A study on Utilization Situation and Problems in Traditional Culture-Based Public Knowledge Contents

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Abstract

Korea has constructed various knowledge contents by state initiative. Having solely placed its objective in initial construction, its utilization and usability has been reduced and its awareness is quite low. However, traditional culture-based knowledge contents with the growth of culture contents industry, the trend now is on an increasing demand as a creative material. Now, on the strategic side of utilizing public knowledge contents, it has come to a point to consider it more keenly. Thus, the research aims to analyze existing utilization cases of public knowledge contents and present aspects needed in improving utilization and its prospects in expansion and development into the industry. Going beyond the existing database construction phase and to take a leap towards global contents to meet the contemporary demand, it has to expand its breadth, activate its utilization, and pursue spreading of information. If this kind of public contents is developed by utilization of the people and simultaneously achieve improvement in both academics and industry, it can contribute greatly to maintaining and utilization of 'Hallyu'.

Keywords: Traditional Culture Resources, Knowledge Contents, Public Contents

1. Foreword

Recently, around the world, through utilization activation and opening up of public contents towards the people, a lot of policies aimed at business creation have been actively unfolding. In the case of the United States, at the time of President Obama's first term, the bill signed on the first day in the White House was "Open Government Initiative." The bill was initiated in the line that public information was not available in the past for there was no reason to open up public information, however there is no more special reason to not open it up which thus automatically leads to opening up. Korean government through the Ministry of Public Administration and Security Notice no. 2010-45 provides articles which induce to promoting private utilization of public information by letting the state agencies, local governments and public institutions efficiently provide public information and lately, there has been policy based support through the establishment of Public Information Support Center and public information copyright trust management businesses. Moreover, as Big Data utilization is being conceived as an important issue, it has been giving birth to services where the people utilize the basic databases that countries possess. Thus, coupled with public information opening up policy, emphasis has been placed on industries' utilization activation of public contents through opening up to the people.

Korea's politics, economics, society, culture and other various public information[1] has been constructed as a database by the management business of knowledge and information. Especially in the field of culture, due to the effect of this era's popularization of culture, related public institutions are garnering up their efforts in trying to actively inform of the data. Here, traditional culture having emerged as 'Hallyu' 3.0's core keyword, attention has been drawn to the traditional culture related database that has been constructed until now. From the center of popular culture such as the K-pop and K-drama, in spreading the traditional culture-based Hallyu contents, it made possible public information contents to become the creative material for Hallyu contents. Plays, movies, dramas, musicals, and etc. of traditional culture subject are being produced consistently and it can be seen that popular interest is centered towards traditional culture contents as a creative material as it has been drawing popularity.

In this research, two keyword, opening up of public information and traditional culture resources, has been used as a linkage to present utilization of contents which have been based on knowledge and information. Korea has already constructed a database under state initiative by digitalizing various traditional culture resources. The management business of knowledge and information, the Cultural Archetype Digital Contents Development Program and etc. are prime examples of development of knowledge contents. Just that, due to having set its aim in constructing the initial database, there has been a limit to its utilization. Now it has come to a point to pursue utilization activation and diversification of traditional culture based knowledge contents coupled with public information open-door policy. Hereto, the research seeks to take a look at the situation of traditional culture based knowledge contents utilization and present the utilization activation problems in opening up the public information and spreading the private utilization.

2. Traditional Culture Resources and Knowledge-Informatization

2.1. The Concept of Traditional Culture and Knowledge-Informatization

As a dictionary meaning, traditional culture is a unique culture that which originates and handed down in the country. It is like a symbol which shows the country's identity and history. Thereby, SeoYeonHo in the first traditional culture's Hallyu entry strategy research forum comments on traditional culture and presents the concept that "Although it is a kind of a residual culture, rather than being a culture handed down that has lost its meaning, it is still a culture which still possesses a certain value and role in modern times." Thus, tradition can become a material which can produce a new future value depending on how it is applied. Traditional culture based contents holds an important value towards a country's future and not only do the people have to preserve but that we should also creatively inherit and develop it as it's an important asset. Moreover, it can be used as an important key to informing to the world of Korea's traditional culture as 'Hallyu' 3.0 era is emerging and it can play an important role in handing down the traditional culture to its descendants.

