

Development and Implementation of Media Exhibition on Underwater Excavation Sites

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ABSTRACT

This paper's theme fits the underwater excavation sites into media exhibition and implement of such exhibition. Underwater excavation in Korea has a long history of over 40 years with the start of Sinan shipwreck excavation in 1976 but it is still recognized as an unfamiliar and strange field. The National Maritime Museum has been in operation to improve the public understanding but it has limitation to make the public understand underwater excavation as the exhibition focuses on recovered maritime cultural heritage. Accordingly, exhibition contents were developed for two years from 2021. Basic design started in 2022 and was placed in exhibition room 3 of the National Maritime Museum. The exhibition was designed as immersive. Content introduces digital technology in line with the latest exhibition trend. We included a Sinan shipwreck model, with a similar ratio size to that of the actual site. Unique experience elements were also added. The process started with the classification of underwater excavation process. This exhibition was divided into three spaces: (1) archaeology program ship, which is the starting point of underwater excavation and the last space above water; (2) transfer space to enter the underwater excavation site from the surface; and (3) the space that embodies the underwater excavation site. In order to implement the activities conducted in each space, video content recorded on the underwater excavation site was analyzed and reviewed by those involved in underwater excavation in order to realize characters close to reality. Thanks to the development and implementation of media exhibition on underwater excavation site, audiences are able to feel and experience underwater excavation, which is recognized as strange and unfamiliar field in person.

Keywords: underwater excavation, media exhibition

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INTRODUCTION

Underwater excavation in Korea has a 40-year history. It began with the excavation of Sinan shipwreck in 1976 but only the National Research Institute of Maritime Cultural Heritage (NRIMCH) can conduct underwater excavation in Korea and as the site is located underwater unlike land one, accessibility to the site by the public is significantly low. Therefore, this field is still recognized as strange and unfamiliar except for experts.

The NRIMCH operates two exhibition halls in Mokpo in Jeonnam and Taejeon in Chungnam to promote maritime cultural heritage and most of the exhibitions focus on excavated artifacts. Photos and videos of the sites are being displayed and played in the exhibition space. We recognize limitations in understanding the process of underwater excavations and their artifacts, which have their own characteristics and features. It is hard for non-experts to understand the background.

Therefore, it was planned to reshape the exhibition room 3 into the exhibition titled 'Underwater Excavation in Korea' in Mokpo Maritime Museum, to promote information on underwater excavation in a more systematic and active way. Preparation was done for two years from 2021 to 2022. Currently the exhibition hall is in operation.

In order to turn the underwater excavation into an exhibition, work was done in three broad steps. First, various information on underwater excavation such as theory of underwater excavation and appearance of the site was collected and reviewed. Second, the way to deliver the information most effectively in the exhibition room was reviewed. Third, exhibition items were selected and video and experience content were made to ensure professional information is received in an easy and interesting manner.

This paper contributes as the theme ‘development of underwater excavation process into exhibition and implementation’ session 20 ‘effective delivery of underwater cultural heritage (UCH).’

PLANNING UNDERWATER EXCAVATION EXHIBITION

Selection of exhibition content

First, various information on underwater excavation such as theory of underwater excavation and appearance of the site was collected and information to be delivered in the exhibition was reviewed. Direction of exhibition was set, mind map to plan content was prepared and raw data on the theme was analyzed to select the exhibition content.

Establishing the direction of exhibition

The purpose of this exhibition is easy access to the general public of underwater excavation, which is conducted only by the NRIMCH. Therefore, the direction was set to compose an exhibition to make sure that audiences enjoy and understand various information on underwater excavation.

Mind map

To select exhibition content, it was necessary to organize overall information on the overall process of underwater excavation. To approach it systematically, a mind map was created with the definition of underwater archaeology, classification, history of development, process, equipment of underwater excavation, UCH and overseas cases centering around underwater archaeology.

