



Open Data Initiative of Ministry of Finance on National Budget Transparency in Indonesia



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About Sinergantara

Sinergantara is an NGO established in 2010 in Bandung, Indonesia. Sinergantara focuses on implementation of good governance and utilization of information and communication technology in development. Sinergantara works at local, national (Indonesia), and regional (South East Asia). Sinergantara, which means “room of synergy”, seeks to do research and develop innovations to build synergy among policy actors, civil society organizations, universities, and technical communities, particularly through utilization of ICT and implementation of good governance values.

In open data domain, Sinergantara’s mission is conducting research for supporting open data implementation in Indonesia and implementing innovation development practices for open data in health, public budget, and village development sectors. Some of current works of Sinergantara include facilitation of local governments in Indonesia in building road map of local open data and developing platform and templates that facilitate local governments in implementing open data.

Monitoring and evaluation, as well as capacity building –particularly in social accountability theme- is another core competence of Sinergantara. Sinergantara is currently working in South East Asia region on this work.

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Executive summary

This research seeks to understand the open data initiative on national budget data in the Ministry of Finance of the Republic of Indonesia. It explores the governance context that influences the creation of the initiative, and looks at the impacts of the initiative, particularly on budget advocacy work in Indonesia. This research attempts to key questions on these issues by using a theoretical framing of ‘innovation conception and adoption’, and draws on interviews with informants on the data supply side (namely within the Ministry of Finance), and interviews with informants who are potential users of the data, particularly from NGOs working on budget issues in Indonesia.

This research covers both the supply side of data, and the role of data users and intermediaries and pattern of data flow between them, before looking also at impacts of the data. On the supply side, this research highlights the national budget *transparency* initiative that is the basis for a national budget *open data* initiative. We observed the process of creating the idea of a national budget transparency initiative: called the *conception phase* in our theoretical framework. We then highlight adoption of the concept into the practice of national budget transparency, called the *adoption phase*. From this point, we discuss disconnection that occurs between concept and adoption (implementation) which causes differences between what is formed as the initial discourse, and what is formed as guidelines for budget transparency implementation. Discussions on the data supply side also highlight how far datasets are provided as open data at present on the Ministry of Finance website.

Our discussion on data user side highlights the fact that potential users of national budget data, particularly NGOs in the budget advocacy area, have certain patterns established for accessing and using budget information and data. We discuss the fact that data accessing and data utilization pattern is different from a pattern that fits with the characteristics of currently provided datasets, which in turn makes open data from the national budget less utilized.

Finally, this research seeks to identify actions that can be carried out to improve utilization of open data on the national budget from the Ministry of Finance’s website, and actions that can produce substantive impacts. Key amongst our recommendations is strengthening role of intermediaries.

Chapter 1. Introduction

This paper narrates the working finding of a case study entitled “Open Data Initiative of Ministry of Finance on National Budget Transparency in Indonesia”¹ carried out by Sinergantara Indonesia² as part of the Exploring the Emerging Impacts of Open Data in Developing Countries project – a network of case studies looking at open data in different settings across the world. The overarching project was initiated and is coordinated by World Wide Web Foundation³ and is supported by funding from Canada’s International Development Research Center (IDRC). This case study explores the open data initiative in Indonesia, with focus on national budget transparency on the web, in particular the efforts developed by the Ministry of Finance of Indonesia since 2003 and accessible via www.kemenkeu.go.id.

Our research has found that although demand for national budget information is high, as indicated by high intensity of civil society organizations (CSOs) and research organizations involved in activities such as budget analysis, the level of budget data utilization from online sources is not yet accordingly high. The low level of data utilization is reflected in low usage of data recently provided on the website of Ministry of Finance.

In this research, we try to explain the phenomenon by using ‘conception-adoption’ theory. The theory explains how basic ideas of an initiative often disappear or weaken as they are brought into implementation. Using conception–adoption theory we can discuss how the configuration of actors and artifacts configuration in conception phase (where ideas are formed into a concept) change in the adoption phase (when a concept is brought to realization), and hence the relationship of ideas to power holders is cut-off during implementation, with important consequences for how implementation happens.

The Problem

The issue of information openness, particularly in the context of public budget transparency, is an increasingly important issue nowadays in Indonesia. On the supply side, government – in this case the Ministry of Finance - has made budget data available on their official website at [www.kemenkeu .go.id](http://www.kemenkeu.go.id). On the demand side, development actors’ need for open budget data is also growing stronger. Development actors, such as World Bank, UNDP, or international aid

¹ The case study a part of “Open Data in Developing Countries (ODDC)” project which is initiated and coordinated by World Wide Web Foundation. The overall goals of this specific case study are: (1) Understanding characteristics of open data initiative of national budget developed by Ministry of Finance of Indonesia. The system characteristics to be studied include: what are social and technical intermediaries of the system to potential users, how intervention design built in the system can flow data to potential users, and what are content characteristics of the system; (2) Understanding governance structure and other global context (particularly global information technology development) that influence emergence and sustainability level of the open data initiative; (3) Understanding impacts produced by initiative and design of national budget data open system on broader scope of transparency and accountability, as well as improvement of benefits for community.

² www.sinergantara.or.id

³ www.webfoundation.org

organization such as USAID, want budget transparency in Indonesia, because budget transparency is believed to be key to supporting the achievement of their missions in reducing poverty, promoting anti-corruption, and improving public accountability.

However, utilization of national budget information published in Ministry of Finance's website is very low. Potential users interviewed (consisting of CSOs involved with budget issues, local governments and universities) state that although they highly need national budget data, they are not aware of the data that is available in the web and/or they rarely utilize this data.

Open Data definition, according to Open Definition⁴ is *data that can be freely used, reused and redistributed by anyone - subject only, at most, to the requirement to attribute and share alike*.

The [full Open Definition](#) gives precise details as to what this means. To summarize the most important:

- **Availability and Access:** the data must be available as a whole and at no more than a reasonable reproduction cost, preferably by downloading over the internet. The data must also be available in a convenient and modifiable form.
- **Reuse and Redistribution:** the data must be provided under terms that permit reuse and redistribution including the intermixing with other datasets.
- **Universal Participation:** everyone must be able to use, reuse and redistribute - there should be no discrimination against fields of endeavour or against persons or groups. For example, 'non-commercial' restrictions that would prevent 'commercial' use, or restrictions of use for certain purposes (e.g. only in education), are not allowed.

In addition, many institutions develop more detailed definitions of open data. One of informal definition, that is emerged in a conference on Open Government Data⁵, is compliance with 8 principles that are characteristics of Open (Government) Data, namely: (1) Complete; (2) Primary; (3) Timely; (4) Accessible; (5) Machine-processable; (6) Non-discrimination; (7) Non-proprietary; (8) License-free.