To turn the traditional culture resources into contents, Korean government has forwarded Knowledge-Informatization utilizing the excellent IT capital. By state's initiative, traditional culture resources have been constructed to knowledge contents as a public good through digital technology. The first start was the creation of the management business of knowledge

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[1] It is a concept where it includes public contents and the meaning that public institutions as part of their work, manages the documents that has been made out or acquired by the institution which are processed by optical or electronic means which is represented by codes, text, voice, sound, and video as all kinds of material or knowledge. Section 3 of the Framework Act on National Informatization Article 1, Section 2 of the Act on the disclosure of information of public institutions, public information guidelines Section 2 Article 2

and information which was created by employing the unemployed workforce, for the purpose of stimulating the economy and relieving the unemployment situation as it just underwent an IMF bailout, to construct the country's essential database. Through this start, knowledge and information including Korea's old documents, cultural heritages, and other historical-cultural-resources were systematically organized through digitalization. As of now, it is being operated through an integrated public data portal and as shown in Table 1 below, various data such as politics, economy, society, culture have been constructed into a database through digital technology.

Table 1. Status of Knowledge Information on Korea Knowledge Portal

Classification	Descriptions	Details
Ancient Writings	Ancient Books	The Seven Chinese Classics the Four Books and the Three Classics, the study of Confucian classic, etc.
	Ancient Maps	Maps in Joseon Dynasty like Daedongyeojido
	Administrative Documents	Family Register, Slave Documents, Court and Royal Documents, etc
	Foreign Documents	Data about independence movement, old book of the western about Korea
	People	Activists of Independence and feminism, etc.
Cultural Heritages	Relics and Remains	National Treasuries Treasures, Tangible Cultural Properties, Folk Relics
	Living	Folks, Clothes, Food, Beliefs
Culture and Arts	Cultural Assets	Intangible cultural assets, data about pattern, etc
	Video	Korean movie films, scenarios, Korea video archives
	Tourism	Leisure Information in Jeju, Gangwon, Gyeongbuk Province
Reports	Researches	Science, IT, National Defense
	Statistics	Chronology of statistic, yearbooks
	Publications	Publications issued by public institutions and government, policy information, etc
Papers	Academic Thesis	Academic journals issued by associations or institutions
	Graduate Thesis	Master's or doctor's thesis
Ecology, Environment	Biological Resources	Data sample of fossil, plants, etc., ecosystem zones
	BT	Dielectrics, proteomes, agro-live stocking bio data
	Ocean	Weather information, schools of fish, video clips

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	Geological Resources	Distributions of geological features, mines, minerals
	Astronomy, Universe	Celestial images, astronomical phenomena
	GIS	Aerial/forest photographs that have taken since 1960,
Others	Language, Voice	Korean to Other language translation, Voice recognition data
	Laws	Modern Laws from 1910~1948
	North Korea	Administrative system, natural/Human geographical data

Among these, database related to traditional culture are old books, cultural heritages, culture and arts, and in the lower levels, there are Cyber Textbook Museum, National Cultural Heritage Synthetic DB, National Records Video DB, Cultural Property Academic Research Information DB, Korean Historical Information Synthetic DB, Traditional Korean Sound Synthetic DB, and etc. After the management business of knowledge and information, Korean Culture and Contents Agency's (now Korea Creative Content Agency) cultural archetype business and the Academy of Korean Studies' Encyclopedia of Koran Culture Compilation Project and *etc.*, has begun. This kind of knowledge-informatization has shared based on the classified and organized intangible knowledge and as the basis is to create added value it was proved that traditional culture resources can be efficiently utilized. Therefore, it has gone beyond the simple purpose of constructing an archive and consequently, it is expected that it will lead to great spreading effect through the links and utilization of the culture industry.

