

Digital Content Development and the Korean Wave of Knowledge

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Abstract

This paper aims to focus on the phenomenon of the digital and knowledge information society, starting with a contemplation of the role of human beings and society in the face of the fourth industrial revolution and promote the Korean Wave of knowledge by spreading throughout the world information about Korean history and culture as a whole and inducing the reproduction of knowledge through active use of information and communication technology. At the same time, the information content of Korea is insufficient compared to Korean popular culture contents that have caused the interest and reaction of the whole world. Therefore, we tried to create Korean knowledge content by utilizing content curation, infographic and digital story telling techniques.

Keywords: *Korean Wave of knowledge (Hallyu), digital content, infographics (information design), storytelling, curation, Yi Sun-sin*

1. Introduction

The fourth industrial revolution, which is based on the third industrial revolution, the digital revolution, is characterized by the fusion of technologies. This fusion is expected to yield new creation, and artificial intelligence, robot technology, biotechnology, and so on is emerging as the main technologies. In particular, artificial intelligence drew global attention when AlphaGO, using deep learning, won a Go match against Korea's 9-dan-rank grandmaster Lee Sedol last March. People were worried that artificial intelligence would take away human jobs. The time to seriously discuss the prospect of industrial technology in the 21st century and the role of human beings and society has come.

Nevertheless, we are still living in the digital revolution. Digital corporations that are driven by information and communication technology and digital contents are leading the global economy, and the knowledge-based society based on computers and networks is thriving. However, if there is a difference from the initial stage it is that we have shifted from a sea of information to a flood of information. Over a decade ago, John Naisbitt, a futurist, cited information overload—rather than the lack of information—as a problem of modern society. He also emphasized human insight.

Finding the right information for oneself amidst the flood of information is no easy task, and the burden of determining the authenticity and reliability of the information is growing. In such a situation, a way to efficiently transmit accurate and valuable information in accordance with the users' purposes is required. Curation has become a vehicle for efficiently delivering digitized information and content to users in various forms.

On the other hand, social media plays a role, like YouTube in Psy's "Gangnam Style" craze, when the Korean Wave reached a new peak. Also, an internet-based digital environment with social media as its platform has taken root. As borderless and

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contemporary content circulated after the lowering of the cultural discount rate due to globalization and the development of information and communication technology, Korean content is gaining recognition in the world market. However, the limits of Korean popular pop (K-Pop), TV drama, and star-centered and temporary Korean Wave contents have been pointed out, and creators have been criticized for being overly obsessed with economic effects. It is time to develop the Korean Wave to be more sustainable by expanding the scope of contents to include all Korean culture, including traditional culture.

We have studied about curation as a response to the information overload in the digital age and the production and educational use of Korean knowledge information content through the cultivation of digital literacy, using, for example, infographics and digital storytelling.

2. Materials and Methods

2.1. Content Curation

In general, content curation is intended to reproduce a portion of the original content and link it to the entire item and provide interpretation and commentary on some original content. Curation adds value by adding qualitative judgment to the objects that humans collect and construct [1]. It is something that can be achieved with special abilities that come from human knowledge, experience, and passion, and through these curators, one can easily find and interpret the information that meets one's needs among the explosively ever-increasing body of information, make it one's own, and create new content.

The ability to create information by assigning meaning to the countless individual data floating on the Internet, organizing them into valuable knowledge, and applying them in our lives to demonstrate wisdom, is unique to humans. It requires the abundant knowledge and experience, insight and creativity, and communication of humans. On the other hand, human beings, who can no longer live apart from various media and computers, must cultivate digital literacy, the ability to utilize these digital technologies.

2.2. Infographics

Infographics are the abbreviation of information graphics and can be interpreted as information design contents in which the analyzed data or information are visually expressed to be easily understandable. The format varies from simple charts, diagrams, flow charts, and so on to pictures, images, maps, and more that show specific information. Infographics are differentiated from the traditional concept of graphics in that it is not just about listing information; it simplifies complex and large amounts of information based on data interpretation.

Of the five senses, a person receives information predominantly from vision. We can intuitively and easily understand complex content through infographics. Through this visual pleasure, it is possible to engage people's interest and convey information in a fun way. Infographics are also useful for spreading information quickly, as they are easy to share via social media. In addition, infographics in the curriculum can foster comprehensive thinking skills, literacy, analytical ability, expressive power, and more in students that enable them to view and interpret problems from various perspectives. Infographics do not just visually convey information, but also help people understand and explore it.