We interpret Open Budget Data in this report as data on budget of government at various levels which *can be freely used, reused and redistributed by anyone*. In this sense, the data can be in non-PDF format, disaggregated, and fully open for reusing purpose. Example of open budget data initiative, other than national budget initiative discussed in this report, is Open Budget of New York City⁶. Data on website of Open Budget of New York City are thematic data, such as budget and actuals, appropriations, revenue, and social aid budget data. Data on the website can be downloaded in Microsoft Excel format. However, whether the data depicts the whole information or not, as well as license status of the data, are not yet known.

⁴ <http://opendefinition.org/>

⁵ Conference on Open Government Data organized by Sunlight Foundation, Google and Yahoo in Sebastopol, California, US in November 2007.

<http://opengovdata.org/>

⁶ <http://www.openbudget.ny.gov/>

Chapter 2. Research questions and method

2.1 Research Questions:

There are three key questions in this research, namely:

- (1) What is the characteristic of the open data initiative of the Ministry of Finance?
- (2) How does governance context influence the Open Data initiative of the Ministry of Finance of Indonesia?
- (3) What are impacts of open data initiative in Ministry of Finance of Indonesia to CSOs' budget advocacy improvements?

These three key questions are then detailed into the following questions:

1. What is the characteristic of the open data initiative of the Ministry of Finance?
 - a. How have the technology and social interventions been designed?
 - b. What policy, budget, and legal frameworks are in place to support the initiative?
 - c. How are social and technical intermediaries operating between the open data system and potential users?
 2. How does governance context influence the open data initiative of the Ministry of Finance of Indonesia?
 - a. What is the relevance of the open data system to good governance in Indonesia?
 - b. How are influences from decentralization system dynamics operating in Indonesia?
 - c. What influences are present from the global ICT development level?
 3. What are impacts of open data initiative of the Ministry of Finance of Indonesia on CSOs' budget advocacy improvements?
 - a. What is potential users' utilization level of the open data system?
 - b. How are further impacts of the open data system utilized by other groups?
- What is the development and sustainability potential of the open data system?

2.2. Methodology

In this section we describe methodologies carried out in this project, including the data collection methods and data analysis approaches used.

For data collection, this research used in-depth interview, policy studies, and stakeholder workshops to source input. The interviews were carried out with informants from the data supply side (Ministry of Finance), data users (NGOs and local governments), and intermediaries (NGOs). A workshop was organized to gather these informants in a forum. In the forum, some informants may ask and confirm each other inputs on budget transparency and open data issues.

Data analysis in this research used the conception and adoption of innovation methods theory. In the methods, we tried to explain how a concept is produced and implemented, and what happens with production and implementation of concept. In data analysis, we separate analysis domain into two areas: data supply and data user areas. In each area, we analyze how a conception and adoption process occurs.

2.2.1. Data Collection

Activities we carried out in data collection included:

1. Study on Open Data system of National Budget.

This study is conducted to understand how the system is built and characteristics of the system. To collect the information, we conducted interview with Ministry of Finance's officials. However, a complete picture of the system cannot be obtained yet, as we did not have chance to interview officials from the IT department to collect additional details.

2. Interview with initiators of National Budget Open Data.

These interviews were conducted with officials who understand the process of budget transparency in Ministry of Finance of Republic of Indonesia. We also conducted interview via email with former Minister of Finance, Mrs. Sri Mulyani Indrawati.

3. Interview with official of National Budget Open Data in Ministry of Finance.

We conducted interviews with officials who are responsible for budget data. Of this activity, we found the picture of design of Open Data system (from technical, administrative, and social aspects), development plan of the system, and how administrator/designer of the system understand governance context as a factor of consideration in developing the system.

4. Interview with actors that currently have authority on making relevant policies on the National Budget Open Data system.

We conducted interview with UKP4 (Presidential Work Unit for Development Monitoring and Acceleration). This agency is currently holding mandate from President to develop Open Data in Indonesia. UKP4 also creates road map of national open data.

5. Interview with web users that have utilized National Budget Open Data system.

This interview is conducted to understand data flow from the data supply to users, existing social and technical intermediaries, and impacts of system utilization. Informants for this interview include individuals who have used Ministry of Finance's website, as well as those who haven't but are potential users of it. They are CSO activists, local government officials and individuals from the technology community.

6. Workshop with actors in supply side and demand side (web users) of the open data system.

From these workshop, we gained explanations from Ministry of Finance on how the Ministry views the current budget transparency/open data initiative and how the initiative will be developed. From the workshop, we also found information on CSOs' needs on national budget transparency and open data. Participants of this workshop were officials of Ministry of Finance, national parliament members, web users, NGOs, press, and other parties from demand side.

7. Study on Data-related Regulation

This activity was to find information on legal framework on open data initiative. Documents to be studied include laws and regulations, and documents on open data-related cases (cases related to freedom of information).

Overall, interviews were conducted with five people from Ministry of Finance, which include: three people from Directorate General of Budget; one person from Directorate General of Fiscal Balance, and one ex minister of finance (Sri Mulyani Indrawati). Interviews also conducted with two local government officials (from Kabupaten Sleman and Kabupaten Bojonegoro). Meanwhile to the non government official, this study involved sixteen people from the various CSOs, mainly in their core activities of budget work and ICT.

2.2.2. Data Analysis

Our analysis took place in two parts, starting from desk research to build an theoretical understanding the situation in Indonesia, before checking findings with expert informants.

1. Theoretical analysis

Analysis in this research uses Technology Adoption Conception Method. In this method, we seek to find how the "conception process" of the open data initiative in budget is built in the initiator group (including policy makers, conceptor, and conceptor of influencing theories). We also discuss how the governance context that is related to the national budget influences the budget open data initiative. This is where "adoption process" takes place, in which the initiative is negotiated, discussed, and modified to gain acceptance within existing governance structure. In the adoption process, the open data initiative changes, followed by governance structure changes to fit with the open data initiative

2. Expert Discussion

This activity aims at inviting inputs from experts on draft of analysis result that is previously produced. Experts to be involved in this discussion include economic, policy, and governance technology experts.

Chapter 3. The Indonesian Context: towards open budget data

Open data in Indonesia can be viewed from two sides, namely the supply side and the demand side. In this section we look at the development of supply of budget information and data in Indonesia.

3.1 The development a budget transparency system

Transparency in governance in Indonesia became a serious topic in 1998, following the fall of Suharto regime. Transparency issues, mainly brought up by civil society movements, were often framed as an element of the anti-corruption movement. Five years into the new regime, the Indonesian government implemented a decentralization policy and began to develop good governance practices, responding to international initiative (as has happened with open data a decade later), and transparency gained increased support in civil society movements, and in the government reform agenda itself (Antlov & Wetterberg, 2011).