2.2. Utilization Value of Public Knowledge Contents

Utilizing knowledge contents that has been constructed with a large chunk of national budget has the following kind of benefits. First, in the economic aspect, efficient contents production is possible through prevention of redundant investment For example, if contents were to be produced for National Treasure No.1 'SoongRyeMoon', utilizing Cultural Heritage Administration's information and research data on cultural properties, Seoul Historical Museum's old photographs, Korean Tourism Organization's tourism information, Korean Policy Broadcasting's video records and other existing contents can significantly reduce the production cost and through the utilization of various related data, worthier contents can be included. Furthermore, knowledge contents, a public good, being utilized in the private sector have a positive effect to the added value which is due to the culture economy, job creation, and cultural contents industry's development. Especially, since the traditional culture resources can be used as a culture industry's creative material among the private sector, the knowledge content which is a primary content can have creativity added in utilizing it. Specifically, utilization by movies, dramas, musicals, and other popular culture make the 'Hallyu' content richer.

Second, in the aspect of the subject matter of the content, it can take advantage of the high quality and highly credible contents. Due to having most of the knowledge contents constructed by national institutions, local governments, and other public institutions, as an authorized content it is, it has a respectable value as content. Moreover, as utilization of public contents increase, public institutions will competitively put more effort in trying to improve its quality as well.

Third, in the societal aspect, it is the cultural popularity. The data which were only available to specific researchers has been made more available to the public as it was reproduced as knowledge contents. It is made publicly available for anyone to search and get access to their desired data. Not only did popular culture based contents' utilization make it more available to the public. In a bigger picture, it attained the real benefits of expanded public participation for information. To add more, it has a high value as an educational content and it has contributed to the Korean culture's formation of self-esteem and identity.

3. Utilization Situation and Problems of Public Knowledge Contents

3.1. Utilization Situation

Looking at the cases of utilizing the developed knowledge contents that has been constructed, it has assumed four formations. First, it is the services by partnerships with private portal sites. It is where databases are provided to the public through Partnership with huge portal site such as 'Naver' and 'Google'.
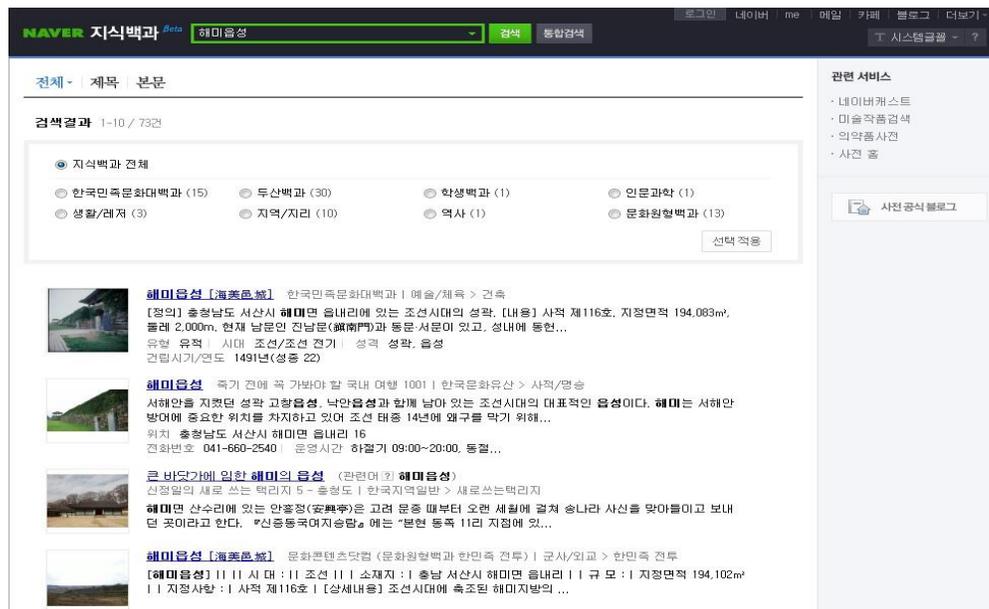

