Information Sharing between the Civil Administration and Citizens: An Implementation Proposal of Open Data Strategy in Japanese Local Governments

Noriko Kurata, Tokyo University of Science-Suwa, Japan
Yuko Kurata, Kansai Gaidai University, Japan

The International Conference on Japan & Japan Studies 2016
Official Conference Proceedings

Abstract
Administrative services in Japan have become diversified as a result of economic growth. However, as this growth has slowed down in recent years, there is now a need to review such conventional administrative service. Hence, in light of such a social climate, the Japanese government has been advocating an open data strategy (referred below as ODS) for administrative information ever since 2012. The aim of this study is to propose policies favorable to the promotion of ODS in local governments. In order to understand the current status of ODS, a survey was carried out based on plans implemented and websites managed by local governments within Tokyo. Additional interviews with local government staff were also conducted. The results showed that half of the local governments reviewed did not adhere to the open data regulation stated in ODS plan. Furthermore, some content and storage locations of information were accessible exclusively by the person in charge, and some data for possible editing or open format were not even available for internal perusal. As policies necessary for the promotion of ODS, this study suggests that information must be circulated openly within each responsible division while a person should be assigned to evaluate whether a piece of information should be made accessible to the public. Apart from creating a division specialized in data-sharing, each governing body should also reorganize itself to allow fluid and prolonged execution of ODS, as well as the initialization of open data measures within the administration.

Keywords: Japan, local government, open data, open format, secondary use, policy.

Introduction

Administrative services in Japan have become diversified as a result of economic growth. However, as this growth has decelerated in recent years, there has emerged a need for reviewing such conventional administrative services.

Therefore, the citizens must proactively participate in the development of a new service system so that they can be freed from Japan's traditional view of governing, which tends to "leave all town planning to the administration." Hence, considering such a social climate, the Japanese government has been advocating for an open data strategy (referred below as ODS) for administrative information since 2012.

The Japanese government defined open data that disclose data with machine readable format as well as under secondary use rule. (Ministry of internal affairs and communications, 2012a)

Necessity for ODS

It is assumed that administrative information from national and local governments is shared between the government and its citizens so that citizens can explore necessary government services. Information sharing is an essential element in achieving "autonomy," which constitutes cooperation with the citizenry, whether civil sovereignty in local government or national sovereignty over the nation. This perspective appears prominently in the "fundamental ordinance on local autonomy" for local governments in Japan.

The "fundamental ordinance on local autonomy" is also referred to as the "constitution for local government" because it outlines the basic and supreme laws for local governments. (Tsujiyama, 2002; Tsujiyama, 2003; Kisa&Osaka, 2003).

At the beginning, the ordinance defines citizen sovereignty and civil cooperation and establishes the sharing of administrative information with citizens as a means to achieve its objectives. (Tsujiyama, 2002; Katayama, 2001)

The theoretical framework that can be seen in this ordinance indicates that information sharing with citizens increases the transparency of local government administration, and it is an element of civil sovereignty and civil cooperation.

Two approaches exist to the sharing of administrative information. The first is a method that discloses information through a request of disclosure from the nationals and citizens through an "information disclosure system." The other is an "information provision system," which is a government initiative that provides information under the government's discretion. (Uga, 2004)

As an action that would constitute an "information provision system," Japan is establishing "e-stat," which aggregates governmental statistics for the country. "E-stat" was developed by the Ministry of Internal Affairs and Communications in 2008 to provide different statistical information on a single website and on which each ministry can publish information separately. Citizens can download from "e-stat" raw data from surveys conducted by government ministries and agencies in XLS and CSV formats.

In 2015, the Cabinet Secretariat created a system that has been named "RESAS." This system will utilize some of the big data that is held in the public and private sectors, such as population estimates and industrial structures, and display them on a map as

graphics. Citizens can download raw data to generate graphics in CSV format as necessary. CSV files are machine readable and can also be used by secondary users.

If the machine readable files are published in this manner, in a format that can be used by secondary users, citizens can prepare various items of information by processing the simple data. In addition, if the raw data as well as a report on a study is published when the study is conducted, citizens can perform their own analyses. ODS should be promoted for civil autonomy.

Method

(1) Survey Subjects on Local Governments

This study proposes policies favorable to the promotion of ODS in local governments. To understand the current status of ODS, a survey was conducted on the basis of plans implemented and websites managed by local governments within Tokyo.

