

# Problems and Solutions to Digital Exhibitions Using Cultural Heritage Focus on the 'Gameunsa Temple Reliquary VR' Using the "SamkukYusa"

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## Abstract

This study is a study to consider the problems and solutions of VR exhibitions of public institutions using cultural heritage. To this end, 'The national museum of Korea, a cultural heritage in Korea, was used to find out the problems and sought solutions to the VR exhibition of 'A museum (public museum) of Korea. The problem of the VR exhibition of the 'A' museum of Korea using "SamgukYusa" (the story of three kingdoms) is that the contents of the nuclear power plant, "SamkukYusa" were distorted and embodied in the museum exhibition. As a way to solve this problem, there is a need for a review of the value of the "SamkukYusa", a cultural heritage and interpretation of the original text of "SamkukYusa". In addition, based on these findings, the theme of the theme of the VR exhibition of public institutions using cultural heritage was presented.

**Key Words:** Cultural Heritage, VR Exhibition, Gameunsa Temple, Storytelling, Artifacts.

## I. INTRODUCTION

In this study, the problems and solutions of utilizing cultural heritage in VR exhibitions in public institutions are considered. To achieve this goal, a discussion was held on the 'Gameun sa temple Reliquaries VR' exhibition currently showcased at the National museum of Korea, utilizing the Korean cultural heritage, "SamkukYusa". Gammensa is a temple that was built in 682 AD by King Shinmun of Silla near the beach of Gyeongju City, in honor of his father, King Munmu. This study is related to a paper I presented at the Literacy Society on September 2, 2022 [1]. This study aims to focus on the cultural heritage utilized in VR exhibitions rather than the technical aspects of VR exhibitions.

The National museum of Korea museum of Korea currently has three immersive digital galleries, including the 'Reliquaries from Gameunsa Temple VR' exhibition. In addition to this exhibition, there are five other exhibitions taking place, such as 'Strolling through the Museum Garden' and 'Reliquaries from Gameunsa Temple VR' [2].

In this study, rather than the technical aspects of the VR exhibition, we will mainly look at how the cultural heritage, the original source of the VR exhibition, is embodied in the VR exhibition.

'Reliquaries from Gameunsa Temple VR' exhibition in-

corporates the origin stories of Gameun temple, which was built during the Three Kingdoms period, as depicted in the primary sources of 'Manpasikjeok' and 'King Munho Beobmin' of "SamgukYusa". According to 'Samguk Yusa', King Munmu said that after his death, he would be reborn as a dragon of the East Sea and protect Silla. King Munmu's son, King Sinmun, followed his father's instructions and built Gameunsa Temple [3]. 'Samguk Yusa' was written in Chinese characters. The 'Samguk Yusa' used in this study is the 'Samguk Yusa' of Yonsei University Museum [4] and the 'Samguk Yusa' of Korea University [5] and Korean history database [3]. The exhibition contents are based on Gameunsa temple and the reliquaries discovered at the temple.

Park and Kim [5], Hong [6], Kim [7], Bruno et al. [8] have studied VR exhibitions in museums. However, their research is about technology, so this study examines the relationship between the value of cultural heritage and the impact of VR exhibitions.

Chaegyeong Lee suggested using <Manpasikjeok> to create 'Dragon road', 'Dragon character', 'Dragon tour', 'Stamp rally', and 'Dragon clay doll' [9].

Lee Chang-sik argued that 'the meaning of the geographical space of Gameunsa Temple Site - Daewangam Heritage - Igyeondae, the purpose of making it a sanctuary, and the history of its shape are an excellent narrative archetype

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that not only reveals the truth of the sea god, but also serves as unified cultural content [10]. He Gyeongju City proposed various OSMU cultural projects.

The method of the study is to review the background of the exhibition production, analyze the exhibition and consider problems, review the value and meaning of the cultural heritage used in the exhibition, and interpret the original text, taking the 'Reliquaries from Gameunsa Temple VR' exhibition currently on display at the National Museum of Korea as an example. In order to review the background of the production of the exhibition, the request for proposal presented by the client was reviewed. To analyze the exhibition, the exhibition was viewed and analyzed 14 times from May 2022 to June 2023. In order to review the value and meaning used in the exhibition, the original Chinese text of 'Munho King Beopmin' and 'Manpasikjeok' of the original "SamgukYusa" were translated into Korean and the theme was derived. In addition, the cultural heritage used in the exhibition was classified according to the presence or absence of form, and its characteristics were derived.

