

**IFLA Satellite Meeting**

*The Challenge of Multiple Identities. Multiethnicity in Genealogy, Local History and Regional Memory—Challenges and Opportunities for Libraries and Other Memory Institutions*

Martynas Mažvydas National Library of Lithuania,  
Vilnius 16-17 August 2017

<http://konferencijos.lnb.lt/ifla-2017/en/>

## **A Progress on the Digital Collections of Local History at the Public Libraries and Other Memory Institutions in Japan**

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### **Abstract:**

*The academic library in Japan started up a service of digital collections on their websites before the public library did. The service for digital collections in public library started with the class of prefectural library which is a main library in each prefecture in the mid-2000s. During the ensuing decade, most prefectural libraries currently provide the service for digital collections on their websites. Since the city, town and village libraries and other memory institutions are relatively small size, if these libraries and institutions begin to start the service for digital collections individually, the service might not start lightly. The ADEAC (A system of Digitalization and Exhibition for Archive Collections) as a cloud platform system for digital collections started in 2013. The relatively small size public libraries such as city, town and village library and other memory institutions had come to provide the service for digital collections on the platform of ADEAC. The ADEAC has a lot of view and search functions for the digital collections of local history, such as full-text search capability, high-resolution image, 3D image. This paper introduces the current state about the digital collections of local history at public libraries and other memory institutions in Japan and describes about the unique features of ADEAC for viewing and searching the digital collections of local history, and then discusses the future directions about the digital collections of local history at public libraries and other memory institutions.*

**Keywords:** digital collections, ADEAC, local history, public libraries, cloud platform system.

## Introduction

Public libraries play an important role as parts of the digital, smart, knowledge and creative infrastructures of the modern societies. Libraries have economic value as location factors in the two spaces of the physical and the digital environments (Mainka, et al. 2013). Moving towards the field of digital preservation in our societies, the research in digital libraries and digital preservation has progressed side by side for nearly two decades both with the same broad mission to make digital information accessible and useable to the user community of the present and future (Chowdhury, 2010).

The academic library in Japan started up a service of digital collections on their websites before the public library did. One of the reason why the academic libraries started before the public libraries did is considered that Science Council in Japan published a proposition to improve and strengthen the functions of digital library in academic libraries in 1996. The service for digital collections in public library started with the class of prefectural library which is a main library in each prefecture in the mid-2000s (Kubo, 2008).

In the United States, virtually every public library offers public Internet access, however, all libraries are not equal with rural public libraries lagging behind libraries in more populated areas in providing technology services (Real, et al. 2014). The public libraries in Japan face a similar situations as the public libraries of the United States were played out the gap of technology services between rural areas and cities.

The number of public libraries providing their resources on the Web were 121 in 2007(Kubo et al., 2008). This figure is quite low compared to 3,111 public libraries of the same year in Japan. The proportion of public libraries providing digital archives to the users was 3.9 % of the total public libraries. At the time, the number of prefectural libraries providing their resources on the Web were 27. The total number of prefectural libraries is 62 in 2007. The proportion of public libraries providing their resources on the Web is 43.5 % of the total number of prefectural libraries. The large public libraries such as prefectural libraries started to provide the collections of digital archives on their Web in the mid-2000s.

A survey on public libraries providing digital archives to the users was conducted in 2013. However the survey can not make a direct comparison with the former survey on public libraries providing their resources on the Web in 2007, the total number of public libraries providing digital archives to the users was about 85 in 2013(Tokizane, 2015). This figure is quite low compared to 3,248 public libraries of the same year in Japan. The proportion of public libraries providing digital archives to the users was 2.6 % of the total public libraries.

During the ensuing decade, most prefectural libraries currently provide the service for digital collections on their websites. Since the city, town and village libraries and other memory institutions are relatively small size, if these libraries and institutions begin to start the service for digital collections individually, the service might not start lightly.

The ADEAC (A system of Digitalization and Exhibition for Archive Collections) as a cloud platform system for digital collections started in 2013. The relatively small size public libraries such as city, town and village library and other memory institutions had come to provide the service for digital collections on the platform of ADEAC.

This paper introduces the current state about the digital collections of local history at public libraries and other memory institutions in Japan and describes about the unique features of

ADEAC for viewing and searching the digital collections of local history, and then discusses the future directions about the digital collections of local history at public libraries and other memory institutions.

