporting of published
data sets in various open formats (such as, CSV and XML) irrespective of the format of the original
data sets. In most cases, the submitted data is hosted at and made available from the Platform itself,
while in a few rare cases the Platform provides link to data actually hosted in the server of the data
publishing agency. All central government agencies - Ministries and organisations within it – have
chosen a Data Controller to drive and coordinate the data publication activities of the agency
concerned. Numerous Data Contributors work within each such agency, led by the Data Controller,
to submit data sets to the Platform through a web-based submission and scrutiny process.

3. Overview of the Open Data Ecosystem in India

One of the earliest events that brought together a wide range of organisations and individuals in
India to talk about open data was the barcamp on “Technology, Transparency and Accountability’
organised by Accountability Initiative6, Centre for Policy Research, on June 05, 2011 in Gurgaon
(Accountability Initiative 2011). The event was critical in gathering together more experienced
information activists, especially those connected with the Right to Information movement, and
relatively newer participants in transparency and accountability discussions in India, especially
those who brought in a substantially technology-oriented approach. Several participants of this
barcamp have since played important roles in the making of the open data agenda and practices in
India. However, the interactions among the Right to Information activists and groups in India with
those working with open data are yet to be become significant.

The key groups of actors that have emerged in the Indian open data ecosystem since this barcamp of
2011 are the following:

- **Government Agencies**: NDSAP-PMU is the key actor in this group, while most of the central
government ministries and agencies contribute as data suppliers. The Department of
Electronics and Information Technology, within which the NDSAP-PMU is situated, also
plays an important role by pushing the open data agenda across the ministries.

6 See: http://accountabilityindia.org/
• **Community Network:** DataMeet is the foremost community network of open data enthusiasts, users, and advocates in India. It was started in 2011 by Thejesh GN and S. Ananad, and soon took the shape of an online community centred around the DataMeet mailing list, and an offline community of individuals working across non-government organisations, academic institutes, and software companies, primarily located in Bengaluru. The first OpenDataCamp in India was organised by DataMeet in 2012 in the same city. Since then city chapters of DataMeet have started in Hyderabad, Delhi, Mumbai, and Ahmedabad.

• **Domain Expert Organisations:** These are the non-governmental, and mostly non-commercial, research and advocacy organisation focusing on various thematic sectors, such as budget and expenditure, electoral and legislative activities, water and sanitation etc. This paper is based on a study that primarily interacted to organisations belonging to this group.

• **Data Expert Organisations:** The ecosystem has seen gradual emergence of several actors focusing on providing tools and processes for working with data as products and/or services. Major organisations in this group are Gramener, Mapbox, and SocialCops. The Evidence for Policy Design team of the Harvard University working with several central government ministries towards developing data dashboard, can also be considered as part of this group.

• **Bridging Organisations:** This group is a more diverse one than the others in terms of the functions of the member organisations of this group. These organisations build bridge between different open data actors and other relevant organisations so as to support work with open data. The bridge building activities may involve matchmaking between a NGO that needs help with learning to use data for its activities and programmers who may help the NGO either with customised tools or with capacity training. DataKind is trying to do this type of bridge building. Civic Innovation Lab established by the Center for Knowledge Societies, on the other hand, is trying to put together innovation experts, open data experts, domain experts, and funders, towards civic technology projects.

The objective of this paper is to understand the shape and the dynamics of the open data ecosystem in India. Although majority of the representatives of the organisations engaged with in the study recognised that a particular network, DataMeet, or specific persons associated with the network as the people who are driving the open data conversations in India, they also noted that their organisations consider themselves to be on the ‘sidelines’ or the ‘peripheries’ of this open data ecosystem.

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7 See: https://gramener.com/.
8 See: http://mapbox.com/.
9 See: http://www.socialcops.org/.
10 See: http://epod.cid.harvard.edu/.
12 See: http://cks.in/.
community. Two reasons were most commonly offered for such an identification:

- the kinds of government data that the organisation works with are already publicly accessible, though not necessarily gratis, in open standard, or under open license, and hence the organisation do not feel the need be involved in the open data community in any rigorous way, and
- the kinds of data that the organisation work with are not collected by the government at all, and hence it does not spend any organisational resources to push the government towards proactive disclosure of data.