From the middle of the last decade, particularly from 2004 onwards, budget transparency became an agenda gaining attention from a broad audience, including government and civil society in Indonesia. In this period the Indonesian government issued policies that encourage financial transparency. One such policy was the regulation on Local Government Financial Information Systems⁷.

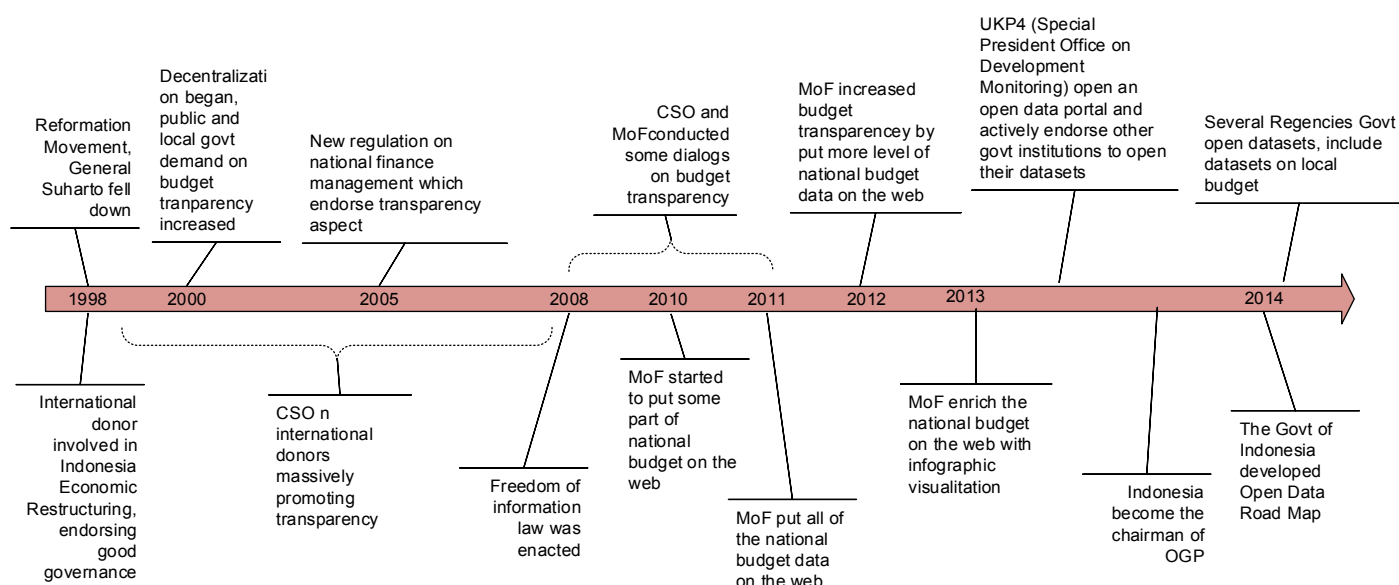
The Indonesia Governments view of transparency in financial sector (Ministry of Finance RI, 2013) says that improved transparency is a necessary basis for improving the efficiency and effectiveness of fiscal management. Under the State Finance Law⁸, which is the basis of accountability and responsibility for government fiscal and public financial management in Indonesia, the Ministry of Finance started to create a budget transparency system. In doing so it sought to develop government regulations that require transparency during whole public finance process and across the budget cycle.

3.2. Moving towards open budget data

The history of open budget data in Indonesia can be viewed in the below timeline graphic. It can be said that the rapid development started from Reform in 1998, which is marked by the fall of Suharto regime on May 20, 1998. At least, there are five important marks of reform that relate to open data, namely: (1) decentralization and strengthened needs for budget transparency in early 2000, (2) Law on National Finance Management that tends to encourage openness aspect, (3) enactment of Law no.14/2008 on Information Openness, (4) Ministry of Finance starting to put all of national budget data in their website in 2011, and (5) Indonesia serving as Chair of the Open Government Partnership, which is followed by the development of an Open Data Roadmap in 2014. Since 2014, many local governments have started to open their public data, including local revenues and expenditures data.

⁷Regulation of Government of Republic of Indonesia no 56 / 2005 on Local Financial Information System.

⁸ Law no 17 / 2003 on State Finance



The website of the Ministry of Finance was launched in the 1990s. Information on finance has been uploaded to the website, however, much of this information is not available as open data, and some information is not published at all. As transparency developed in Indonesia, particularly after the Law on National Finance issued in 2005, and the Law on Freedom of Public Information in 2008, the amount of financial information opened up on the website has increased every year. However, transparency of financial information was not completed and published fully on the website until 2010.

3.3. Who was involved in the development of open budget data?

3.3.1. The Initiators

At the conception level, particularly in the idea formulation phase, the budget transparency initiative was directly pioneered by the Minister of Finance of Republic of Indonesia at that time (2005-2010), Sri Mulyani Indrawati. According to her, budget transparency has been practiced in many countries, and the Ministry of Finance wanted Indonesia to practice it as well. At this point, the Minister of Finance and ministry staff had intense interaction with outside parties, such as NGOs, transparency experts, and international development agents, to discuss the budget transparency idea of the Ministry of Finance.

However, in the concept formulation phase, namely the phase when the budget transparency idea was conceptualized, the main role was played by official leaders in the Ministry of Finance, such as directorate generals in Ministry of Finance. Role of the Minister and outer parties (NGOs, international development agents, etc.) that were previously high in the intensive discussions, reduced in this phase.

At adoption or implementation level, the biggest role was played by unit/division level officials. These actors concentrate more on ensuring that data is available to be published, and how technical system work to support that. In this level, actors who concentrate on impacts of budget transparency do not have a big role anymore. However, after few years of

implementation, particularly in 2013, some technical-level officials began to think of how to make it easier for users for to use the financial data. The measure they turned to was providing infographic presentation of budget information. However, over time, open data has come to be identified as another mechanism for potentially increasing use of budget information.

3.3.2. The Influencing Events

Open Data was first discussed in Indonesia in 2010, when World Bank released their open data website with pages for Indonesia, namely: <http://data.worldbank.org/country/indonesia>. At that time, World Bank invited CSOs and government to the launch of their open data initiative. After that, World Bank also actively promoted open data in Indonesia through various efforts, such as dissemination of open data concept to community, universities, and government⁹.

The creation of the Open Government Partnership (OGP) also influenced the development of discussion on open data in Indonesia. In this case, a working unit of government whose hierarchy is directly under the president, named UKP4 (President's Working Unit for Development Monitoring and Control), actively promotes transparency and implementation of Open Data in Indonesia. Through UKP4, the open data issue grew to affect other government institutions and NGOs. Implementation of OGP itself in Indonesia is managed through a core team consisting of government representatives and some NGOs. A focus on open data issues is not, however, evident in the activities of the core team.

