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DISASTER MANAGEMENTS STRATEGY FOR FUNCTIONAL CONTINUITY OF ARCHIVES AGAINST THE PANDEMIC[1]

Kippeum Choi[1] Yoona Kang[1] Hyo-Jung Oh[2]

Introduction

The pandemic caused by COVID-19 has changed everything in society as a whole and in our daily lives. Many countries, including Europe and the United States, have imposed lockdown to prevent the spread, prohibited access to publicly used facilities, and controlled immigration restriction. According to the Global Risk Report of The World Economic Forum (2020), infectious diseases is one of the top 10 risks, and it is selected as a risk with a low probability of occurrence but a very high impact. In fact, it has only taken 3 months for WHO to declare the pandemic alert level to phase 4 since the outbreak of COVID-19 in December 2019.

The situation caused by COVID-19 also had a significant impact on the major information institutions. Archives, as one of them providing integrated access to information resources, not only serve as memory institutions for a culture but also make public records available to citizenry as legally and ethically appropriate [1]. However, due to the closure of information institutions caused by pandemic, many people are not provided with information services from public. As a result, information gap is widening. Therefore, archives should be able to provide continuous core functions, especially should have a system in place to prepare for unexpected social disasters such as a pandemic. Thus, this study intends to present a sustainable and continuous strategy for disaster management of archives in the face of a pandemic and the upcoming post-corona era.

To achieve this goal, our study, two major sections were conducted: 1) compare with activities of domestic and foreign archives management institutions against a pandemic; 2) to derive of considerations for ensuring the business continuity function of the archives and present the actual strategy of the archives in preparation for infectious diseases.

The Process of Disaster Management

General disaster managements to prevent and prepare for disasters due to abnormal weather conditions and earthquakes usually accomplished by a cycle of four processes: *Prevention – Preparedness – Response - Recovery (PPRR)*. More specifically, the process of 'Prevention' takes actions to reduce or eliminate likelihood or effects of an incident.

The process of 'Preparedness' takes steps before an incident to ensure effective response and recovery. The process of 'Response' contains, controls or minimizes the impacts of an incident, and last the process of 'Recovery' takes steps to minimize disruption and recovery times [2]. The comprehensive approach to the PPRR risk management model is adopted as a basic model in countries such as the United States, Canada and Australia [3][4].

In addition, there are international standards, which are ISO 22301:2019 (Business continuity management systems) and ISO 22313:2020 (Business continuity management systems – Guidance on the use of ISO 22301), to implement the plan necessary to maintain the core

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functions of the institution in disaster. It provides consistent principles for planning, response, and recovery in the situation of business interruption due to disasters so that the institution can continue to operate as well [5][6]. In particular, infectious diseases such as COVID-19 are classified as gradual disruption in ISO 22301:2019 and ISO 22313:2020. In those standards, the key to risk management is how effective control of plans based on BCM (Business Continuity Management).

In Korea, the PPRR model is also followed by the Framework Act on Disaster and Safety Managements. The government of Korea recently implemented the COOP (Continuity of Operations Plan) to continue the core functions of public institutions in accordance with the mandatory establishment of a functional continuity plan for disaster management agencies [7]. The COOP based on ISO 22301 is to prepare for business functions interruption of major national projects and public institutions including archives and libraries, during the disruption due to a large-scale disaster.

In 2018, COOP was implemented in Korea. A number of public institutions operating COOP were selected: 41 central administrative institutions, 245 local governments, and 69 disaster management agencies. However, the National Archives of Korea was not in the list. Meanwhile, the National Archives of Korea established Security and Disaster Management Standard based on the PPRR model, but business functional continuity plan was not included [8]. In addition, most of the standards included natural hazards, such as construction and facility defects, industrial disasters, and insufficient preservation management due to disasters that could occur in archives. However, there was no guidance for managing social risks caused by a pandemic as well. Therefore, it is time to establish a new direction and strategy after the suspension of records management work and the closure of archives in a pandemic situation for the smooth operation. For this, it needs to quickly reactivate the core functions of the institution and to ensure continuity of business functions.

The activities of archives against the pandemic

The major cases of domestic and foreign archives were compared to ensure continuity of work by quickly resuming the core functions of archives after the spread of infectious diseases: in terms of operation, service, and collection of record information resource aspect. To explain in more detail, in the operational aspect, the most important thing to reduce the time of functional interruption to a minimum is the most important, so we investigated the changes in the overall operation of the archives. In the service aspects, we looked at how the user services was operated after the closure of the archives. In particular, the service of archives is necessary for establishing wider business continuity planning according to TNA [9]. Finally, we examined the status of collection of records related to the pandemic in archives. The comparison consists of ICA (International Council on Archives), TNA (The National Archives), NARA (The US National Archives and Records Administration), Archives Nationales de France, and 5.18 Archives of Republic of Korea. As shown in <Table 1>, the contents of comparison were divided into O, △ and X. O indicates that detailed guidelines and services are being provided. △ indicates that it was simply written as a post through a web page, and X indicates that no special response activity was found.