The above reasonings, however, do not simply imply that these organisations are not interested in the open data agenda. On the contrary, all of these organisations that considered themselves to be on the fringes of the open data community explicitly stated that they consider open government data to be a necessary (although not sufficient) resource for ensuring greater transparency in governmental activities. Given limited organisational resources, however, most of the organisations surveyed here do no undertake more involved roles within the open data community, as they mostly work with data that is already publicly available, or with data not collected by the government at all. Further, it is of great interest that all organisations surveyed in the study considered themselves either as part of the open data community in India, or its 'natural allies.' This also reflects a sense of ambiguity regarding the very conditions of belonging to this open data community. Anticipating such a situation, the study did not employ any fixed determinants of belonging but depended on self-identification by the organisations. Anant Maringanti of Hyderabad Urban Lab \(^\text{13}\) noted that, although the commercial re-users of government data and the transparency and accountability activism interests have converged in North American and European countries to shape the open data agenda, this is yet to be the reality in India. Neither the commercial re-users of government data have organised itself to articulate a clear demand for open data practices by the government, nor have large-scale data-driven monitoring by NGOs of transparency and accountability of government activities become commonplace.

Suman Bhattacharjea of ASER Centre \(^\text{14}\) mentioned that many organisations that work with a large amount of government data are yet to start talking about open data as such. This, however, is not only due to the incomplete expansion of the open data agenda but also due to longer practices of treating data as an exclusive resource to harvest insights from. Further, P.K. Bhattacharya of The Energy and Resources Institute \(^\text{15}\) pointed out that the lack of government-wide streamlined processes for publication of data either for public usage or as commercial products have led to a

\(^{13}\) See: http://hydlab.in/.
\(^{14}\) See: http://www.asercentre.org/.
\(^{15}\) See: http://www.teriin.org/.
prominent government data re-selling industry in India. Often these data re-selling companies publish data sets that appear to have been collected by government agencies but do not come with a clear attribution notice and documentation, since the companies access these data sets through informal routes. Such practices of liberating, re-organising, and formalising government data sets accessed through informal means or in closed formats are not limited to the data re-selling firms, but are also significantly undertaken by various research and advocacy organisations. The lack of publication of government data in open, well-documented, and regular manner not only creates the space for a data re-selling industry, but also a closed data culture among commercial and non-commercial re-users of data. Several research and advocacy organisations surveyed in the study have mentioned that since they undertake substantial efforts to liberate the data in the first place, they think of the sanitised data as a resource for exclusive internal use.

As Yamini Aiyar of Accountability Initiative explained, the open data culture in India is not only in its infancy but is mostly limited to a group of people who speak a certain vocabulary. This concern about the specific vocabulary, and technical knowledge and skills that go with it, of the people talking about open data in India has been flagged by several people interviewed in the study. This concern is heightened by the fact that though the open data agenda speaks a language that overlaps with related discourses of transparency and accountability on one hand, and evidence-driven developmental interventions on the other, it also deploys a precise technical understanding of digital data and its specific forms that enable easy programmatic manipulations. Gautam John of Karnataka Learning Partnership\(^{16}\)(who participated in the above mentioned barcamp) clarified that along with continuing focus on accountability and transparency issues, evidence-driven development practices are becoming more common in India, often driven by donor conditionalities and reporting requirements. This is gradually forming a general culture of data usage within NGO and CSO spheres. It, however, may not always imply that these organisation see the data produced by them as means to (multiple) ends, and not only as an end product to be shared with the donor or other relevant agencies. Furthermore, as Suman Bhattacharjea of ASER Centre described, data collected by NGOs and CSOs for sharing with donors are often driven by the requirement for internationally comparable data sets, which are also sometimes produced by government agencies monitoring delivery of various services. This effectively leads to under-prioritisation of collection of data that is crucial for data/evidence-based decision making and planning at the local and regional level. These concerns were brought up during the interviews to illustrate the emerging data/evidence-based transparency research and advocacy efforts in India, and the discontents thereof. These efforts create the practical context of the open data community in India. The community struggles on one hand to address the demands for data and related skills coming from such efforts, and to envision a linked but autonomous agenda for open data in India.