### Digital collections of local history in Japanese public libraries and other memory institutions

The best practices of digital archiving projects conducted by public libraries in Japan were surveyed by the National Diet Library (NDL) in 2010. The NDL surveyed 23 domestic public libraries actively conducting digital archiving projects to provide contents and/or information about their regions including 3 local governments. In this survey, interviews by e-mail were conducted about the start of digital archiving projects, contents, process and framework for construction of digital archives, daily work and issues, participation of regional residents, cooperation with other institutions, use of commercial services, future prospects, etc (Digital Library Division of NDL, 2010).

The 20 cases of public libraries consisted of 12 prefectural libraries, 5 city libraries, 2 town libraries and 1 village library actively conducting digital archiving projects. The proportion of prefectural libraries per all public libraries actively conducting digital archiving projects is 60 %. The digital archiving projects in prefectural libraries constitute a far greater portion of all digital archiving projects in public libraries. In other 3 cases, the local governments conduct digital archiving projects for the purpose of regional development (Digital Library Division, 2010). As an example of digital archiving projects, the Future University Hakodate cooperates with Hakodate City Central Library to develop a Content Management System for digital archives (Okuno et al., 2014).

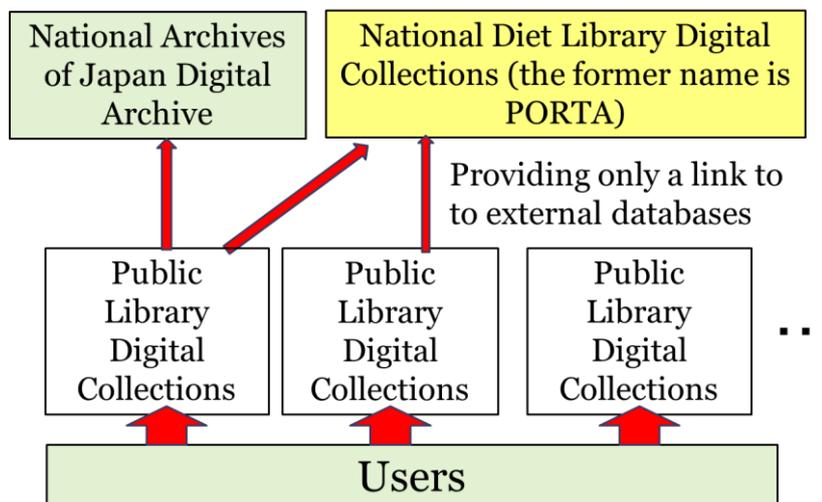


Fig. 1 Public libraries providing only a link to external databases in NDL and National Archives of Japan.

As shown in Fig. 1, most of the surveyed institutions related in some way to other institutions, however, the websites among public libraries being set up the digital collections existed separately and each website of public library only linked to the external databases, the “National Diet Library Digital Archive Portal” (PORTA) in NDL and the “National Archives of Japan Digital Archive” in National Archives of Japan.

The websites of public libraries being set up the digital collections are many instances of cooperation with other museums, archives and universities within the same local government

body. As one of representative examples of which digital contents are provided by the other organizations or individuals shown in Fig. 2, the website of digital collections named as “Digital Okayama:A Large Encyclopedia” is run by Okayama Prefectural Library.



Fig. 2 A website of digital collections named as “Digital Okayama:A Large Encyclopedia” by Okayama Prefectural Library

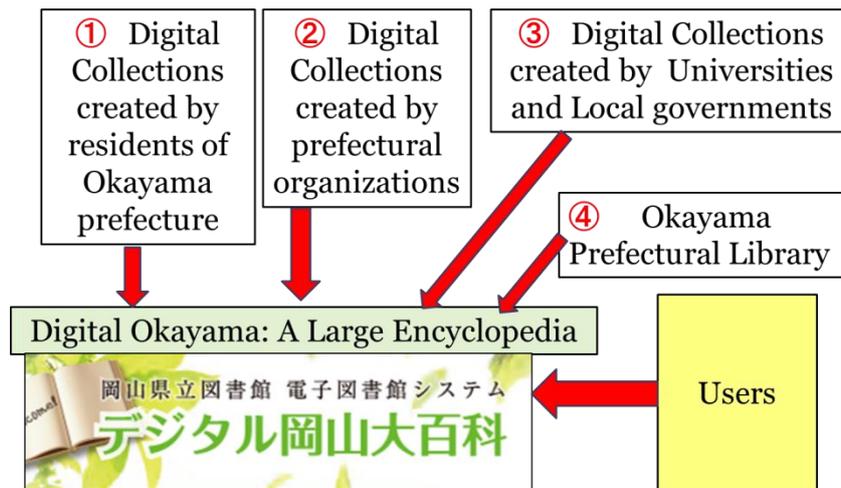


Fig. 3 The sources of digital collections on “Digital Okayama:A Large Encyclopedia” by Okayama Prefectural Library