3.3.3. Advocacy

In Indonesia, NGOs – which include Indonesian NGOs and foreign NGOs (such as Web Foundation and Open Knowledge Foundation), and international development agents (particularly World Bank), are active in advocacy for open data. By number, there are not, however, that many advocacy efforts from NGOs, both local and national NGOs that focus on open data in a dedicated way. Similarly, there are not many local or national NGOs that are in a place to broaden their focus on transparency (seen through a right to information lens) to open data. As a result, focused advocacy capacity for open data from the NGO sector, particular from Indonesian NGOs, is limited.

3.3.4. Implementations

Although the analysis above shows there are only a few key champions for the open data initiative in Indonesia, activities are emerging at national and local level. At a national level, the government institution that actively advocates for open data is UKP4. Since 2013, this institution has been actively promoting open data implementation in other government institutions, including facilitating these government institutions to open their datasets and make them available through UKP4's portal (<http://data.ukp.go.id/>). Some ministries, including Ministry of Finance, implement initiatives that, although the cannot be called full open data

⁹For example, Open Data Day organized by World Bank in universities.

initiatives, move towards aspects of Open Data, such as providing machine-readable files and improving data quality.

However, interviews with Ministry of Finance's officials and staffs revealed that "...there is no formal plan on open data implementation in Ministry of Finance. Open Data itself is not a popular issue, let alone understood by MoF's officials. However, there is big commitment on transparency of important public information, such as transparency of national budget data, and other national policies. Nevertheless, orientation to open data will be implemented, particularly in addressing public-relation function. This includes addressing society's demand for data, providing information to society, becoming a dashboard for internal flows of data, and putting data as campaign media (public service advertisement)." This highlights the importance of understanding how central drives for open data are translated into action in particular areas or ministries.

At local level (province and district level), open data implementation has, in some cases, advanced beyond what central government has achieved. In 2014, the provincial government of Jakarta and district government of Bojonegoro opened significant numbers of datasets and made dataset utilization efforts through organizing a hackaton (in Jakarta) and opening a local open data platform for village development planning (in Bojonegoro District).

3.4. Conclusions

In this section we have put the existence of national budget and information data in Indonesia in its historical context, showing the foundations of current activity within budget transparency policy, and showing how discourses around open data have emerged. In the following sections we look at how far these have translated into the supply of open data, and into a flow of data into use.

Chapter 4. Data availability

In order to understand how far advocacy and initiatives for open data have been translated into data supply, we assessed the budget data published on the web, including all national data produced by Ministry of Finance. The budget data includes:

- The current state budget,
- The law on the current state budget,
- Financial memorandum of government,
- Details of budget realization,
- Details of management of government debts,
- Details of central government's expenditures (in previous year and current year),
- Statistic of state revenue, and
- Details of transfer to local governments.

Data published by Ministry of Finance can be accessed through their website at <http://www.kemenkeu.go.id/katalogdata> using a data catalogue that was launched on April 26th, 2013. The datasets presented in Ministry of Finance's data catalogue have the following characteristics:

- Budget data in the Ministry of Finance is aggregated data that is of a global nature. Most of the datasets published present budget data that are aggregates of other more detailed budget data. However, the detailed data is not available in the Ministry of Finance website. Instead, this data may be available from other ministries or from local governments, though this is not universally the case. The data are not of the Ministry of Finance's authorization: they are of other ministries' or local governments' authorization, who are also users of the budget data.
- Data presented on the web are updated by Ministry of Finance. The update is carried out whenever data changes occur, such as when expenditure on data allocation occurs. However, the updates are only carried out to the "final" data, namely data that are approved to be published. Unlike Brazil, where real-time spending data must be published by law on a daily basis, in Indonesia, the data is only updated periodically.
- Data presented on the website is mostly provided in PDF format; although some are Excel or Word documents are used. Some of the data are also processed and presented in info-graphic form.

In general, open data advocates call for data to meet a number of criteria to be considered as open data. These include being machine-readable (in Excel or CSV formats rather than PDF), being available freely online, and being provided under license terms that permit re-use. The Sebastopol Principles on Open Data¹⁰ also call for data to be 'complete' and 'primary' as possible. In other words, they consider that fully open government data should include a

¹⁰ <http://opengovdata.org/>

complete picture of government activity, he should also provide disaggregated figures, and not just aggregate summaries.

Given the characteristics of the data and information published in Indonesia, we conclude that:

- The data are substantially complete, and provided along with strong macro analysis. The data presented may be found easier to read for users who have familiarity with macro/policy analysis. The inclusion of infographics can make information more accessible to some users, but if the underlying data is not also published, it limits the openness of the information.
- As aggregated data, the budget data available can be used to describe total amount of allocation, realization or budget expenditures at a government level or financial sector unit. The data describe government's macro policy in financial sector, such as financial sources for national development, pattern of budget transfer from central to local level, etc. But these data cannot give detailed description of to whom the budget is transferred (that is, final beneficiaries of the budget), details of how the budget is spent, whether there is leakage in budget spending, etc.

Data presented are mostly in PDF format that need manual intervention to be processed (non-computable) to produce other information. Most data are also usable only when they are downloaded. According to data administrator in the Ministry of Finance, the PDF format is selected to prevent downloaded data from being modified by users. The reason is to maintain data quality, so that re-users cannot alter the original source. However, this goes against the principles of open data supporting re-use and re-analysis of data.

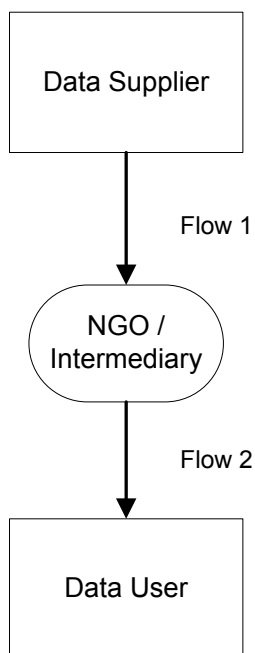
Although the current situation in Indonesia stops short of the provision of full open data, we can look at how the data that is available is being used, in order to understand what implications the strengths and weaknesses of open data supply have.

Chapter 5. Data flow: intermediaries and users

5.1. Intermediaries

This section will focus on patterns of data flow from the Ministry of Finance's website to data utilization by data users, particularly by NGOs. In this section, we describe pattern of how the NGOs covered by this research access data and the treat data. This section also discusses how intermediaries are involved in the data flow.