First, operational activities include conducting self-investigation of internal and external changes in archives against the pandemic. It includes preparing guidelines for remote work and controlling archives according to crisis alert level as well. ICA, TNA, LAC distributed teleworking

guidelines and intended to supplement the guidelines with continuous feedback [9][10][11]. In the case of TNA, a survey was conducted to check the business continuity panning, and the digital conservation workflow was implemented to develop digital technologies as the digital environment rapidly shifted to a contact-free environment due to COVID-19 [10]. In addition, most of archives posted guidelines on the closure and control of archives according to crisis alert level on their web page.

<Table 1> Analysis of domestic and foreign archives activities against the pandemic

Archives / Activities		International Association	Foreign Archives			Domestic Archives
		ICA	England	Canada	France	REPUBLIC OF KOREA
			TNA	LAC	Archives Nationales	5.18 Archives
Operational Activities	Survey for the pandemic	X	O	X	X	X
	Guidelines for remote work	O	O	O	X	X
	Controlling Archives	△	O	O	△	△
Services	Online exhibition	△	O	△	O	O
	Free open data	△	O	O	X	X
	Webinar	O	O	O	O	X
Collecting records	Corporation	X	O	O	X	X
	Personal	X	X	△	X	X

Secondly in the service aspects, offline exhibitions have almost been turned to online. TNA, Archives Nationales of France, and the 5.18 Archives of Korea run VR panorama exhibition, providing a service that looks like an actual exhibition. It can be selected and viewed the records displayed in the online space [10][12][13]. In the case of ICA, digital maps have been developed to share information of digital collections, online exhibitions, and so on [9]. In the case of LAC, they recognized that citizens could not physically come to the archives, the data and records were opened online for free so that various people could access the records [11]. Likewise, TNA, LAC, and the Archives Nationales of France held academic seminars through video conferences and released them to ensure that the academic infrastructure could be continued [10][11][12].

Third is the activity of collecting records and information resources. Many archives have collected corporate and personal records to collect fragments of history and to secure data to cope with disaster. TNA collected a variety of web information, in addition to testimony to memories of corporations [10]. Also, LAC collected personal records during COVID-19 era [11].

In summary, the activities that archives have done in order not to lose core functions in the pandemic era are as follows: Before a disaster, the goals shall be set, and disaster management plans and guidelines shall be newly established in consideration of the institutional conditions. Next, the core functions of archives are identified. It also investigates the impact of business

suspension on the institution as well. At the same time, guidelines for the management and operation of human resources of archives shall be established, and education and training shall be conducted to cope with disaster. In addition, the lowest service level shall be secured to enable access of archives. Finally, the records related to disasters shall be collected for the future

Actual strategy for functional continuity of archives

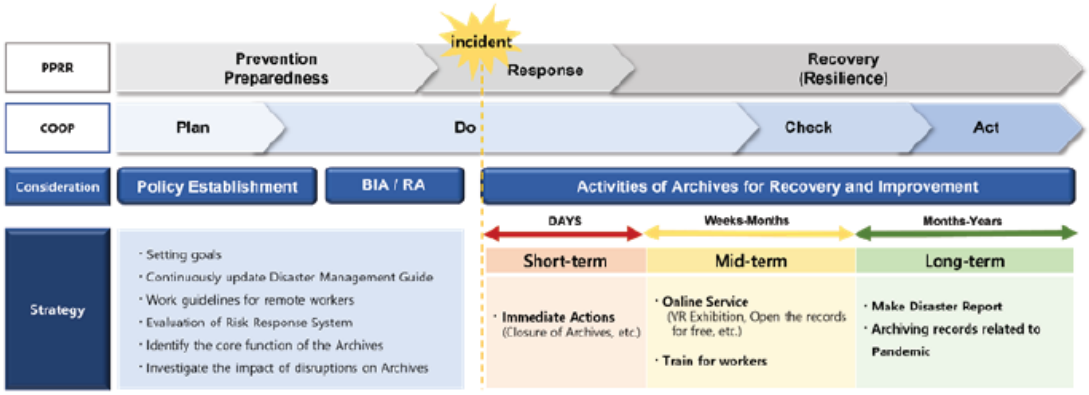
To draw up advanced disaster management strategy for archives, it is necessary to derive considerations ensuing functional continuity plan of archives. For this, traditional disaster management processes and COOP were compared as shown in <Fig. 1>. The COOP follows the comprehensive approach of the general disaster management process, so most of the processes are similar, but the detailed progress is different. The most similar thing is analyzing risk factors and selecting an object to be managed when conducting risk assessment. The biggest difference is COOP focuses on recovering core functions of institution as soon as possible when the institution is shut down. The considerations in pandemic situation were derived to ensure functional continuity function of archives based on the COOP's PDCA (Plan - Do - Check - Act) cycle.