2.3. Digital Storytelling

Digital storytelling can be described as analogue-to-digital conversion storytelling, in which various stories are told through digital media in the Internet environment. Digital storytelling is extended to various new media through digital-software-generated text, images, voice, music, video, animation, *etc.*, [2]. Compared with traditional storytelling, digital storytelling can be characterized by the ease, diversity, and flexibility of which variations can appear by utilizing the various functions of multimedia. Moreover, since there is no distinction between the reader and the producer, it can also be characterized by its universality and interactive nature where one can construct a story in a mutually exchangeable manner. Due to these characteristics, digital storytelling has the power of open sharing, wherein many people form communities through stories.

Digital storytelling is a type of storytelling in a hypermedia environment called the Web; hyperlink provides the enjoyment and convenience of browsing abundant yet relevant information and content through navigating the Web. This effective information provision strengthens the context of the story while blocking the information overload phenomenon for the users, thereby enhancing their understanding and emotional rapport.

In this paper, we aim to produce and spread Korean knowledge information content by utilizing 1) content curation, which is a field that requires human competence as described above; 2) infographics, which is both the ensuing technology and the result; and 3) digital storytelling techniques required for overall content composition and context.

3. Yi Sun-sin and Digital Infographic

3.1. The Greatest Admiral, Yi Sun-sin

In 2014, the Korea Gallup research agency conducted a survey of “people whom Koreans love.” The survey was administered to 1,700 men and women over the age of 13 (open answer), and Yi Sun-sin (13%), who is known as the greatest admiral in the history of Korea, had the highest response rate. Yi Sun-sin was a great commander in the mid-Chosun period who made a significant contribution in driving the enemy back during the Japanese Invasion (*Imjinwaeran*, 1592–1598). He is a great figure recognized not only in Korea but also in many other countries.

G. A. Ballard (1862–1948), a British naval admiral and historian, wrote in his book *The Influence of the Sea on the Political History of Japan (1921)*, that “[Yi Sun-sin’s] character [is] as Nelson of the East...One of the greatest leaders of men in history, with [a] genius for strategy...Remarkable lessons of this war [are] still applicable to overseas enterprises.”

William Weir, a former Korean War correspondent, in his book, *50 Military Leaders Who Changed the World*, says the following of Admiral Yi Sun-sin: “Admiral Yi Sun-sin is almost unknown in the West, and perhaps the most successful admiral in history.” He also introduces the “turtle ship,” saying: “The mainstay of the Korean Navy for more than a century was the *kobukson*[Geobukseon], or turtle ship.”

The Greatest War Stories Never Told (2013), which introduced the 100 most dramatic scenes of war history, described the turtle ship as “the most amazing warship.” According to *Fighting Techniques of Naval Warfare (2009)*, the Battle of Hansando is one of the world’s 20 naval battles.

Admiral Yi Sun-sin is the most respected figure in Korea and an internationally recognized global leader. Yet he is not well known compared to great historical figures from other countries. This is because there is a lack of knowledge information contents about Korea’s culture and history. That is, there is no content appropriate to the digital environment, society and cultural communication where Korea has a reputation for

having the world's fastest internet connection speed and the best information and communication technology. Based on these issues, we created an infographic that can efficiently convey information and content about Admiral Yi Sun-sin.

This is a way to arouse interest about this figure and provide information through the Yi Sun-sin infographic while enabling people to find deeper knowledge through hyperlinks. We intend to initiate a Korean Wave of knowledge by spreading information about Yi Sun-sin overseas. This constitutes both a story and a process related to the acquisition and reproduction of knowledge in the digital environment.

3.2. Production of Digital Infographic

Information related to Yi Sun-sin was researched, analyzed, and then divided into seven categories by importance and priority according to the infographic production process. Then the information was visualized using various tools in the styles that fit each category.