In order to understand the potential of budget data, we explored the idea of data flow. Data flow includes processes of how data moves from data supplier to data users. The process involves at least a data supplier and a data user. In practice, other entities are present beside those two. The other entities are intermediaries; a group that helps the data flow process. The pattern of data flow utilization in budget data in Ministry of Finance can be described in the following diagram. In this case, there are two flows: data flow from data supplier (in this case, Ministry of Finance) to intermediaries groups, and data flow from intermediaries groups to data users.



In this case, we find two actions of intermediaries in the dataflow that are important to be observed. These two actions are: (1) the activity of data access and (2) treatment of the data before it is delivered to data users. The activity of accessing data relates to pattern of intermediaries' action to obtain the data from data supplier. The activity of data treatment relates to how intermediaries use the data that they have obtained.

Data accessing activities vary based on whether potential data users obtain the data by their own effort from government sources, whether the data is obtained via intermediaries (NGO, press, etc.), and based on the pattern of the accessing activity itself: i.e. whether the data is

required directly from data supplier (government institute), whether the data is required from network / colleague in government, or whether the data is obtained from media (web or newspaper). Activities of data treatment and usage relates to: whether the data is delivered directly by intermediaries to data users, whether there is data processing or translation carried out by intermediaries, whether there is activity of adding value carried out by intermediaries to the data (for example, making the data into materials for empowerment).

Based on interviews with these NGOs, the following situation is captured:

- In accessing public data, most of the national level NGOs that are subjects of this research play their role as intermediaries – accessing public data by submitting formal request to government (data supply) or accessing public data that is made transparent by government through web or printed media. Only one anti corruption NGO that access data relies heavily on relations / colleagues that they know in parliament or government. In this case, they very rarely access data by other ways, such as submitting official request to government institutions, or utilizing data published by government.
- In utilizing and treating public data they have accessed, these NGOs mostly use the data for supporting public empowerment and assisting communities. In this case, these NGOs mostly process the data they have obtained (through analysis or packaging, or through combining with other data) to make the data easier to understand by the data user and to be able to strengthen capacity of data users. NGOs observed in this research sometimes play the role of translating data or utilizing data for stimulating their assisted communities. In doing data translation, these NGOs do analysis on data, packaging of data, or extracting meaning from data, so that potential data users can understand better the meaning of the data. In doing their role as stimulator, these NGOs can process the data that they can deliver data to public / assisted communities that allows the public to give certain responses.
- Other potential patterns of NGO role, namely merely bringing / delivering information as is (without processing the information first), is not a role that is often played by the NGOs covered in this study.

Box 1 Data Accessing Pattern of NGO through Colleague Relationship

Indonesia Corruption Watch (ICW), an NGO working in anti-corruption activities in Indonesia, often works with data to produce analysis on corruption cases. They use primary data that they produce themselves and secondary data from other sources. Public budget data is included in the second category. ICW obtains public budget data from their relations in government and parliament, in which ICW makes direct contact/relationship with those who have the data, requests the data, and discusses with them to understand the meaning of the data. This way of accessing data is considered more effective to collect more focused data and easier to interpret the data.

ICW often needs data that is detailed and focused on certain cases, thus it is difficult to collect such data from general government publication. Although government publishes documents that contain some relevant data, in practice the publication has only limited scope and detail. Specific data, such as receivers of school operational aid, is an example of the type of data that ICW needs.

<p>Box 2 Data Accessing Pattern of NGO through Formal Request for Information</p> <p><i>Forum Indonesia untuk Transparansi Anggaran</i> (FITRA) is an NGO that works on promoting budget transparency. FITRA presents budget information to the public and conducts analysis on the budget. Thus, they need detailed, accurate, and complete data of budget on certain sector or issue.</p> <p>FITRA regards that to collect such data, direct requests to government for the data is a must, because most of published data cannot meet their needs. To collect such data in national education sector, for example, FITRA cannot find them on the Internet. Therefore, FITRA needs to make direct requests for information to government.</p>
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<p>Box 3 Data Treatment Pattern by NGO (Empowerment)</p> <p>As intermediaries, many NGOs in Indonesia that work on budget issue do not stop on accessing data and presenting data to beneficiaries group; they give meaning to the data. They choose to be active intermediaries, in which they give “added value” to the data before presenting them to beneficiaries groups. They do “translation” of data and use data as empowerment tool.</p> <p>Translation of data is conducted by, among other NGOs, Article 33. By doing so, Article 33 seeks to make budget data more useful and understandable for beneficiaries groups. Article 33 analyzes data and presents the data into format that can be understood easily by data users. Article 33 also disseminates and provides information on the data, for example information on impacts of a national budget profile, relation of the budget to public services, and explanation of policy recommendations supported through the data.</p> <p>Some NGOs, such as PATTIRO (<i>Pusat Telaah dan Informasi Regional</i>/Center for Regional Information and Studies), use public budget data they receive to empower society. PATTIRO learns the data, and then uses what they learn from the data to build training curriculum.</p>
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<p>Box 4 Data Treatment Pattern by NGO (Delivering Data Without Processing)</p> <p>Some NGOs play their role as intermediaries by delivering budget information to public as it is, i.e. without doing substantial processing on the information first. There is added value of this way, however. For example, budget data is displayed on posters that are visible for people in public places. National NGOs interviewed in this research do not choose this way anymore for their budget work.</p> <p>Some NGOs working in city/district level, such as PATTIRO Surakarta, chooses this way in playing their role as intermediaries. They make posters that contain budget data of Surakarta City. The posters are printed and distributed to public places in the city. The initiative is then adopted by Surakarta Municipality and implemented routinely since 2006.</p>
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5.2. Data users

This section discusses end users of national budget data published on Ministry of Finance’s website, and how they use the data. In this section we discuss how the NGO treat the data and what type of the data that support their kind of work, and then look at the

Users of Ministry of Finance's data include NGOs working in governance, NGOs working in grass-root level, ICT community, and local governments. They are active Internet users and potential groups that have interest in public policy issues, including public budget issues. Organizations in this group have variety of activities, yet they often interact with each other using data on the Internet.

This research focuses more on researching pattern of data usage of the first group, namely NGOs working in governance issues. This focus is selected because they have higher intensity in working with budget data, compared to other groups.

Data usage pattern of these NGOs are influenced by their work pattern. The data usage pattern of these NGOs can be described as follows:

- Data are used as references or justification of CSO products. In this sense, data are needed only to support arguments, thus they don't need further processing. For example, the data are used for describing profile or impact of development policies. They may include data from legislation, statistics, and textual data, such as from news in mass-media.
- Data are used for analysis materials and are processed in manual and simple way to obtain information needed more by public or policy makers. Some forms of the data processing involve comparing data from government to other data, such as national budget allocation compared to budget absorption data. Another form is comparing government data to primary data produced by research conducted by the NGO themselves; for example, to identify appropriateness of government data on allocated budgets for certain projects, as compared to budget realization at field level. Most of the processed data are numeric data (statistic data, budget data, etc.), while the rest are non-numeric data (such as legislation data, public documents, infographics, etc.).
- Data processed computationally to produce new information. The data to be analyzed mostly have high complexity; therefore digital data utilization may be very effective. For example, data is processed using cross-reference with other data to produce some information. For this group, the data have to be in machine-readable format and interoperable. NGOs with this type of work are rarely found in Indonesia at present.

