

Utility of Digital Technologies for Sustainability of ICH in Korea

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Abstract

The importance of preserving intangible cultural heritage (henceforth ICH) for sustainable development has been widely acknowledged by international society. Various cooperation has taken place to prevent deterioration and destruction due to its inherent characteristic of “intangibility”. Public engagement, however, has largely been excluded from the system in spite of its significance in safeguarding ICH. In this respect, this paper discusses about and emphasises the necessity of public engagement in safeguarding ICH. To this end, it suggests the use of digital technologies to create museum contents to encourage public involvement with and learning of ICH. Focusing on ICH in Korea, digital exhibitions on *Jultagi* and *Daemokjang* utilising virtual reality technology are proposed. The ultimate aim of this article is to contribute to the sustainability of the world intangible cultural heritage for the humanity through digital exhibitions.

Keywords: intangible cultural heritage (ICH), digital technology, digital museum, South Korea,

Introduction

In recent years, the international society has acknowledged the importance of safeguarding intangible cultural heritage (henceforth ICH). Unfortunately, however, ICH is at risk of deterioration and destruction due to its inherent characteristic of ‘intangibility’. In order to cope with the threats and promote its sustainability, states and international institutions have cooperated to safeguard ICH worldwide. These activities demonstrate the issue of governance: the relationship between ICH (and its holder) and (trans)national government is highlighted, while public engagement is marginalised in spite of its significance in safeguarding ICH. Equally important is the roles of museums and digital technologies, which has also been neglected from the discourse on ICH.

Since the late 1990s, many have suggested the potential of utilising digital technologies and museum contents to facilitate safeguarding tangible and intangible cultural heritage (see Karp (2004) [1], King et al. (2016) [2], and ICOM (2004) [3]). Others have dealt with diverse issues regarding ICH protection in particular (see Kono et al. (2009) [4], Stefano et al. (2012) [5], and Alivizatou (2012) [6]). In the meantime, many articles discussed about digital exhibitions and museums. In general, Park (2014) defined the concept and role of digital museums [7], while Lee (2016) emphasised the importance of digital technologies to enhance the social functions of museums [8]. Recent studies suggested application of the newest digital technologies such as Virtual Reality on museum contents (see Bruno et al. (2010) [9], Mortara et al. (2013) [10], and Lee (2018) [11]).

Although the researches above successfully pointed out the importance of ICH and digital exhibitions, not many discussed about developing digital exhibitions on ICH. In this sense, this paper explores the possibility of digital technologies being applied to museum contents on ICH in order to promote its sustainability. It begins with exploring the idea of ICH and defining the role of museums in terms of public engagement. The convergence between the two ideas is presented in the next section where possible digital exhibitions on ICH are suggested; the scope of study is confined to the case of Korean ICH and the use of Virtual Reality (henceforth VR) technology. Specific examples of *Jultagi* and *Daemokjang* are provided. The ultimate aim of this article is to contribute to the sustainability of the world intangible cultural heritage for humanity through digital exhibitions.

Theoretical Background

As seen from the literature review, the idea of developing museum contents on ICH utilising digital technologies has yet been widely discussed. Rather, researches on ICH, museum studies and practices, and digital technologies have conducted separately. This section is devoted to explore the concepts and issues concerning the subjects and to lead to the convergence of ICH and digital exhibitions in the next chapter.

Intangible Cultural Heritage (ICH)

The Republic of Korea is one of the first countries that has acknowledged the importance of cultural heritage. Since 1962, the government has taken care of national cultural heritage according to the Cultural Heritage Protection Act which defined ICH as: ‘traditional performing arts and arts; traditional skills concerning crafts, art, etc.; traditional knowledge concerning Korean medicine, agriculture, fishery, etc.; oral traditions and expressions; traditional ways of life concerning food, cloth, shelter, etc.; social rituals such as folk religion; traditional games, festivals, and practical and martial arts’ [12]. Act on the Safeguarding and Promotion of Intangible Cultural Heritage aims for creative inheritance of traditional culture through preservation and promotion of ICH to promote cultural improvement [13]. It states that the Administrator of Cultural Heritage Administration (CHA) is in charge of the designation of national ICH and its holder(s), and specifies that the Administration may provide financial aid and privileges to the holder(s) for artistic, technical, and scientific research; discovery of successors; successor training and activities for transmitting ICH; and documentation of the heritage [14]. Thanks to this well-organised system, Korea has succeeded in safeguarding heritage that would have otherwise disappeared [15]. As of November 2018, 140 heritages are under governmental care and support as national ICH [16].

According to the statutes, it is implied that the systems of

safeguarding ICH underline the close relationship between the official organisation and the specific ICH or its holders and successors. This is because the critical aspect of safeguarding ICH is the transmission and communication over generations [17]. The close ties between the two parties exclude general public from the system naturally and inevitably; however, the public exclusion is problematic as public understanding is necessary in the process of preserving and safeguarding ICH. Its significance can be analysed in two dimensions: on one hand, the government needs public support to execute its national budget for safeguarding the ICH and promoting its sustainability; on the other hand, ICH enables the general public “to choose a full, satisfying, valuable, and valued way of living together” with a sense of identity and sense of belonging that it creates [18]. In this sense, public understanding and engagement are required for ICH.