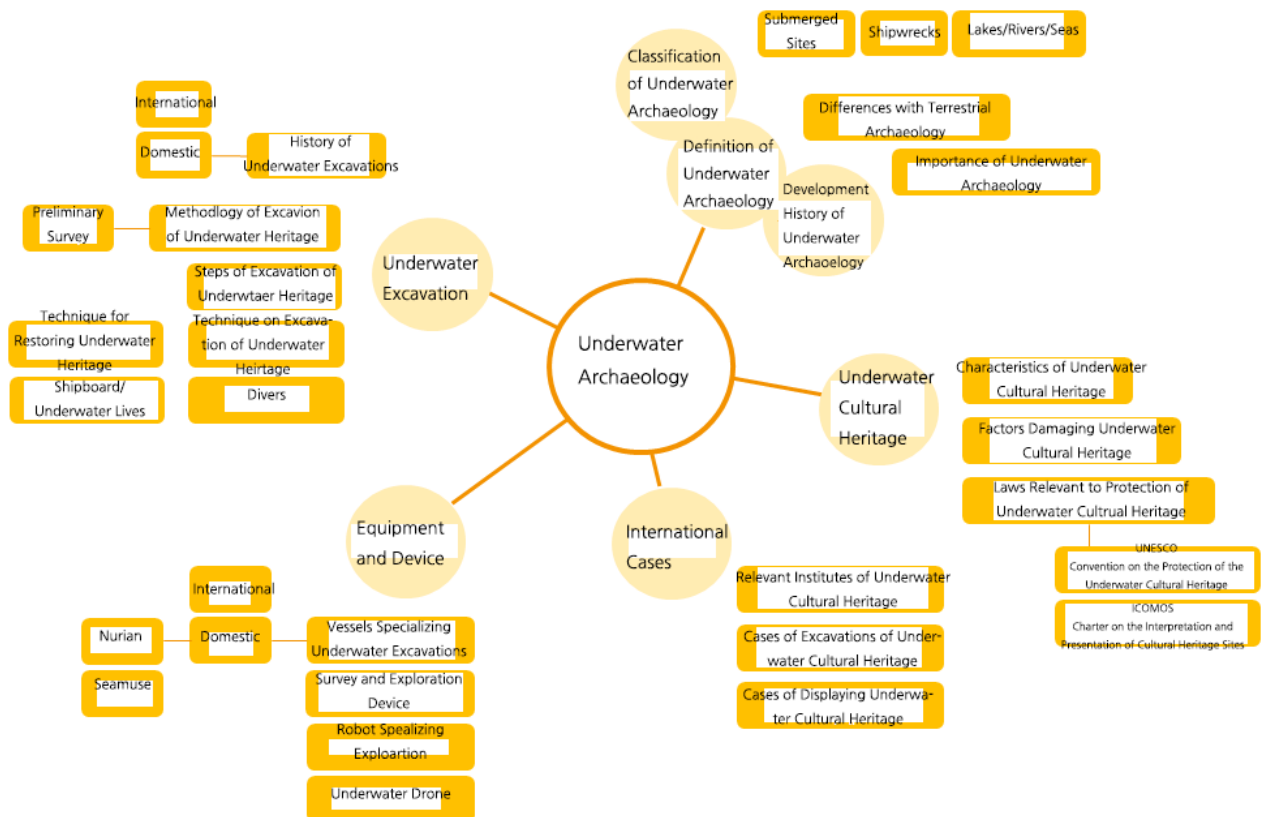


Figure 1. Mind map of underwater archaeology

Collection of raw data

Collection and analysis of raw data were conducted based on the mind map. The data on the definition and characteristics of underwater archaeology, applicable laws, factors that hamper UCH, other basic matters of underwater archaeology, global history of underwater excavation, underwater excavation process and cases of similar organizations (overseas) was collected and organized.

Selection of exhibition content

As it is not possible to include all information on underwater excavation, the information that is representative and essential and audience interest was selected as exhibition content. Along with providing basic information on underwater excavation, equipment used in actual sites such as wet suits and exploration equipment were introduced, and contents for experiencing underwater excavation sites were selected.