## II. BACKGROUND OF THE EXHIBITION PRODUCTION

'Gameun temple Reliquary VR' exhibition is part of the '2019 Public Enjoyment Type Cultural Resource Realistic Content Production Outsourcing Service' project, as announced by the Korea Creative Content Agency on the Nara Market website [11].

The production period of this project is 5 months, and the budget is 3709958 US\$. This project was announced on June 18, 2019, on the Nara Market website. The construction company 00Tech Co., Ltd. was contracted by the Korea Creative Content Agency to carry out the project.

According to the proposal document for this project, the background and necessity of the project are as follows:

### 2.1. Background and Necessity

**Paradigm Shift in Public Experience:** Through immersive and interactive realistic content, there is a need for a paradigm shift in public experiences related to culture, tourism, and education. Initiatives like the British Museum, the Metropolitan Museum of Art, and the Chinese Palace Museum have been promoting virtual reality content services.

**Enhancing the Quality of Cultural Experiences:** There is a focus on improving the quality of cultural experiences across various fields such as history, art, and sports, which hold significant public value. Global trends in the tourism and cultural content industry include virtual reality experiences utilizing global IPs in locations like Shinjuku VR in Japan and theme parks in the United States, China, and Asia. It is necessary to digitize our cultural resources and expand

the opportunities for public engagement through national museums and region-specific, community-oriented infrastructure.

The proposal in the request aims to utilize our cultural heritage as a subject for creating realistic content, thereby laying the foundation for the global Korean Wave and expanding the opportunities for all citizens to experience our cultural heritage. Due to various challenges in terms of time and physical accessibility, many people find it difficult to directly experience cultural heritage. Therefore, creating realistic content based on cultural heritage and offering it as a nationwide service significantly increases the opportunities for all citizens to enjoy cultural heritage.

## III. REVIEW AND PROBLEMS OF 'GAMEUN TEMPLE RELIQUARY VR' EXHIBITION

### 3.1. Review

The 'Reliquaries from Gameunsa Temple VR [12]' exhibition consists of four sections. The contents and implementation methods of each section are as follows:

**Section 1: Following the Spirit of King Munmu** In this section, information about Gameunsa temple is provided through a combination of voice narration and visual displays. The exhibition references the accounts of "SamgukYusa", specifically the stories of King Munmu in 'King Munho Beobmin' and 'Manpasikjeok'.

**Section 2: 'Awakening the Reliquary!'** This section utilizes written text and voice narration to provide information. The exhibition presents King Munmu's testament recorded in "SamgukYusa" and offers explanations about the Sari Jar. Visual representations, including photographs of Gameun temple and the reliquary are displayed. An interactive experience is provided through an illustrated video animation that depicts four musicians and their instruments. Visitors can use a controller to follow the lines displayed on the screen for each instrument, resulting in a 10-second animation of the musician playing the instrument. Visitors can also use the controller to follow the lines on the picture of the Sari Jar, triggering an animation of dancing figures and musicians playing instruments.

**Section 3: 'Awakening the four-guardian statues!'** This section provides information about the reliquary through voice guidance. Full-frontal and enlarged photographs of the Four Four-guardian statue sculptures carved at the lower part of the

West Stone Pagoda at Gameun temple are presented. An audio prompt instructs visitors, 'Let's call the Four-guardian statues by playing the big drum and complete the external assembly of the reliquary.' Visitors interact by striking the depicted image of a drum on the screen with the controller. Subsequently, the lower part of the Reliquary is revealed, and visitors can use the controller to move the four sides of the Sari Jar to view the sculptures of the Four-guardian statues. Finally, the external assembly of the reliquary Sari Jar is completed.

Section 4: 'King Munmu's visiting to Gameun temple!' In this section, using references from "Samguk-Yusa" including 'King Munho Beobmin' and 'Manpasikjeok', it is explained that King Munmu rebirthed a East sea's dragon and visited Gameun temple. Visitors are instructed through voice narration to aim the left controller at the moon displayed on the screen and use the right controller to pull the bowstring and shoot an arrow towards the moon. If the arrow hits the moon, a dragon appears. The dragon is depicted in a 3D animation, flying from the sea to the sky and beyond the roof of Gameun temple.

The 'Gameun temple Reliquary VR' exhibition can be seen as a realization of the proposal outlined in the project's request for proposal (RFP), based on relevant mythological stories and incorporating storytelling elements.