The sources of digital collections on “Digital Okayama:A Large Encyclopedia” are provided by the residents of Okayama prefecture, prefectural organizations, universities, local governments of city and town and Okayama Prefectural Library (Fig. 3). The Okayama Prefectural Library as the website host also advice about computer systems, data registration, maintenance, et cetera to other organizations and individuals.

The survey by the National Diet Library (NDL) in 2010 reported that the websites of digital collections by public libraries had many examples of cooperation with local universities or colleges. Especially, the websites were created by utilizing universities’ or colleges’ know-how about system construction, creating contents, cataloging, research on materials. There were the cases to make a commission contract with a local university for constructing the

system to provide digital contents, and also creating new contents based on collaborative research with a local university (Digital Library Division, 2010). The prefectural libraries play an important role as a digital collection center within a prefecture for serving the digital contents such as local history and others. The role of prefectural libraries might be increasing in the future.

### ADEAC as a cloud platform system for digital collections

The ADEAC (A system of Digitalization and Exhibition for Archive Collections) as a cloud platform system for digital collections has started in 2013(Fig. 4). The ADEAC is based on the research and developments from 2010 to 2012 at the Research Division of Collaborations with Society, Historiographical Institute of The University of Tokyo (Ishikawa, 2013).



Fig. 4 A system of digitalization and exhibition for archive collections (ADEAC)

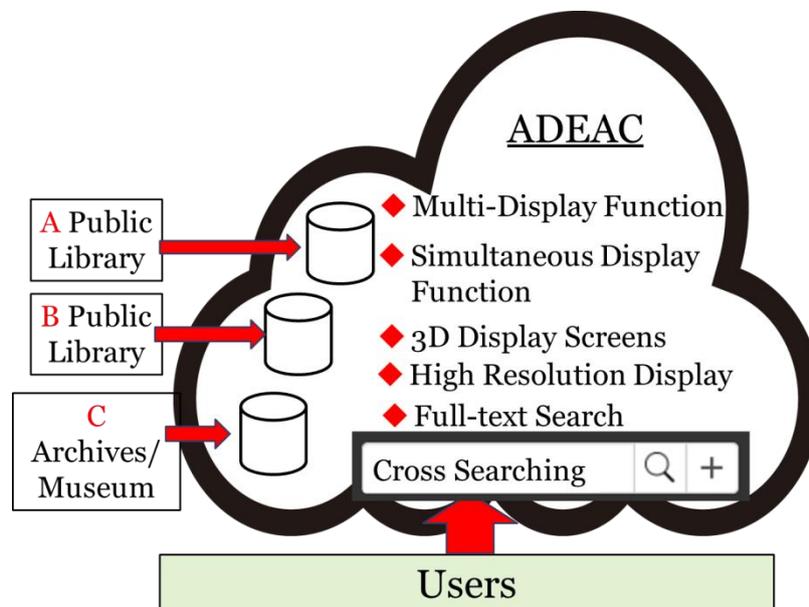


Fig. 5 ADEAC as a cloud platform system for digital collections

As shown in Fig. 5, the ADEAC has a lot of view and search functions for the digital collections such as multi-display, simultaneous display, 3D display screens, high-resolution

display, full-text search and cross searching. Each of the functions will be explained in the next chapter. The relatively small size public libraries such as city, town and village library and other memory institutions had come to provide the service for digital collections on the platform of ADEAC.

### Search functions of ADEAC for the digital collections of local history

The ADEAC has a lot of view and search functions for the digital collections such as multi-display, simultaneous display, 3D display screens, high-resolution display, full-text search and cross searching as shown in Fig. 5. The relatively small size public libraries such as city, town and village library and other memory institutions had come to provide the service for digital collections on the platform of ADEAC because the ADEAC approach for digital collections is less expensive than the development of whole system for digital collections or archiving.