In this study, four considerations are derived. The first consideration is to establish needs for policies for operation continuity of the archives. Secondly, the plan should be prepared to identify the core functions by analyzing the impact of temporarily suspension called BIA (Business Impact Analysis). Also, it conducts an evaluation on the risk that causes disruption called RA (Risk Assessment). Third, procedures for the recovery plan should be prepared and trained to prevent the functioning of the archives from being interrupted. Finally, problems are figured out and improve through monitoring.

Existing Disaster Management Process
Prevention
Preparedness
Response
Recovery (Resilience)

COOP (Continuity of Operation Plan)	
Plan	- Policy for Operation Continuity
Do	- BIA·RA *BIA: Business Impact Analysis *RA: Risk Assessment
	- Strategy & Procedure of Continuity
Check	- Review
Act	- Improve

To present the actual strategy of the archives in preparation for infectious diseases, the above four considerations were divided into before and after the disaster occurred time. And then practical strategies for disaster management is suggested by arranging the archives' activities against the pandemic in chronological order. The <Fig. 2> sum up the PPRR process, the cycle of COOP and the considerations and new strategies in our study are diagrammed in the order of order of disaster occurrence time for easy viewing First, policy establishment and preparation of BIA and RA should be carried out in the pre-disaster phase. In the post-disaster phase, the activities of archives for recovery and improvement divided into short, mid, and long-terms are presented. More detailed, the activities of domestic and foreign archives against the pandemic analyzed in Chapter 3 are summarized by time flows and proposed as a strategy.



<Fig.2> Disaster response strategies of Archives in conditions of andemic

In the pre-disaster phase, the first thing to do is to set goals to cope with a wide range of disaster such as a pandemic. The plans and guidelines for disaster management should be continually updated as well. Similarly, work guideline should be implemented since remote work for employees of archives are also mandatory. Also, it should be preceded detailed assessment of the system that can respond to risks. And then, it is necessary to identify the core functions of the institution and to investigate the impact when the institution is interrupted.

In the post-disaster phase, it is to resume the role of archives, which had been temporarily disrupted due to COVID-19. Mainly, the activities that archives should take to recover the service level are organized by time flows. First, the short-term stage corresponds to the Days immediately after the outbreak of an infectious disease disaster. In order to respond to the disaster and be initiated recovery activities, the operation and closure of the archives according to crises alert level are taken immediately. At this stage, a notice on the operation of archives should be posted on the web page. In addition, it should be implemented to necessary prevention measures such as prohibition of access and disinfection. The mid-term stage is the stage corresponding to Weeks-Months after the outbreak of infectious diseases. At this stage, online public services such as VR exhibition and free opening of archive records are allowed. Also, employee training and education required by archives are carried out. In addition, archives continue to offer e-learning courses for training to develop skills, knowledge and understanding within the archives sector to citizens and students. The long-term stage is the stage corresponding to months-years after the outbreak of infectious diseases. This stage prepares a disaster report or archives records related to the disaster. The goal is to capture or collect records of individuals and corporations to preserve web records related to COVID-19 so that they can respond to future disasters.

Conclusion

A business functional disruption scenario may occur in the pandemic situation that is gradual disruption. Therefore, it is necessary to establish advanced disaster management process such as COOP that can be more useful than the existing disaster management process in that situation. Disaster management agencies of Korea have been already obligated to establish functional continuity plans. However, the current standards for disaster management of records of the National Archives of Korea are difficult to flexibly respond to disasters such as infectious diseases. It is necessary to establish a COOP to quickly resume the core functions of the institution. With archives facing a pandemic, we examined several cases of what activities domestic and foreign archives have done to ensure the institution's core functions. And then we analyzed them to suggest strategies that are practically possible in the event of an infectious disease disaster.

This study proposed new paradigm for disaster management to strengthen the management system that can respond to infectious diseases disaster and unexperienced disasters. Through this, it is meaningful in that it suggests a direction for the establishment of disaster response scenarios for the National Archives of Korea in the pandemic including infectious diseases disaster.

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