### 3.2. Problems

Translation error: In the first section of the exhibition, it is described that King Munmu, who was reincarnated as a dragon, and General Yushin Kim, who became a heavenly god, presented 'Manpasikjeok' to King Sinmun. However, in the original 'King Muno Beopmin' and 'Manpasikjeok' it is described that King Munmu who transformed into a dragon and Yushin Kim who transformed into a heavenly god gave King Sinmun a black jade belt and a messenger that would be the material for Manpasikjeok [13-15].

Also, in the original text, it is written that a small mountain appears near Gameun temple, and the bamboo on the small mountain becomes two during the day and one at night. King Munmu and Yushin Kim convey this philosophy to King Munmu through a messenger. However, in this part of the VR exhibition, a voice guide is provided saying, 'Govern the country with the principle of sound.' The message from King Munmu to King Sinmun and the story of delivering bamboo show Silla's ruling philosophy, so if the translation of this part is wrong, the theme of the original text cannot be conveyed correctly. Discrepancy in the

fourth section: The scene of the dragon ascending from the sea and entering the grounds of Gammen Temple differs between the original text and the VR exhibition. In the "SamgukYusa" and "Manpasikjeok," it is described that King Munmu, who has been reborn as a dragon of the Eastern Sea, follows the waterway from the tomb of King Munmu to the floor of Gammen Temple to listen to the Buddha's teachings. However, in the VR exhibition, the dragon emerges from the sea and flies directly to Gammen Temple. Therefore, this part deviates from the original text in its implementation.

Inaccuracy of terminology: The term 'reliquary' in the exhibition is not an accurate name for the relics owned by Museum A. The exact names of the relics in question are 'The Gilt-Bronze reliquary of the west pagoda of the Gameunsa temple Site' (National Treasure No. 4264) and the 'Enclosure Sari base piece of the west pagoda of the Gameunsa temple Site' (Collection of the National Museum of Korea No. 4849). If the name of the artifact used is wrong, the visitor will get wrong information, so even if they want to obtain information about the artifact after experiencing the VR exhibition, they will not be able to search for the artifact on the website of The national Museum of Korea in the exhibition room.

Insufficient realization of the theme of the original story: In the 'Gameunsa temple Reliquaries VR' exhibition, rather than embodying the theme of the original story, the structure and theme of the reliquary and the theme of King Munmu's will to unify the three kingdoms were tried to be realized. However, rather than conveying and implementing these themes, experience-oriented exhibitions were produced, such as completing a reliquary using a controller, playing musical instruments, and shooting the moon with arrows.

The causes of these problems and their solutions will be discussed in the next chapter.

## IV. PROPOSED SOLUTIONS

In Chapter III, I looked at the problems of the 'Gameunsa temple Reliquaries VR' exhibition. These problems are judged to be caused by the lack of review of the value and meaning of the cultural heritage used, meticulous and correct interpretation of the original source, and the process of collecting and analyzing various information. The solution to this is as follows.

### 4.1. Consideration of the Value and Meaning of Cultural Heritage

As examined earlier, the purpose of producing the 'Gameunsa temple Reliquaries VR' exhibition is to utilize cultural heritage so that people can have an opportunity to

experience it cultural heritage. To this end, it can be said that considering the value and meaning of cultural heritage, which is an object used in VR exhibitions, is the first thing to do in digital exhibitions using cultural heritage.

It is necessary to consider the meaning and realization of the story. The cultural heritages used in the exhibition include "SamkukYusa", 'Gameunsa temple', 'East and West Stone Pagodas', and 'Gameunsa temple Reliquaries'. Their value and influence as cultural heritage can be visually expressed as follows:

In the Fig. 1, the cultural heritage used in the 'Gameun temple Reliquary VR' exhibition can be divided into intangible cultural heritage, tangible cultural heritage, and documentary heritage.

'The story about King Munmu's reincarnation as a dragon of the East Sea' and 'The Story about Manpasikjeok' are intangible cultural heritage. This story both unrealistic and realistic. According to this story, King Sinmun, the son of King Munmu, built the tomb of his father, King Munmu, in the East Sea and built Gameunsa temple for his father who was reincarnated as a dragon. The water of the East Sea is connected to Gameunsa temple. King Sinmun drilled a hole in the floor of the Golden Hall of Gameunsa temple so that his father, reincarnated as a dragon, he could come and he listen to the Buddhist sermon.

The story that King Munmu was reincarnated as a dragon in the East Sea and his son gave King Sinmun a Manpasikjeok is an unrealistic story. However, the story that King Shinmun built Gameunsa temple for his father is a reality, and now only the ruins of Gameunsa temple, the towers of Gameunsa temple, and the relics of Gameunsa temple exist as tangible cultural heritage.