The analysis was conducted in cities within Tokyo. As of April 1, 2016, local governments within Tokyo included 26 cities, 23 special wards, 5 towns, and 8 villages. As these special wards are capable of conducting affairs almost similar to cities, some affairs slightly depend on Tokyo Prefecture. Special wards do not have the same equal rights on autonomy as cities.

Introducing ODS is a matter of national policy; on the other hand, this survey was conducted within local government judgments on the introduction of ODS and was closely related to local autonomy. Therefore, the survey was conducted only in cities.

(2) Survey Subjects on Plans and Websites

Tokyo Prefecture comprises 26 cities. Each of them has its own website and provides a wide variety of information about the city to citizens and people, including plans and surveys.

This survey investigated whether these cities disclosed plans stipulating ODS and whether these cities disclosed information corresponding with ODS.

The plans of a city comprise comprehensive general plans as well as individual plans by the sectors. For example, many cities include local information plans as one of the individual plans. In this survey, individual local information plans were investigated before the general plans.

In addition to the investigation of plans, this survey investigated the formula of these data, as many cities run city websites and disclose information such as population or financial condition.

Moreover, in addition to the aforementioned investigation, an interview to local government staffs in one of the investigated cities was conducted.

(3) Schedule

A survey was conducted in November 2015 and additionally in May 2016. Additional interviews with local government staffs were also conducted in December 2016.

Results and Discussion

(1) Via Investigation
Twelve out of 26 cities had plans stipulating ODS. Within 12 cities, 7 cities stipulated ODS with local information plans, 5 cities stipulated ODS with general plans as shown in Table 1.

Table 1. Current status on stipulating ODS in ordinances.

Without stipulation	With stipulation	Total
14 cities	12 cities	26 cities
	(The details)	
	In individual plans: 7 cities	
	In general plans: 5 cities	

Table 2. Current status on the definition of ODS stipulated in the plans of 26 cities in Tokyo.

	Secondary use	Machine-readable data	To promote ODS	Total
With stipulation	6 cities	6 cities	6 cities	12 cities
Without stipulation	6 cities	6 cities	6 cities	12 cities

Table 3. A gross outline of 5-star deployment scheme for Open Data suggested by Tim Berners-Lee.

5-star scheme	Example of data format
1-star	PDF, JPG
2-star	xls, doc
3-star	XML, CSV
4-star	RDF, XML
5-star	LOD, RDF

With regard to this, ODS was stipulated in just half of the city plans, including Tokyo. Within 12 cities, 6 cities were stipulating machine readable data in ODS definition. Six cities stipulated to proceed with ODS, as shown in Table 2.
With regard to this, just half of the cities stipulated the ODS definition as the national government definition; other cities used comprehensive expressions as not to limit explanation of ODS and to avoid having to enforce the national government ODS.

Regarding open data, Tim Berners-Lee suggested a 5-star scheme; the Ministry of Internal Affairs and Communications introduced his idea. (Lee, 2006; Hausenblas, 2012; Ministry of internal affairs and communications, 2012b)

1-star scheme is the first phase. The key word of this step is open license. Disclosure of human and machine readable data should occur with non-editable data. PDF format data will meet this phase. 2-star scheme is the second phase and the key word of this step is readable human and machine. Add computer editable disclosure to the 1-star requirements. XLS and doc format data will satisfy this phase. 3-star scheme is the third phase with open format as the key. Add open useable format disclosure with every application to the second-phase requirements. XML and CSV format data will meet this phase. 4-star scheme is the fourth phase with universal resource identifier as the key. Web standardized format data is required. RDF and XML will meet this phase. 5-star scheme is the completed phase with 4-star data disclosed under the condition of output communication available.
As the key is linked data, Lod and RDF scheme will satisfy this last phase.

ODS as a national policy is a machine readable data format with open format.
Hence, the 3-star phase and subsequent phases include the machine readable data that can be construed as ODS enforcement.
As a result, 15 local governments disclosed no data in over half of subjects, shown in Table 4. Among them, 10 cities had no plans with described ODS.
Four cities were estimated to be under the 1-star scheme. Three cities were found to proceed to the 2-star phase with population data disclosed by XLS format although numerous data was disclosed by PDF.
Four cities were estimated to be under the 2-star phase and three cities under the 3-star phase. None of the cities were estimated to be under the 4-star phase or the 5-star phase.