A multi-display function of original manuscript and print letters on the same document is one of the viewing function of ADEAC as shown in Fig. 6. When a user accessed to a rarebook which is hand-writing manuscript, many users can read more easy if the rarebook are displayed on the printed letters.

As shown in Fig. 7, a simultaneous display function is the other viewing function of ADEAC. In the case of map, the function offers convenience to library customers who can make present map compared with old map in the same place.



Fig. 6 Multi-display function of original manuscript and print letters on the same document in ADEAC

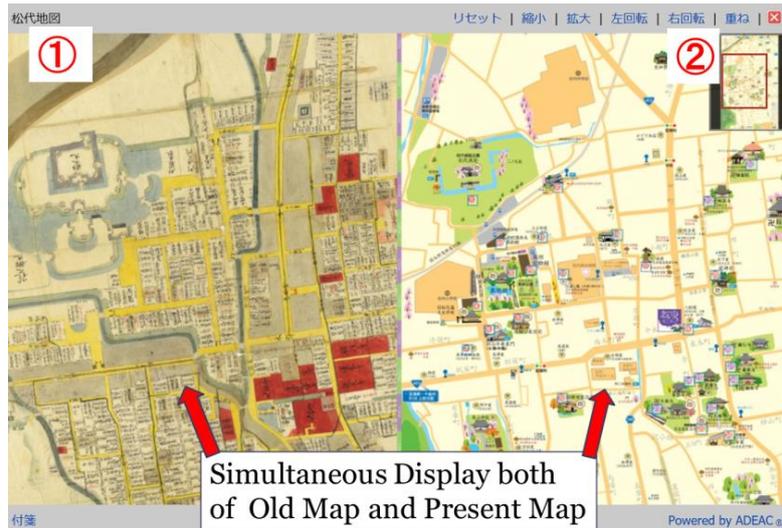


Fig. 7 Simultaneous display function both of old map and present map in ADEAC



Fig. 8 The function of 3D display screens of an old earthenware in ADEAC



Fig. 9 The local history materials of Mizuho-machi described in both English and Japanese on ADEAC

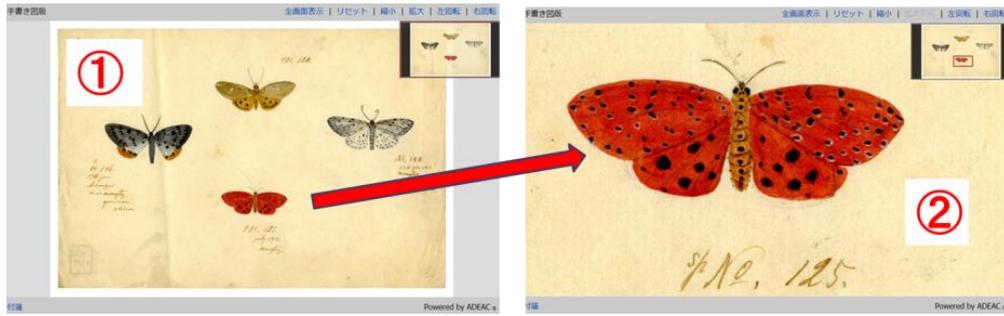


Fig. 10 High resolution display function in ADEAC

The other display function in ADEAC is 3D Display Screens as shown in Fig. 8. The function is very helpful as a way of displaying the tridimensional materials such as earthenware, sculpture and dress for the users.

The local history materials of Mizuho-machi are described in both English and Japanese because of the multinational residents living in the town as shown in Fig. 9. The multilingual search function in ADEAC is of great utility for residents in the town at first and also anyone who inquires historical information about the town.

The ADEAC have other display function of high resolution display as shown in Fig. 10. The users can enjoy the detailed image of an object.



Fig. 11 The functions of cross-searching and full-text search in ADEAC

The cross searching and full-text search play a key role in ADEAC because ADEAC is an important portal website for the users who are looking for the historical materials as shown in Fig. 11. The users can access to historical materials in different areas by using cross searching function of ADEAC at one time. The full-text search which expands the access point to the object enhances the prospect for finding a historical material what the user is looking for.