Figure 1. Linked to Portal Sites ⏐

In the case of 'Naver' as shown in Figure 1, it is providing contents services that has partnered with an institution through an encyclopedia. There are cultural property information, the Academy of Korean Studies' Encyclopedia of Korean Culture, Encyclopedia of Korean Local Culture, 'culturecontent.com' (Cultural Archetype Contents), UNESCO's World Heritage and *etc*.
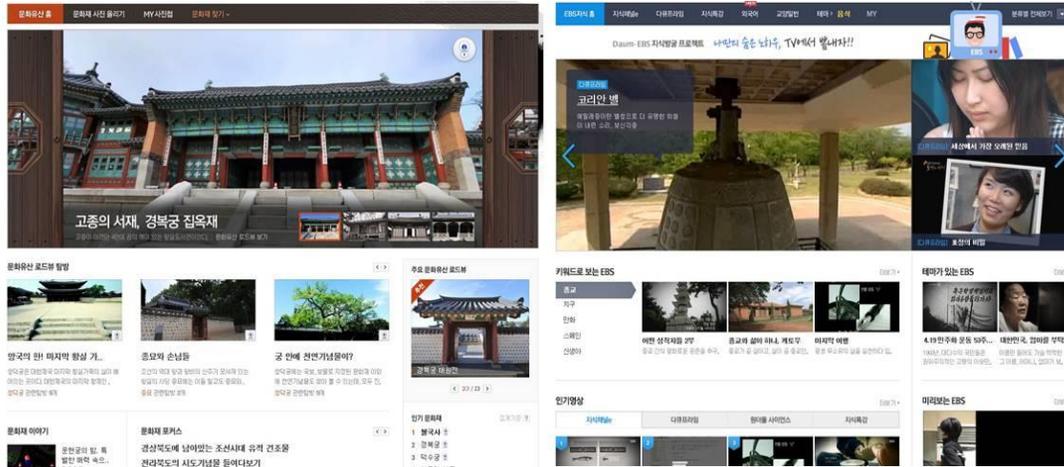
Figure 2. Linked to Portal Sites Ⅱ

Through partnership with 'Daum', Cultural Archetype Encyclopedia (Cultural Archetype Contents), and EBS educational programs, the 'EBS Knowledge' service as shown in Figure 2 is being provided. The service is being provided for by organizing the videos that EBS Educational Broadcasting Program possesses by per material and 'Knowledge Channel e', 'Documentary Prime', 'World Theme Tour', and along with other main broadcasting contents, is being provided as well.

Through Cultural institute (http://www.google.com/culturalinstitute) and Art Project (http://www.googleartproject.com), 'Google' is servicing its contents to museums and art galleries around the world. Because services provided by partnering up with portal and search engine sites enhance the ordinary users' accessibility and usability, it has until recent been one of the common policies many institutions have been trying to implement.