This result shows that local governments of only three cities could have submitted ODS as the national policy. ODS is a mission, for hereafter, current status should be said in the starting phase.

Table 4. Implementation status on ODS of 26 cities in Tokyo.

(Unit: city)

	Without data	1-star	2-star	3-star	4-star & 5-star	Total
With stipulation	5	3	2	2	0	12
Without stipulation	10	1	2	1	0	14
Total	15	4	4	3	0	26

(2) Via Interview

The interview revealed that the internal sharing of information within the government, which is the stage before information is shared with the citizens, is currently not being conducted to a satisfactory standard.
 The insufficiency of internal information sharing about the plan is a particular problem. In this local government, 32 plans have been developed, all of which have only been shared as PDFs. Before the plan was created, a survey for citizens was

conducted to explore the direction of the plan. However, the raw data of the survey results was not even shared internally within the government.

In addition, the officer responsible in the relevant department had stored the raw data for the population estimates that was used in the plan's development in removable media, and information about the data storage location was not shared internally within that department. Thus, an employee, who was unaware that the raw data for the population estimates existed, notified members of staff from other departments of its absence, then a lot of time was spent in creating another set of population estimates. This is but one example of such instances.

From this hearing, the problem has emerged that information is not being shared internally even within the government, which was the stage before information is provided to citizens.

Although the officer responsible is aware of the importance of sharing information, she/he says she/he is too busy doing her/his own duties to take care of the storage location of departmental information. In particular, there is no way for anyone except for the person responsible to search for data that is not stored in departmental shared folders, which are configured across local area networks. Due to the fact that in local government in Japan, government officials are transferred to different departments approximately every four years, it is likely that if data is created after five years, nobody will know the content or location of that data.

Conclusion

From the investigation, in the current status, 13 cities (approximately 40% of the 23 cities in the before ODS phase) did not prescribe ODS in the city planning. The future direction of the city points to a possibility to procced with ODS in the future, even if no data is disclosed under the current status. Introducing ODS might be doubtful without prescription included in the plans. Local governments in cities without ODS in the plans might take longer to introduce ODS than other cities. Local governments in Tokyo are often evaluated as advanced cities in every aspect, although in reality, disclosure of administrative information on the web is critical.

Furthermore, from additional interviews, some content and storage locations of information were accessible exclusively by the person in charge, and some data for possible editing or open format were not available for internal perusal.

As policies necessary for the promotion of ODS, this study suggests that information must be circulated openly within each responsible division while a person should be assigned to evaluate whether a piece of information should be made accessible to the public.

In addition to creating a division specialized in data sharing, each governing body should also reorganize itself to allow fluid and prolonged execution of ODS as well as the initialization of open data measures within the administration.

References

Hausenblas, M. (2012). 5star open data. Available from http://5stardata.info/.

Katayama, K. (2001). [Information sharing and the innovation of local government-Report from Niseko town]. Tokyo: Koujin No Tomo Sha. Japanese.

Kisa, S., & Osaka, S. (2003). [The constitution of our city –challenges in Niseko Town-]. Tokyo: Nihon Keizai Hyouronsha.

Lee, B.T. (2006). Linked data. Available from http:www.w3.org/DesignIssues/LinkedData.html.

Ministry of internal affairs and communications. (2012a). [Promotion of open data strategies]. Available from http://www.soumu.go.jp/menu_seisaku/ictseisaku/ictriyou/opendata/. Japanese.

Ministry of internal affairs and communications. (2012b). [What is open data]. Available from http://www.soumu.go.jp/menu_seisaku/ictseisaku/ictriyou/opendata/opendata01.html. Japanese.

Tsujiyama, Y. (2002). Matsushita, K., Nishio, M., & Shindou, M. (Eds.). [Iwanami course: Conception of local government-4-structure] Tokyo: Iwanami Shoten. Japanese.

Tsujiyama, Y. (2003). [Why fundamental ordinances on local autonomy is needed?] Tokyo: Koujin No Tomo Sha. Japanese.

Uga, K. (2004). Administrative law text 1. Tokyo: Yuhikaku. Japanese.