### **The digital collections of local history on ADEAC**

The types of information sources of digital collections in local history and related fields differ according to some instances. Tokizane, et al. (2015) classified the digital archives at public libraries into 15 categories as follows; Maps, Paintings of art and calligraphy, Picture maps, Other printings, Old documents, Photographs, Books, Sound/Music, Newspapers, Administrative documents, Video/Movies, Cubes, Databases, Catalogs and Others (Table 1).

The collected digital collections on ADEAC are classified into 6 categories; Historical Materials, Historical books, Newspapers/Publicity materials, Administrative documents, Personal documents and Art materials (Table 1).

Tokizane, et al. (2015) surveyed 85 public libraries which were providing the collections of digital archives and the total number of the collections of digital archives divided by the types of information sources was 196. This figure results more than twice the number of public libraries. The fact shows that each public libraries is providing over two types of information sources within the collections of digital archives on average. They found that the category of books which include modern and old printed books, manuscripts and journal articles etc. was the most in number among the collections of digital archives in public libraries, and the second highest number in the collections was the category of photographs .

The ADEAC includes the collections of digital archives and related fields from 61 public libraries and other memory institutions in Japan. The total collections of digital archives and related fields on ADEAC which are divided by being based on the types of information sources was 69. This figure results approximately same the number of public libraries, and is different from the total number of the types of information sources surveyed by Tokizane, et al. (2015).

The reason seems to be a difference in the diagrams of the collection groupings between Tokizane, et al. (2015) and ADEAC. The historical materials in digital collections on ADEAC are classified into only one type of information sources, while Tokizane, et al. (2015) divided more numerous types of information sources which correspond to historical materials on ADEAC. The other reason of the difference is considered that the public libraries objected are different between Tokizane, et al. (2015) and ADEAC. The majority of public libraries being engaged in ADEAC are city, town and village libraries, on the otherhand, the survey results by Tokizane, et al. (2015) seem to include many prefectural libraries which are relatively large scale.

Table 1 The types of information sources of digital collections in local history and related fields.

(A)					(B)			
No.	Types of Sources (Tokizane, 2015)	No. of Libraries	Percentage of the total sum of the numbers	The sum from 1 to 7	No.	Types of Sources in ADEAC (2017)	No. of Libraries/Memory Institutions	Percentage of the total sum of the numbers
1	Maps	23	11.7%	90.3%	1	Historical Materials	59	85.5%
2	Paintings of art and calligraphy	18	9.2%					
3	Picture maps	23	11.7%					
4	Other printings	9	4.6%					
5	Old documents	17	8.7%					
6	Photographs	32	16.3%					
7	Books	55	28.1%					
8	Sound/Music	1	0.5%		2	Historical books	3	4.3%
9	Newspapers	4	2.0%		3	Newspapers/Publicity materials	1	1.4%
10	Administrative documents	5	2.6%		4	Administrative documents	1	1.4%
11	Video/Movies	3	1.5%		5	Personal documents	4	5.8%
12	Cubes	1	0.5%		6	Art materials	1	1.4%
13	Databases	2	1.0%		—	—	—	—
14	Catalogs	3	1.5%		—	—	—	—
15	Others	6	3.1%		—	—	—	—
	Total	196	100.0%				69	100.0%

Note 1) (A); the data calculated in reference to the article by Tokizane, et al. (2015). (B); the data calculated in reference to the website of ADEAC.

Note 2) Some libraries and memory institutions have different types of digital collections within each organization. (A) the total number of libraries and (B) the total number of public libraries and other memory institutions had exceeded each total number of (A) 85 libraries and (B) 61 libraries and other institutions which provide the digital collections.

## Discussion

The access pathways of the users to the digital collections of local history at the public libraries and other memory institutions other than the direct access to their websites are shown in Fig. 12. We have now three access pathways to the digital collections of local history at the public libraries and other memory institutions.

The first pathway is to access each website of public library and memory institution for searching and/or reading the digital collections of local history directly. Notice that this basic access pathway to access each website of public library et al. was not shown in Fig. 12.

The second pathway is to access the digital collections of local history through a cloud platform system as ADEAC which expands the access points to the digital collections such as cross searching and full-text search and also provides a wide variety of display functions such as multi-display, simultaneous display, 3D display screens and high-resolution display (Fig. 12).