- ① Profile: provides basic profile information such as Yi Sun-sin's posthumous name, the period during which he lived, etc.
- ② Thesaurus: defines the concepts and key words related to Yi Sun-sin, which are Imjinwaeran (Japanese invasion of Korea), Nanjung Ilgi (war diary), and Geobukseon (Turtle Ship), and visualizes high-frequency words using the Word Cloud tool.
- ③ Battles: shows the main battles fought by Yi Sun-sin (Battle of Okpo, Battle of Hansando, Battle of Myeongnyang, Battle of Noryang, etc.) as a map image and links to relevant websites for descriptions.
- ④ Timeline: the main events of Yi Sun-sin's life are constructed in a timeline; includes links to relevant websites for additional information.
- ⑤ People: represents the main figures related to Yi Sun-sin (Yu Seong-ryong, King Seonjo, etc.) as a network map for easy understanding, and links to relevant websites with information on each person.
- ⑥ Contents: presents the representative content of each genre among cultural contents based on Yi Sun-sin. For video files such as the TV drama Imjinwaeran 1592 and the movie Myeongnyang (Roaring Currents), links to the best or key scenes on YouTube are embedded, and for text files such as the webtoon (comic) YI SOON SHIN, links lead to the homepage.
- ⑦ Places: gives brief introductions of historical sites representative of Yi Sun-sin (Hyeonchungsa Shrine in Asan, R.O.K. Hallyeohaesang National Marine Park, etc.) using texts and images, and links to relevant websites with additional information.



Figure 1. Yi Sun-sin Infographic [3]

In addition, digital storytelling techniques were used to link hyperlinks to additional text, images, videos, and more so that each component can present its story either individually or in the same context. The heart of the PDF document of the Yi Sun-sin infographic is the hyperlink technology. All types of content related to Yi Sun-sin are connected via links, and clicking the displayed part directs the user to another hypertext document, hypermedia, etc. As such, the hyperlink is inserted as an Internet address in the part of the document where the information is to be extended, linking endlessly to other related content. The user follows the links and discovers the related information. This is the biggest feature and advantage of Web infographics that cannot be applied in print versions. However, hyperlinks have not yet been applied to Web infographics, and most Web infographics convey limited information in a simple image file format. Infographics with hyperlinks go beyond those limitations and enable users to constantly explore knowledge with the greatest extension of information to the relevant topic.

In an environment where the Internet is flooded with data and attention spans are shortening, infographics are used to communicate and enable understanding of information quickly and efficiently. Additionally, infographics have become the most effective way to communicate information in the digital age because of their high shareability through social media [4]. The features and functions of these infographics include the information's visuality and sense of clarity, interactivity with users, information sharing, empathy-oriented education and publicity tools, and more.

The leadership and courage of Admiral Yi Sun-sin, who rescued the nation from the Japanese invasion, can be conveyed through educational content that can inspire and encourage not only Koreans but people around the world, especially the youth. Nevertheless, he is rarely mentioned in the encyclopedias, popular educational websites, and world history textbooks that students around the world use. Hence, a great deal of knowledge information content about Korea should be created.

4. Digital Content Development and the Korean Wave of Knowledge

We created digital infographics using curation, information design technology, and

digital storytelling techniques. Information design is a technique for expressing the form of content, and digital storytelling is a technique for expressing the story of content; the resulting digital infographic is knowledge content. Infographics constitute just a single format and content. A myriad of people with various talents in the world can exercise their respective abilities and create content in a variety of formats and ways, for example, Wikipedia, websites, webtoons, and e-book. These works can be accumulated and shared to improve the Korean Wave of knowledge in the world.



Figure 2. The Korean Wave of Knowledge

To do this, we first need digitalization of data and openness of information. In Korea, a lot of materials are being digitized to build archives, and the recent opening up of data and information is encouraging their use. However, there is a lot of duplicate data in the results of academic and research institutes, and ordinary people without expert knowledge have difficulty utilizing them. In the case of encyclopedias on portal sites, there are almost no services available in English. We need to promote global usage and public communication of universal knowledge about Korea by translating these materials into multiple languages.

Although there are still many shortcomings, digital environments, technologies, and human intellectual abilities can quickly improve and overcome these issues. Furthermore, the Korean Wave created through the popularity of Korean pop culture has led to the interest in Korean society and culture, which is affecting the study of Korean language overseas and revitalizing Korean studies. This is a positive element and an opportunity to achieve a Korean Wave of knowledge.

From the information on the Internet platforms, we can discover creative material, understand and refigure the context, and develop digital contents through digital technology to induce the production of Korean knowledge information. In addition, the digital contents developed in this way may give some inspiration to others and lead to the development of various derivative contents. Through this, it will be possible to spread knowledge about Korea. The purpose of this paper is to demonstrate some unique abilities of human beings such as comprehensive thinking, insight, and creativity, which are obtained through abundant knowledge and experience, and to initiate a Korean Wave of knowledge by actively producing and sharing material about Korean history and culture in various forms.

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