Chapter 6. Emerging impacts

This section gives general picture of impacts of budget transparency, as well as specific impacts of open data (publication of national budget data on Ministry of Finance's website). This section then further discusses NGOs' opinion on open data initiative implemented by Ministry of Finance.

In general, transparency, particularly budget transparency, in Indonesia provides some impacts for NGOs working in governance sector:

- Transparency provides room for NGOs to take bigger role in public decision-making processes. It improves the role of CSOs, particularly NGOs, within the constellation of public decision-making in Indonesia.
- Some NGOs find that transparency has changed the relationship pattern between NGO and government (national and local governments) in some areas into more constructive relationship pattern. Open information allows more opportunities for NGOs to give inputs to government and to collaborate with government on certain issues.
- These NGOs regard that budget transparency allows them to conduct evidence-based advocacy, particularly advocacy on budget themes. It strengthens the position of NGOs that use budget analysis as an advocacy tool. On the other hand, it makes NGOs that cannot yet use budget analysis as advocacy tools less strategic than their counterparts. These NGOs have to conduct vis-à-vis advocacy with government, which makes their position difficult.

Responding to national budget transparency implemented by the Ministry of Finance through their website, various opinions come from these NGOs. Overall, they support national budget transparency via the web. They regarded this as the Ministry of Finance's fulfillment of obligations under the law on Public Information Openness, as well as an effort at building a better relationship between government and civil society.

However, many questions arise from these NGOs on quality aspects of the data, as well as on the ease using the data. These issues include:

- Budget data provided in the web is enough that it covers all government's financing on development. However, the depth of data is not adequate, thus it cannot be utilized or is not supportive for many of the purposes to which NGOs want to put it. This is particularly felt by investigative NGOs, such as Indonesia Corruption Watch (ICW) and FITRA. They need, for example, supporting data for investigation on budget abuse cases, or for investigating inaccuracy in implementation process (budget implementation).
- NGOs observe data inconsistency between datasets presented by the Ministry of Finance on their website. Such inconsistency occurs in the form of irregularity in data presented in the website. For example, a certain data is displayed in a period of time, however, the data may disappear from the website at other period. For NGOs like ICEL

that uses the data for justification of their reports, such inconsistency may be very disturbing.

- According to BIGS, budget data published in Ministry of Finance website is good. However, to be able to utilize them, NGOs must have strong skill of budget analysis. BIGS is afraid that if no one serves as intermediaries (translator) of the budget data, impacts of transparency may not be felt fully.

Overall, although the budget transparency initiative in Ministry of Finance cannot yet demonstrate strong impacts, there are “impact candidates” that are observable from the transparency initiative of MoF. These are:

- National budget transparency implemented by the Ministry of Finance has the impact of “motivating” other government institutions (such as in technical ministries or local governments) to implement budget transparency as well. Budget data opened at national level also motivates other government institutions to follow up by providing more detailed data.
- Budget transparency in Ministry of Finance may indirectly provide room for NGOs, as well as other organizations, such as the press, to become data intermediaries. As intermediaries, these NGOs may improve their role in making relationship with other development stakeholders.

There is still a long way to go before Indonesia is fully implementing open budget data, before the data is of a depth and quality to support all the different potential users, and before users are actively drawing on open data rather than their current routes to access budget information.

The theoretical analysis provided in the following chapter offers one way to analyse the opportunities and challenges for advancing open data ideas further in Indonesia.

Chapter 7. Analysis: conception and adoption of open data and budget transparency

To offer a theoretical explanation of how the national budget data transparency initiative emerged and is implemented in the Ministry of Finance, particularly the open data aspects of this, we draw upon conception–adoption model¹¹. The conception–adoption model is derived from ANT (Actor Network Theory)¹², which looks at the relationships between both human actors and technical artefacts (called ‘non-human actors’ in ANT) and offers a means to look at how networks of actors translate ideas into activity. The analysis in this section responds to the core research questions by building a model for understanding the progress, and gaps in progress, towards open budget data initiatives in Indonesia.

- (1) What is the characteristic of the open data initiative of the Ministry of Finance?
- (2) How does governance context influence the Open Data initiative of the Ministry of Finance of Indonesia?
- (3) What are impacts of open data initiative in Ministry of Finance of Indonesia to CSOs’ budget advocacy improvements?

7.1. Applying the conception-adoption model

The conception process/phase occurs when the national budget open data initiative is conceived of and articulated by particular actors, who then become the “creators” of this initiative. The process begins when transparency and accountability become dominant issues for development actors, such as government, parliament, and civil society organizations (CSOs). On one hand, these actors have many interactions with legal artifacts (such as the law on Freedom of Information, Amendment of Constitution, etc.), while on the other hand they are influenced by rapid development of ICT in Indonesia. Both facts encourage the birth of a budget transparency initiative in website of the Ministry of Finance, and the budget transparency subsequently catalyses the development of a related open data initiative.

The adoption process/phase consists of two components: a ‘system development’ component and a data utilization by ‘end-user’ component. The system development component occurs during implementation of the open data initiative. In this case, after the open data initiative is introduced into government policy, the initiative is then delivered to actors who will undertake direct interaction with technical artifacts (ICT department in Ministry, budget data management department) for the open data initiative to be implemented. These actors will build the systems required, which includes work such as managing the website, formatting and posting budget data to the web and promoting the open data to public.

The second component of the adoption process, on the end-user side, is when the web content is accessed and utilized. Users, or potential users, of open budget data on the web have relations with different actors and artifacts; however, these relations are different from those

¹¹Yuliar, Sonny, *“The Governance of Technology”*, Bandung, Bandung Institute of Technology Press, 2009.

¹²Latour, Bruno. *“Science in Action”*, Harvard University Press, 1987

that exist during the conception process. Connectivity among actors and artifacts in the conception process, and in the adoption process is not well developed. This condition leads to an inconsistency between the objectives of the budget transparency initiative—developed in the beginning of conception process - and what occurs in adoption phase, particularly in the data utilization component. At the conception phase, the creators may envisage that providing data will create a surge in budget data accessibility, use and effective transparency. However, when short-term goals are set of providing websites, data files and so-on, this broader idea can be lost in the adoption phase. As a result, the outcomes do not match what was envisaged in the original concept.