The third pathway is to access the digital collections of local history through the “National Diet Library (NDL) Search” as a portal site for library users which collects metadata from 27 prefectural libraries, 7 city public libraries, 1 NPO, Cultural Heritage Online, e-National Treasure by National Museum, Digital Archive by National Archive of Japan etc (Fig. 12). Nowadays, the users can approach the digital collections of local history at the public libraries and other memory institutions through using one or more strategies.

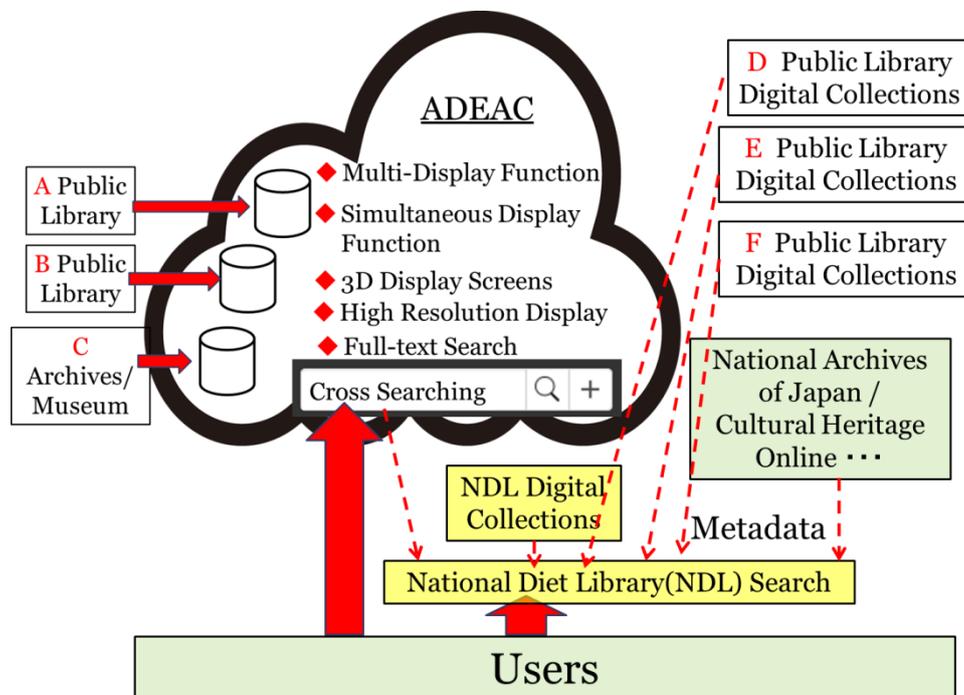


Fig. 12 The access pathways to the digital collections of local history in the public libraries and other memory institutions

About 10 years ago, we could only access the digital collections of local history separately through each website of public library or memory institution and there were the linkage from the websites of public libraries linking to the external databases such as the “National Diet Library Digital Archive Portal” (PORTA) in NDL and the “National Archives of Japan Digital Archive” in National Archives of Japan only as shown in Fig. 1. There are great differences between the prior state 10 years ago as shown in Fig. 1 and the present state to access the digital collections of local history as shown in Fig. 12.

As was described previously, many public libraries and memory institutions have tried to provide the digital collections of local history to the users. The several surveys and researches were conducted for how many public libraries and/or memory institutions had carried out the digital collections of local history to the users over the past decade (Kubo, 2008 and Digital Library Division, 2010). The most recent survey showed only 85 public libraries providing the digital collections of local history to the users (Tokizane, et al. 2015).

Nowadays, the number of public libraries is over 3,000 in Japan. We consider that the number of public libraries and other memory institutions which provide the digital collections of local history to the users should be necessary to increase further in the future. At the same time, when we try to access the digital collections of local history, the full-text search

function of a system is a very important factor to receive relevant search results from the digital collections of local history in public libraries and/or memory institutions, and the cross searching function of a system which is to just broaden a search is also very functional for accurate and effective retrieval as being achieved by ADEAC. In this year, the ADEAC started to provide the metadata to NDL Search, and so the users can access the digital collections on ADEAC through NDL Search. Since then, the number of hits to the ADEAC increased considerably to 730,000 in May 2017.

Finally, we hope the digital collections of local history at public libraries and other memory institutions expand the type and scope of collections in Japan because a wide variety and large amount of source materials locates in Japan, and so Japan is called as “Shiryō-taikoku” (a historical material-rich country). If we can do that, residents will gain greater mental fulfillment and enjoy the digital collections of local history in their hometowns.

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