\(^{16}\) See: [https://klp.org.in/](https://klp.org.in/).
Nisha Thompson, one of the earliest members and currently the Director of DataMeet, narrated how the initial meetings and conversations that led to DataMeet, were largely driven by individuals across organisations and with an understanding that (a) an effective engagement (and utilisation) of the issue of data, in itself, requires a lot of time, efforts and support that most organisations are not in a position to offer, and (b) the issue of transparency, understood in whichever way, is surely related to that of (government) data but there is no clear notion of what that relationship is. DataMeet, to the most extent, has been interested in addressing these concerns:

- providing a space for sharing of knowledge and practices of working with, mostly government produced, data in India among members from various (commercial and non-commercial) organisations, so as to create an extra-institutional network (from the perspective of the organisations to which the DataMeet members belong) that supports data-related activities within the network, and
- exploring and pushing the connections between transparency, accountability, open data, data journalism and data-driven public discussions in India.

Such a mode of functioning of DataMeet, the key open data community group in India, also implies that open data sometimes remains an agenda driven by individual members of an organisations – the members who are also associated with DataMeet – and not an organisation-wide agenda. This of course allows the organisations concerned to share learnings through the DataMeet network, but the organisation as an entirety does not become an actor in the open data community in India. Conversely, the open data agenda in India has been limited by the expanse of the DataMeet network. This is a key challenge for the open data community in India.

4. Whose Open Data Community is it?

In a conversation with NDSAP-PMU, as part of the study concerned, the members of that team expressed their interest in involving domain experts organisations associated with the open data community in India in the process of opening up data. This involvement, in NDSAP-PMU’s perspective, should take the shape of these domain expert organisations publishing the data collected and organised by them as open data through the Open Government Data Platform of India. This is not only an end in itself for the NDSAP-PMU, but more importantly a means to push government agencies to open up their data on the topics for which non-governmental data is becoming available. Further, NDSAP-PMU wanted the open data community to contribute through evaluating, ranking, and commenting upon the data shared by various government agencies through the Open Government Data Platform. The defining function for the 'open data community' in the eyes of the NDSAP-PMU is thus understood in terms of supporting the data acquisition efforts
of the Unit, that is to get various government agencies to open up their data. This can either happen through the pull effect of the community ensuring engagements around the already opened up data, through comments and through usages of such data, and requesting for further opening up of data, or through the push effect of the community opening up self-collected data sets that compel government agencies to also publish data on the same topic. For the NDSAP-PMU, hence, the idea of the open data community is wider than just DataMeet. When asked about the open data related outreach activities of the Unit, they narrated how the search for community partners led them to NASSCOM,\textsuperscript{17} academic institutes, large software companies, and community networks like DataMeet. For NDSAP-PMU all such entities are part of the open data community in India, and they interface between the government on one hand (as represented by NDSAP-PMU), and the end users of open government data on the other.

For DataMeet, the feeling of the need for a community centered around open data topics began in a context of scarcity of government data and also of people talking about it. These concerns, since then, have dominated the formation, of the community in an essential way. The 2011 barcamp in Delhi experienced coming together of a range of organisations and individuals interested in talking about government data and its importance for transparency and accountability in general. The DataMeet mailing list became the natural habitat of the post-barcamp conversations. The early physical meetings organised by DataMeet in Bengaluru followed this pattern of individuals from various organisations coming together and talking about the challenges faced by them in accessing and using government data. The open data community, for DataMeet, has been defined by this need for people across professional and disciplinary backgrounds trying to effectively use government data from different sectors, and helping each other out in the process. Unlike the demand from the side of NDSAP-PMU, this idea of the community neither focuses on producing data-driven services and products that demonstrate the value of opened up government data, and neither necessarily specifically connects end users to government agencies. At the same time, the community created via DataMeet becomes an integral part of facilitating both of these – supporting open government data-based projects driven by various organisations through collaborative solutions exchanged over the DataMeet mailing list and meet-ups, and forming up a somewhat stable linkage with the NDSAP-PMU through which different organisations can approach the government agencies. The members and audiences of the community, understood in this way, are hence the individuals working across organisations who have government data related challenges or knowledge to share.

For Transparent Chennai,\textsuperscript{18} the entire range of actors, in India and also from abroad, who are working with government data and information are, in principle, part of the open data community.

\textsuperscript{17} NASSCOM is the industry body of information technology and information technology enabled services and products companies in India. See: \url{http://www.nasscom.in/}.