Through a review of the conception and adoption processes, this research highlights that such a process for the national budget open data initiative in Indonesia is a process involving interaction among actors and technical artifacts that form a certain socio-technical configuration¹³. In every configuration, dialog and negotiation among involved actors occur, because each of them basically has their own background and interests. The dialog/negotiation process will decide how the innovation is translated from conception to adoption. Moving from conception to implementation process, an innovation moves from one configuration into another, where each configuration has different actors. Successful transformation of an innovation from conception to implementation depends on the configurations it goes through. The configurations of actors and artifacts involved are the ecosystem of the innovation.

In above-mentioned case study, we can see that the innovation of national budget transparency experiences a disconnection when it becomes an initiative at early phases and when it is translated by configuration/ecosystem within which such innovation undergoes.. The disconnection occurs when actors who initially formulate the innovation are not involved in process of translating the innovation into technical forms. Disconnection also occurs because references the points of reference used in the conception of the innovation formulation are not applied drawn upon anymore when the innovation enters to more technical phase of implementation.

Four issues of this case study deserve attention. First, how different actors involved in formulating and implementing budget transparency and open data initiatives should interact. Second, how a lack of focus on developing intermediaries to work with data may reduce connections between key actors and the budget transparency/open data idea, while at the same it reduces relationships between initiators of an initiative, and the ultimate system implementation. Third, how the change of the innovation ecosystem in the move from conception to implementation of open data plays a part in absence of connections between the systems that are delivered and the originally anticipated users and uses. Forth, whether or not the current ecosystem around budget transparency in Indonesia can motivate transformations and developments from budget transparency to full open budget data.

¹³ Yuliar, Sonny, *"The Governance of Technology"*, Bandung, Bandung Institute of Technology Press, 2009.

On the actor involvement issue, the above case study illustrates how the absence of the original innovators calling for open data in the further processes implementation may leave the innovation idea difficult for implementers to understand and successfully translate into practice. An innovation or idea is basically attached to actors who contribute to producing the idea. Much understanding is often left tacit. The interests and background of the actors will influence the ideas produced by the actors¹⁴. Therefore, by not involving actors who conceived of the innovation phase in the adoption phases may leave their ideas disconnected from the system that is built to, in theory, implement them.

On the issue of intermediaries, the case study illustrates that the absence of intermediaries may contribute to the disconnection between transparency champions and initiators, and the officials responsible for handling website and budget data. When the configuration of actors changes in the move from conception to implementation, the conceptual framing of the innovation as one of transparency changes to a framing around systems management. The case study shows that the conception and adoption processes did not recommend anyone to be involved in implementation processes who might be able to deliver and contextualize the original idea and vision of budget transparency and open data.

This is related to the disconnection between the system that is implemented and expected user. The case study illustrates that the users defined by initiators, namely a broad scope of community, are different from the users assumed by system implementers. In this case, the definition of users changes when the innovation is at implementation phase. The change of user definition is significant when a question of whether existence of national budget transparency system creates impacts for users arises. This research asks NGOs, whom the system initiators regard as potential users of national budget information, whether their activists use the national budget data for their advocacy works. Researchers find that almost all respondents answered in the negative: they do not use data from the Ministry of Finance's website. Our analysis is that this is because current system administrators' definition of users does not include these NGOs.

On the issue of open data, this case study on budget transparency shows that the actors do not regard open data a different topic from transparency. Since beginning, initiators regard the objectives of their initiatives as transparency. When the open data issue arose, budget transparency systems were already in an implementation phase. As a result, the key actors, who at this phase are system administrators, are focused on running the system. Therefore, initiatives on developing from a transparency system to an open data system are not yet a part of the agenda, and any efforts to place open data on the agenda need to be aware of the current configuration of actors and artifacts that might be mobilized to bring about open budget data.

¹⁴ Ibid.

7.2 Conclusions

This analysis gives rise to a number of important conclusions:

- In the case of budget transparency in Indonesia a disconnection exists between initial idea of budget transparency, and the transparency system developed by the institution.
- The disconnection appears in, for example, when the idea is translated into a framework for implementation.
- The disconnection occurs because actors and artifacts involved in earlier phase, namely the idea creation process, are replaced by different actors and artifacts in the subsequent implementation processes
- This disconnection is one of causes of why the budget transparency website built by the institution does not receive substantial attention from potential users.
- The increased involvement of external actors and artifacts is needed to create more understanding about the needs and constraints of potential users groups when implementing budget transparency and open budget data projects.
- The need for intermediaries emerges because of the disconnection between actors in the initials process and actors in the implementation process: outside intermediaries are not only important to the use of data, but also to shaping the implementation of open data projects.

Chapter 8. Summary and conclusions

8.1 Summary

This section summarizes key findings from this project, before offering a set of concluding observations.

The Indonesian open data initiative on national budget data, implemented by the Ministry of Finance of the Republic of Indonesia, is a development of the national budget transparency initiative that was implemented earlier. The initiative aims at promoting implementation of good governance in Indonesia. However, relevance of the open data initiative to good governance in Indonesia cannot be measured yet in current practices because the initiative has not produced measurable impacts yet.

- Social intermediaries of the budget transparency in Indonesia are NGOs working in budget advocacy. Most of them seek to connect up supply side and demand sides by: delivering information from supply side to demand side, translating information into easier language for demand side, or empowering demand side, so that they can use the information. However, they often do so using non-open data information sources. Social intermediaries' role in the Ministry of Finance's open data initiative is not observed enough yet because these NGOs are not yet accustomed to working with utilizing data from website.
- Technical intermediaries for the Ministry of Finance's open data initiative include the website of Ministry of Finance of Republic of Indonesia www.kemenkeu.or.id. The website aims to make data published by Ministry of Finance accessible for demand side (public). In practice, this function of technical intermediaries does not work fully. Public and target groups are assumed to find easiness in accessing data through the website. It turns out that these target groups already have their own habit of accessing data, such as: requesting data/documents to their colleagues in government. As for other potential user groups, the existence of data and information on the website does not yet motivate them to access and work with budget data provided on the website.
- The design of interventions developed by the Ministry of Finance for supporting the open data initiative is focused on providing data openly and comprehensively, and publishing them on website. By doing so, website administrators assume that users will increase their demand to the data accordingly. It can be said that data suppliers do not think in depth about the social interventions that may need to be designed alongside technical interventions in order for the initiative to operate effectively.
- Information provided on the website at www.kemenkeu.or.id represent complete budget data, which include global data (aggregated data), and some level of details of some of the data. However, information on the website is mostly in PDF and infographic formats, and is not fully open data.
- Support from policy, budget, and legal framework to the open data initiative is very sufficient to implement budget transparency, yet inadequate to promote for open data development. Existence of Law on Freedom of Public Information and Law on State Finance supports for budget transparency in Indonesia. However, a legal framework or even a policy directive (a kind of roadmap) on open data is not yet available in

Indonesia. Therefore, open data initiative in Indonesia are essentially run through volunteerism of government institutions.