1. Basic information

In order to make the public understand underwater excavation, it is necessary to provide basic information. The start and history of underwater excavation, current state of underwater excavation in Korea and underwater excavation process are the most essential information. The minimum information is organized in an easy way.

2. Equipment used on site

Introduction on suit and equipment used on site was necessary. It was decided to give the realistic feeling of the site by displaying the outfit and excavation equipment used on site as they are not easy to see in daily lives. Excavation devices are expensive and it is difficult to purchase, so equipment not used anymore was selected for exhibition. It was decided to display Global Positioning System (GPS) that confirms the location of underwater excavation, Side Scan Sonar, which is a representative equipment for underwater exploration, and Sub-Bottom Profiler that can identify underwater strata and anomalies and Underwater Photography Equipment to make record of excavation site. It was also decided to give more realistic feeling by reproducing the actual site such as excavated artifacts and excavation grid.

3. Reproduction of the underwater excavation site

The exhibition begins with the control room of an archaeology program ship. In professional practice this is often limited to a number of people within limited period for various reasons such as safety and security. Underwater sites are generally inaccessible to the general public so it was determined to compose the exhibition to make sure that people can experience underwater excavation from the control room.

Composition of underwater excavation exhibition

Exhibition was organized to show the selected exhibition content most effectively. It attempted to improve the immersion of indirect experience by showing the information such as history at the beginning, organizing items in the order of time and space allowed audience to understand underwater excavation easily. The exhibition is composed of three parts. The first part deals with the start and development of underwater excavation in Korea. The second part handles underwater exploration and excavation and the third part deals with underwater shipwreck excavation site.

Start and development of underwater excavation in Korea

In 'Part 1. Start and development of underwater excavation in Korea' is composed of information starting with the pledge to protect UCH made before starting underwater excavation, history of underwater excavation, current state of underwater excavation in Korea, and experience of control room in archaeology program ship. This shows the history and present of the underwater excavation and indirect experience of the archaeology program ship.

Underwater exploration and excavation

In 'Part 2. Underwater exploration and excavation', exhibition is composed of the introduction of underwater exploration devices, introduction and experience of wet suit and process of underwater excavation. People have a chance to see and experience the outfit and exploration equipment used in the excavation.

Underwater shipwreck excavation site

In 'Part 3. Underwater shipwreck excavation site', it is attempted to reproduce the excavation site as much as possible in the exhibition space to provide realistic experience of visiting the excavation site to the audience. The excavation site was reproduced close to the actual size, and the exhibition space was filled with realistic images and the excavation process, so that the underwater scene could be vividly experienced.

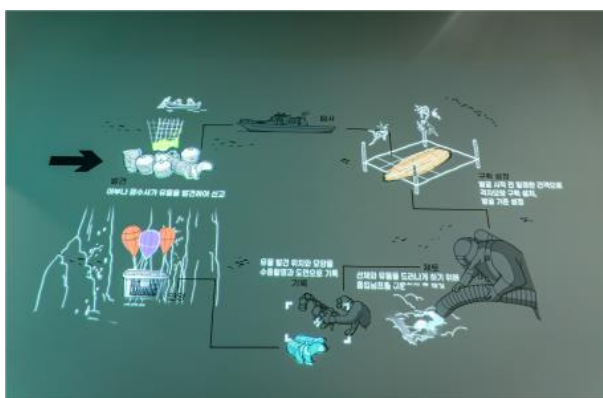
DEVELOPMENT AND IMPLEMENTATION OF MEDIA EXHIBITION

Review on media exhibition method and planning

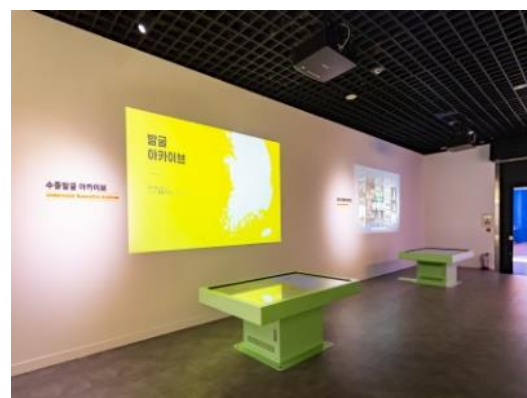
Recently, exhibition methods have been diversified to give more realistic experience along with the advancement of media. Unlike existing exhibition based on one-way communication, the trend is to utilize interactive exhibition where audience participate in the exhibition directly. This exhibition is intended to introduce various media exhibition techniques based on the site where underwater excavation is conducted to make the audience understand underwater excavation in an easy and fun way. The media exhibition techniques introduced to this exhibition are as follows.