Museums and Digital Exhibitions

According to ICOM, a museum “acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment” [19]. In the early stage of the development of museum studies and practice, the institution was mainly regarded as a space for storage, and later, for exhibition; in recent years, museums cover public education and engagement [20]. Being a place where people can learn about history, culture, and other subjects through exhibitions, museums should provide individuals with a wealth of information in diverse fields. Based on the people-focused and audience-centred perspective, the information here should be offered in a way that interests users and audiences, not in a way that satisfies the organisation [21].

Digital technologies can be utilised to maximise educational values of museum exhibitions. Recent emphasis on edutainment indicates that while the end of an exhibition should be educative and informative, the process of learning should be fun and dramatic [22]. Digital technologies are good means to reinforce the edutainment aspects of museum practice in several ways: the application of digital technologies simply draws public attention; it enriches visitors’ museum experience through visual impacts and abundant information provided by digital media; it allows hands-on experience and enhances interactivity in museums, thus reinforcing educational effects; and it appeals to the younger generation in particular who are familiar with and willing to utilise digital technologies. Overall, digital technologies enable audiences not only to appreciate the objects but also to actually feel and experience them through communication and interaction within a comfortable and enjoyable setting that increases motivation for learning and its durability [23].

So far, digital media used in museums have been restricted to relatively simple and one-way technologies such as digital kiosks, mobile devices, and virtual museums. In the era of fourth industrial revolution, however, state-of-the-art technologies have unlimited potential of improving museum exhibitions. These technologies include: the Virtual Reality (VR), Augmented Reality, three-dimensional printing system, and media façade. Among them, the VR has led to the innovation in museum environment as it dramatically increases audience’s concentration on and immersion into the exhibition,

resulting in their active participation and considerable educational effect [24]. Wearing a head-mounted device (henceforth HMD), the user is completely immersed into a whole new world, apart from the reality, where s/he can interact with the environment as h/she wishes [25]. The VR not just realises the very same environment as the reality; it goes further to create a virtual reality where people can experience what they cannot experience in the real life. In this sense, if the VR technology is applied to digital exhibitions on ICH, general public will be able to experience and interact with ICH in the digital world in an easier yet more interesting way.

Proposal on ICH Exhibition Utilising VR Technologies

Jultagi

Jultagi was designated as the Important Intangible Cultural Heritage in 1976 by the Korean government and enlisted in the UNESCO Intangible Cultural Heritage in 2011. It is a kind of traditional performing art of tightrope walking that an aerialist performs, doing acrobatics, singing, and dancing. Besides its long history, what differentiates *Jultagi* from other tightrope tricks is that the performer not only does acrobatic tricks but also interactively communicates with and entertains the audience. As it is often performed at conventional markets and in the regional festivals, Koreans are easily exposed to the traditional performance, which allows them to strengthen their identity as Korean. Also, the active communication not only makes the event more entertaining but also enables the viewers to have indirect experience of flying in the sky and to feel the sense of freedom. Today, the Committee for the Preservation of Tight-rope Walking and Kim Dae-Gyun, the only official holder, are responsible for the preservation and transmission through apprenticeship and public education [26].

To realise *Jultagi* as a VR exhibition, a hand controller and a block where the user stands on are necessary. The hand controller, in the virtual reality, will appear to be a hand holding a folding fan that an aerialist uses in a performance. The block may be made of either plastic or wood, but should be high enough to build stairs with several steps on both ends and long enough so that the user can come up the stairs from one end, walk along the block, and come down the stairs to the other end. Also, it should be covered with a sponge-like material so that the user would feel like the ground, or the tightrope in the virtual reality, is shaking and moving, feeling the elasticity of the rope and slight dizziness of walking on it. The user’s safety should be guaranteed by setting cushions besides the block and providing the user with safety pads.

The programme begins as the user puts on the HMD. Besides the user is a tightrope which, in reality, is the block that she can climb up the stairs. On the tightrope—block— she looks down at an assistant clown, musicians, and the crowd on the ground. As she moves on the tightrope, the musicians begin to play traditional Korean music to which she can listen through the speakers on the HMD. She can try acrobatic movements, including jumping and walking back and forth, without the worries of falling down from the rope. It is critical to adapt the user’s point of view while actively moving so that she can identify her location within the virtual reality and feel that she is actually walking and flying in the air and feels the thrill and excitement. During the experience, characters in the virtual

reality may speak to the user either by voice through the audio system or by text on the screen; the user can communicate with them by choosing options on the screen. Depending on her choice, they may respond to or intervene in the conversation through laughing, joking, and commenting. As the user reaches the other end of the tightrope, she slowly comes down the stairs and takes the device off on the ground.