And "SamkukYusa" is a tangible cultural heritage and that is a documentary cultural heritage. 'The story of King Munmu' reincarnated as a dragon of the East Sea, the story of building Gameunsa temple and making a hole for King Munmu who became a dragon, and the story about Manpasikjeok are included in the 'Gi-i' (marvelous-strange) section of the book "SamkukYusa". 'Gi-i' is a bizarre, strange story, an unreal story. However, this unrealistic story made possible the historical fact of the founding of Gameunsa temple beyond the unrealistic. Therefore,

"SamkukYusa" is a very important book, and in order to produce a VR exhibition using this cultural heritage, it is necessary to carefully consider the value and meaning of the cultural heritage to be utilized, and the topics and information to be conveyed through it.

The cultural heritages used in the 'Gameunsa temple Reliquaries VR' exhibition contain the philosophy of 'protecting the country' and ruling. King Munmu, the real king of Silla, fought a lifetime war to unify the ancient kingdoms of Korea, Goguryeo, Baekje and Silla and finally achieved the unification of the three kingdoms. According to "SamkukYusa" King Munmu was reincarnated as a dragon of the East Sea to protect Silla because Japan was threatening unified Silla. King Munmu, who was reincarnated as a dragon, taught King Shinmun the principles of governing the country through a lion. That was the reason why the sound was made. And King Sinmun made a flute called Manpasikjeok with the bamboo given by the messenger and it is said that playing this flute will make all difficulties disappear. This story demonstrates the Silla people's belief that art, rather than war, could govern the country and surmount difficulties during the unification of the three kingdoms.

#### 4.2. Institutionalization of Participation by Related Majors

All of the above stories are from "SamkukYusa". Therefore, in the production of the 'Gameun temple Reliquary VR' exhibition, there is no distortion in the implementation of the VR exhibition only when 'Munho King Beopmin' and 'Manpasikjeok' of the original "SamgukYusa" are accurately interpreted. In addition, there was an error in the name of the artifact presented in the 'Gameun temple Reliquary VR' exhibition, and this also requires the participation of related majors as a mandatory requirement. For this, the VR exhibition team must include related experts. In addition, translation errors and misspellings in the names of relics must be prevented through advisory meetings. These matters must be specified in the request for proposal of the owner and presented as contract conditions that the manufacturer must fulfill.

#### 4.3. Pre-Research Commissioning and Implementation

The most fundamental task in addressing the various problems associated with the digital exhibition production of cultural heritage by an organization is to conduct preliminary research on utilizing cultural heritage for digital exhibitions. In the case of the 'Gameunsa temple Reliquaries VR' exhibition the production period was five months. During this timeframe, it would be challenging for the production company to thoroughly examine the value and meaning of the cultural heritage to be utilized in the exhibition and to interpret the original narratives accurately. Therefore, the

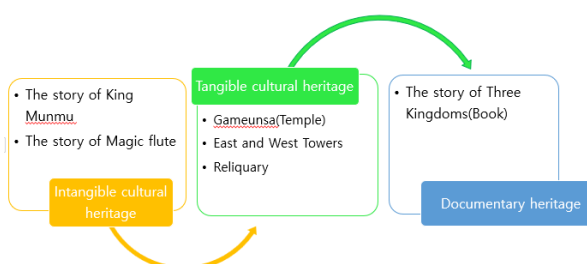


Fig. 1. Values and influence relationships between cultural heritage.

client commissioning the exhibition production should contemplate the value and significance of cultural heritage prior to engaging the production company. They should also reflect on the theme, narrative, and implementation methods of the digital exhibition, ensuring that these considerations are incorporated into the exhibition production.

## V. CONCLUSION

In digital exhibition production using cultural heritage, if exhibition design based on detailed and in-depth research on the cultural heritage is not premised, even if excellent technology and a lot of capital are invested in the digital exhibition, the possibility of obtaining a successful result is low.

It is hoped that this study will serve as a guideline for obtaining results that more accurately implement the meaning and information of the original cultural heritage in the process of planning and implementing digital exhibitions using cultural heritage in the future.

In future research, we plan to study the methodology of collecting, analyzing, and reflecting data to be used in the 'Gameunsa temple Reliquary VR' exhibition. In addition, we will study the character 'Cheoyong' from "Samguk Yusa" and discover characters that can be used in cultural content. And we will examine Silla's perception and response to infectious diseases as revealed in "Samguk Yusa".

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