Interactive exhibition with engagement of audience

Instead of making the audience accept the information on underwater excavation that could be hard or boring, the exhibition was designed to make the audiences select and accept the information they want. For the history of underwater excavation and underwater excavation process, media wall was utilized and digital archive utilizing media table provide detailed information on the status of underwater excavation.



Media wall (excavation process)



Digital archive (excavation archive)

Figure 2. Interactive exhibitions

Immersive video to give more realistic feeling on the site

The four sides of the exhibition space were filled with immersive video, which is used frequently in recent exhibitions to give more vivid and realistic feeling on the excavation site. Three kinds of videos were developed: place above the sea, entering into the sea, and activities in underwater excavation site. In addition, it was designed to be more immersive by installing the model shipwreck with similar ratio

size of the Sinan site.

Development and implementation of immersive video content

A series of underwater excavation processes were produced as immersive images. In order to realize underwater excavation as a video, video content recorded on the underwater excavation site were analyzed and reviewed by experts to implement the characters closest to the actual site. However, it was hard to produce image on the west sea of Korea as it was hard to secure visibility due to water's high turbidity, so video was produced based on the excavation environment of Shinchang-ri, Jeju.

Analysis on the work of underwater excavation site

The basic background and characters of the three immersive videos were made to have unity. The basic characters of divers and sailors were set based on the clothes and equipment worn in the field, and all elements inserted into the video, such as probes, exploration equipment, marine plants and creatures, were produced based on facts.

Control room in archaeology program ship

The video on the control room of archaeology program ship was created from imagery through the window of the control room and landscape of the sea. In addition, monitor images of exploration equipment such as side scan sonar and scanning sonar are on top of the basic image, and images communicating with the underwater site can be played with by visitors, so that they can experience the role of the control room. Images of the actual excavation site are also displayed with buttons. It is configured so that you can check it by pressing. The video on communication with underwater site was made with four themes of diving, discovery of artifacts, problem and ascending, which may occur on the underwater excavation site.

Transfer space into the sea

A video of diving into the sea was prepared to heighten the expectations of the visitors, and to smooth the connection between the control room on the sea and the underwater excavation site. The video was designed to show the start of diving into the sea from the above the sea and connect the scene to the excavation site.

Underwater excavation site

The underwater excavation site was prepared as the most important space for the exhibition. The audience can feel they are in the sea. Divers show each underwater excavation process introduced in the previous exhibition space and exploration equipment introduced with actual equipment used is also seen in the video. By installing a model that reproduces the excavation site people can have more realistic experience and have experience in artifacts excavation indirectly.



Control room for underwater excavation

Underwater excavation site

Figure 3. Immersive video contents of underwater excavation site

CONCLUSIONS

This exhibition was planned to give indirect experience in underwater excavation to improve the understanding on the maritime cultural heritage of the audience. Various data on underwater excavation was collected and the data was used to develop media exhibition in an easy to understand and fun way to meet the needs of the audience. Making underwater excavation video has been tried continuously but with the development of media production technology, audiences have higher expectation. This exhibition tries to deliver the circumstances of excavation site as objectively as possible. The exhibition was designed to give a realistic feeling about the underwater excavation site. It is also designed to give more realistic and lively feeling by including a correct ratio shipwreck model together with excavation experience.

I hope this exhibition serves as an opportunity for the audience who once use to feel underwater excavation difficult and unfamiliar, to now understand the subject in an easy and fun way.

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