Overall, this experience is expected to provide users with immersive and exciting experience on the tightrope. While experiencing the contents, the user realises that *Jultagi* is more than just acrobatic movements and tricks; it is a kind of comprehensive performing arts which consists not only of aerial stunts but also of music, jokes, and two-way communications with the audience. The user may understand one feature of traditional Korean performing art, including *Jultagi*, is the active communication and interaction between the performer and the audience that blur the distinction between the two, allowing the audience to affect and change the course of the performance. Through this experience, users are attracted to learn more about the heritage itself, and move on to further exploration in the world of *Jultagi* and possibly of other intangible heritages.

Daemokjang, traditional wooden architecture

Daemokjang was designated as Important Intangible Cultural Heritage in 1982 and enlisted at the UNESCO World Heritage in 2010. *Daemokjang* refers to two concepts: traditional wooden buildings, and the master craftsman who takes care of the maintenance, restoration and reconstruction of these buildings. The artisan is responsible not only for planning, designing, and constructing the buildings but also for managing and supervising the assistant carpenters. *Daemokjang* as ICH refers to the latter concept of traditional wooden architecture. To construct *Daemokjang* requires artistic creativity with scientific and technological abilities to recreate the tradition. The skills and knowledge on *Daemokjang* is universally acknowledged for its traditional beauty and practicality as seen from Changdeokgung Palace and Bulguksa Temple that are on UNESCO World Heritage Site. Regarding transmission, three holders and two successors are officially acknowledged [27].

For the exhibition, two hand controllers, one for each hand, are required which appear programme. In the virtual world, the user plays a role of an assistant carpenter following the lead of the master craftsman. The user can decide which part of which building to work on among famous Korean wooden buildings. Upon choosing which activity to try, the artisan gives a demonstration on how to process the wooden pieces. The user follows the artisan's guidelines to make building materials of wood using hand controllers; he can choose an option from cutting, trimming, carving, and chiselling and move the controllers to process the wooden piece in the virtual reality. The user can work along with other carpenters and can listen to the sound effect of processing the wood, which adds realism to the experience and enhances presence of the user. When all the materials are prepared, the artisan shows how to assemble these pieces to complete the chosen structure. In this phase, texts appear on the screen to explain about principle of using wooden joint to put bigger pieces together to create the 'joint that lasts for thousands of years'.

This experience is unique in that users can build their own

wooden architecture in the middle of a city without having to go to the woods to get materials. Although it all happens in the virtual reality, the users may actually feel like they have become traditional architects who have considerable knowledge and skills to deal with wood in traditional ways. While processing the wooden materials and assembling them into an architecture, the users learn from ancestor's wisdom—they understand the principles of wooden construction and learn about the simple yet wise use of wooden pieces. Furthermore, the experience enables the user to display their artistic abilities. Although they can only choose from the provided options, the users are able to mix and match the options, leading to recreation of tradition. This allows users to explore the potential and future of the heritage.

Conclusion

To sum up, there has been worldwide cooperation to save ICH of humanity, which has overlooked the importance of public involvement. The fact is, however, public engagement is vital in safeguarding ICH in terms of execution of national budget and quality of life of individuals. In this respect, this paper suggested utilisation of digital exhibitions to encourage public education and engagement in the attempt to safeguard ICH. As examples, it explained possible exhibitions on *Jultagi* and *Daemokjang*, utilising VR technology.

It is true that digital exhibitions do have limits. One of its drawbacks is that it is not able to deliver the aura and originality that the actual heritage has in that the programme only exists in the virtual world. Similarly, the true value of ICH may be degraded if the entertaining aspect is emphasised excessively. Furthermore, it has to deal with the issue of cost due to the high-priced VR facilities and programme development. Unless extensive study is conducted and carefully designed, VR exhibitions may degenerate into 'expensive furniture' [28].

Despite its constraints, digital exhibitions have infinite potential to contribute to safeguarding ICH. First, the audience can learn about cultural heritages while enjoying but not noticing they are actually 'learning' it, and they may naturally realise that ICH is worth protecting. This experience may result in the audience getting interested in the original heritage itself, which may encourage them to explore more about it. Moreover, their perception of museums may change and they may begin to think that museums are fun places to visit where they can experience interesting programmes and feel the joy of learning.

There are, still, a lot more to think about to improve digital exhibitions on ICH. To begin with, collaboration with heritage holders is suggested in order to deliver the authenticity of the actual heritage; the holders may give a demonstration to the public on a regular basis or lead education and experience programmes to teach the participants how to create or perform the heritage. The contents of exhibitions may be affiliated with school education so that it encourages active participation of students. The technologies used in digital exhibitions may be diversified to enhance the educational effects. Augmented Reality and media façade are useful technologies to increase the sense of immersion while Big Data may be used to customise the programme for individual visitors. More 'traditional' technologies such as the social networking system (SNS) may be used to promote the exhibitions to a larger public.

More interests and efforts should be put in order to improve digital exhibitions and to encourage public involvement so that it can contribute to the safeguarding of ICH for humanity.

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