\textsuperscript{18} See: \url{http://www.transparentchennai.com/}.
These actors may involve programmers, policy analysts and advocates, information activists, technology evangelists, etc, where each may feed of and build on the efforts of each other. The reality of this community becomes concrete for Transparent Chennai when it directly benefits from any of such efforts, for example learning about new tools and techniques of data collection. The open data community, for Transparent Chennai, hence can have various functions, members, and audiences, but its defining characteristic is as a source and site of knowledge and capacity building on topics of new computational techniques of working with large-scale data, including collection, analysis, and visualisation. This perspective is not unique to Transparent Chennai at all. For Accountability Initiative, the open data culture in India is organised around a certain kind of vocabulary of technologies of using data. Simultaneously, the key support Accountability Initiative would like to seek from the emerging open data ecosystem is that of tools and techniques of communicating data, and making it accessible for the different audiences. Curiously, both the representatives of Accountability Initiative and Transparent Chennai were hesitant in immediately identifying the respective organisations as members of the open data community in India. The big concern for both the organisations was that the open data conversations should not be dominated by the technological side of government data, but it should also foreground the publicness of data – in terms of making it accessible for citizens to interpret and use – and the privateness of data – in terms of how opening up data may have negative impacts upon vulnerable communities. It is of great interest here, how the idea of open data community, for organisations like Accountability Initiative and Transparent Chennai, is associated with the possibility of learning about technologies of collecting, analysing, and communicating data, and the worry of an overtly-technological approach to transparency (via government data) that overlooks social and political concerns.

As mentioned in the previous section, one reason given by several organisations for not being closely associated with the open data community was that the data they work with is already available in the public domain. Representatives of Association for Democratic Reforms and PRS Legislative Research mentioned that the data they work with are all publicly available, although not as open data (neither in open standards, nor under open licenses), and this reduces their need to be actively involved in the open data community in India. This notion of the open data community as primarily a vehicle of getting the government to make data publicly accessible speaks well to how the NDSAP-PMU thinks of the open data community as an entity for leveraging government agencies to open up their data, but departs from the same in its lack of prioritisation of having government data available in technically and legally open form. It is important to note here that both Association for Democratic Reforms and PRS Legislative Research have established work flows for converting human-readable data and information published by the government into machine-readable data, and then for communicating such data through online and offline visualisations.

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19 See: http://adrindia.org/
20 See: http://www.prsindia.org/
technological challenges in such data processes are not a major concern for either organisations. This overview of the ways in which the open data community – and its functions, members, and audiences – is conceptualised by various actors of the open data ecosystem in India shows how the specific context of these actors, and the immediate challenges faced by them, determine such conceptualisations. For the government agency implementing the open data policy, the open data community is an external partner to this implementation process in general, and an instrument of getting the various government agencies to share their data in particular. For some NGOs, the open data community is also essentially a common instrument for getting the government agencies to share their data, but neither the focus is on openness of data as such (rather the focus is on public access to data) nor the interest in this common instrument is sustained once the data of concern for the organisation is made publicly available. For some other NGOs, the open data community is essentially defined by this special emphasis on technical openness of data, and the computational manipulation of data that is made possible by the same. This becomes the reason for such organisations to be associated with the open data community and gain knowledge about these tools and techniques of working with data, but also creates anxiety that the discussion is technology-driven. For DataMeet, the sense of this open data community is not centered around any such specific purpose or possibility of benefits-by-association, but based on open exchanges of knowledge, skills, and networks to solve challenges related to working with (open and closed) government data.

What emerges from this discussion is how the conceptualisation of the open data community on the basis of its particular functions involves a form of externalisation of responsibility. The roles that various actors in the ecosystem expect the open data community to play are often the roles that directly speak to immediate and internal data challenges faced by these actors. Whose open data community is it, thus, depends on whose open data problems it is projected to solve. Many of these problems, however, are not necessarily addressable by a community, but may require more structured approaches. For example, getting the most valuable or impactful data out of various government agencies requires significant understanding of the thematic domain and also of the functioning of the government agency concerned. The challenges identified by various actors in the ecosystem – such as, building of technical capacity, working with the government agencies so that they publish their data, ensuring that the data published by government agencies are technically and legally open, and creating effective products and services based on such data – are all critical for the success and sustainability of the ecosystem as a whole. It is rather problematic if such a range of key challenges gets identified by the actors as something that a more active open data community can possible address and resolve. In conclusion, I would like to note the need to stop using open data community as a solution-for-all-open-data-evils, and to develop strategies for the entire ecosystem that are based upon a pragmatic understanding of the kinds of open data challenges that the community can address, and those that it cannot.
5. Bibliography