- The decentralization or local autonomy that has been recently implemented in Indonesia creates high demand for budget transparency. Local governments start to realize that they need quick and valid information for planning development of their regions autonomously. On the other hand, many CSOs start to focus their work on budget. This anticipated demand is one of the factors that initiators from Ministry of Finance had in mind when they designed this budget transparency initiative and is the reason of why the budget data is published in website.
- Progress of global ICT development is recognized by actors on supply side (Ministry of Finance) as potential for developing existing budget transparency into broader scope, more up-to-date, interactive, and affordable transparency. The idea is implemented through utilizing the website of www.kemenkeu.or.id. However, the implementation cannot yet direct actors on the supply side to develop data supply that complies with open data standard (such as: machine readable, interoperability, etc.)
- Potential users of national budget data from the Ministry of Finance's website include NGOs working in budget, researchers from research institutions, journalists, local government officials, officials of technical departments of budget users. For them, the sources of national budget data are not from the Ministry of Finance website alone. They can obtain the data from other sources, although doing so may cost more time or money than it would cost if they had access to well structured machine-readable data.
- Data utilization or data accessing level in Ministry of Finance's website by potential users is relatively good. However, NGOs working on budget advocacy have special notes on budget data published on Ministry of Finance's website:
 - Budget datasets presented on the website are mostly aggregated data that are global, hence cannot be reused for those who need to process detailed, granule, and aggregated data on specific themes.
 - Most potential users, particularly NGOs working in budget advocacy, use data that are detailed, specific, local, and presenting specific cases. Therefore, they find it difficult to use budget data from Ministry of Finance's website.
 - The gap between supplied datasets and the data demanded by the NGOs makes it difficult for them to use the data supplied on the website.
- Positive impacts of budget transparency on user groups, such as NGOs, occur. For example, budget transparency makes NGOs easier to conduct evidence-based research that is believed to be able to produce better or more qualified researches. This is admitted to be improving NGO position when they are facing other stakeholders.
- However, the impacts from national budget open data initiative in Ministry of Finance cannot be measured yet, because substantial utilization of budget data from the system does not yet occur.
- On the other hand, potential impacts of the data supply through the website are observable in local governments. Some local governments, such as Jakarta Province government and Bojonegoro District government have initiative of opening their local budget data and utilizing financial data from Ministry of Finance for their applications.

However, unavailability of data in open format (i.e. not just PDFs) on the Ministry of Finance's website makes it difficult for these local governments to build applications that need national budget data from the Ministry.

- The sustainability and development potential of the open data initiative becomes visible as local governments and NGOs improve their interests in utilizing the open data from Ministry of Finance. Bojonegoro District government, for example, is trying to combine national budget data, province budget data, and their local budget data.

8.2 Conclusions

Budget transparency initiatives have gained big support in Indonesia, including support from the policy framework and from the interests of involved actors (from both supply side and demand side). However, the development of the budget transparency initiative into the provision of open budget data still has to face heavy challenges because of unavailability of an open data relevant policy framework and actors' limited understanding of open data.

In the development of the budget transparency initiative at the Ministry of Finance some disconnections occur which raise challenges for efforts to achieve the expected impacts of opening data. Disconnections occur between the idea/concept makers and concept implementers, as well as between the supply side and potential users (demand side).

The disconnection between idea/concept makers and implementers occur as the agenda of initial concept creators is under-translated by concept implementers. Thus, enthusiasm that occurs at the idea/concept phase does not happen anymore during the initiative implementation. The disconnection between supply side and potential users happen as benefits of the published budget information do not reach to potential users, while the other hand, potential users' expectations do not reach to data administrators implementing activities at the supply side.

The existence of NGOs that serve as intermediaries in budget (national/local budget) issues relatively helps potential user groups to be more able to utilize budget data. However, NGOs' role in utilizing open data is not evident enough yet. Intermediaries who interact with the supply side can also help improve the translation from conception to adoption of the open data idea.

The governance context that currently grows in Indonesia, in which demand for transparency (including budget transparency) is very strong, provides strong motivation for Ministry of Finance to make their budget transparent, as well as encouraging the emergence of open data initiative. However, it is important to involve civil society in building the national budget transparency system/national budget open data design. Thus, needs and preference of society as potential users can be included in the system design, and there is a greater chance of the potential of open data being realized.

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- www.webfoundation.org

List of Interviewees

	Government Officials	
1.	Askolani	Director of Directorate General of Budget - Ministry of Finance of Republik Indonesia
2.	Agoes Soesilo Endiarto	Local Office Head of Transportation, Communication, and Information, Kabupaten Sleman
3.	Ayub Suseno	Directorate General of Fiscal Balance -Ministry of Finance of Republik Indonesia
4.	Ernest Patria Raihan	Directorate General of Budget -Ministry of Finance of Republik Indonesia
5.	Made Arya Wijaya	Directorate General of Budget -Ministry of Finance of Republik Indonesia
6.	Suyoto	Bupati (Regency Head), Kabupaten Bojonegoro
	The Former of Government Official	
7.	Sri Mulyani Indrawati	The former Minister of Finance (Managing Director of World Bank)
	Civil Society Organizations	
8.	Abdul Cholik	Blogger http://abdulcholik.com/
9.	Abi Rizal	Director CENSPRO (Central Studies of Public Policy and Regional Development Program), Kota Pekalongan
10.	Agus Mulyadi	Blogger http://www.agusmulyadi.web.id
11.	Arifin	Director Persyarikatan Sekolah Rakyat, Kabupaten Kendal
12.	Bambang	Researcher in Transparansi Internasional Indonesia (TII)
13.	Chitra Retna	Article 33
14.	Dessy Eko Prayitno	Researcher in Indonesian Center for Environmental Law (ICEL)
15.	Firdaus Ilyas	Indonesia Corruption Watch (ICW)
16.	Joko Purwanto	Bojonegoro Institute (BI)
17.	Markus Christian	Program Director Bandung Institute of Governance Studies (BIGS)
18.	Maulana	Forum Indonesia untuk Transparansi Anggaran (Fitra)
19.	Nino Histiraludin	Expert Team in TKPKD (Tim Koordinasi Penanggulangan Kemiskinan Daerah) Kota Solo
20.	Pradna Paramita	GDM (Gerakan Desa Membangun), Kabupaten Banyumas
21.	Sulaiman Sembiring	Researcher in Indonesian Center for Environmental Law (ICEL)
22.	Wawan Sujadmiko	Transparency International (TI)
23.	Widiyarti	Pusat Telaah dan Informasi Regional (Pattiro)