Second, it is the policy of utilizing online contents through offline. Although offline data are processed to online contents generally, recently, cases of reutilizing the online contents to offline contents has been increasing. In the case of the traditional culture contents museum located in AnDong city district, it is the very first museum in Korea displaying only digital contents which provides an artificial traditional culture virtual experience space transcending the stereotyped artifact exhibition. Traditions of the past are being reproduced in a modern sense through Culture Technology, the next-generation growth power. Since 2011, it has been operating a mobile museum which travels directly to the back country elementary schools, senior centers, nursing facilities and other culturally excluded citizens to provide the experience of seeing stereoscopic footages and exhibition video contents. Starting with the major municipal promotions, it has been holding traditional culture heritage commentaries, exhibition experience video demonstrations and screening 3D stereoscopic videos. In the case of AnSan district, based on the 'Encyclopedia of AnSan City (http://ansan.grandculture.net)' complied in 2010 as part of the Encyclopedia of Koran Culture Compilation Project, it has published AnSan Events in 2012. Moreover, 'Korean Successive Characters Comprehensive Information System' which the Academy of Korean Studies has constructed through the character information database, has published a book 'Delicious Korean Historical Figures' by reconstructing major characters with distinctive features. It can be considered as a plan which frequents both on and offline to give access to users from various angles.

Third, it is the utilization expansion plan through an inter-institutions sharing of contents. Among the Korean Tourism Organization's tourism information, cultural property related contents are utilizing the Cultural Heritage Center's database and the National Institute of

Korean history has utilized the Korea Culture and Content Agency's cultural Archetype contents to produce 'Digital Korean History' CD-ROM Title.
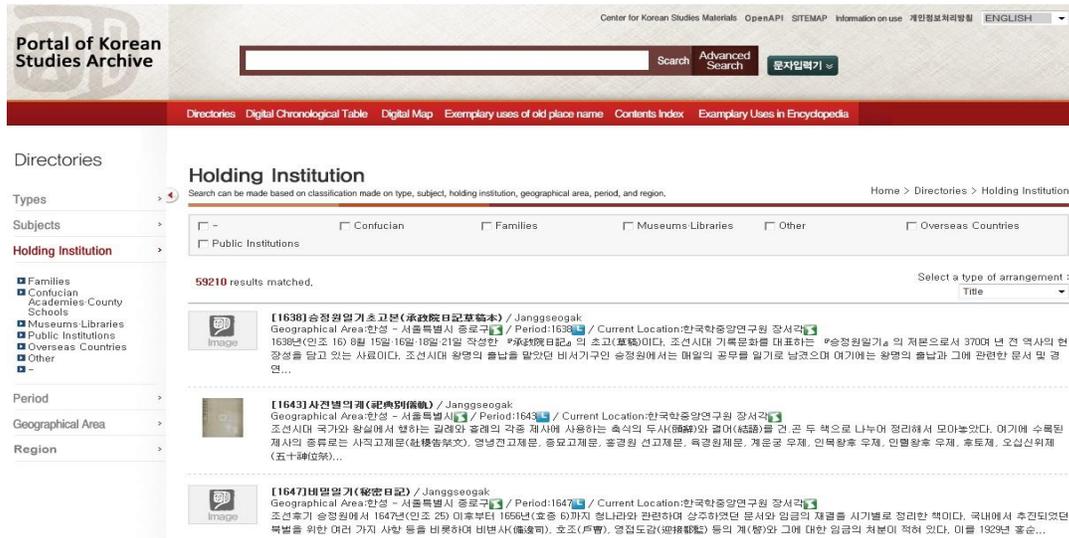

Figure 3. Portal of Korean Studies Archive Institution

Figure 3's 'Portal of Korean Studies Material (http://www.kostma.net/dbMain.aspx?lang=ko)', through the Academy of Korean Studies Center for Korean Studies Material's construction business, was constructed by having been provided Korean studies material DB and old documents related basic dictionaries, Korean Successive Characters Comprehensive Information System, a related institution the National Library of Korea's Korean classics catalog database, Institute for the Translation of Korean Classics' Korean Classics catalog DB, National Institute of Korean History's collection of Korean Historical Materials, and Korean National Research Foundation's' Basic Academic Resource Centers' Korean history related index information. Thus, it has been pursuing content quality improvement and diversification through inter-institution's sharing and utilization of the necessary information to each other.

Lastly, it is the utilization of culture industry's creative material which could be said to have the biggest ripple effect. Movies such as 'King's Man', 'The Divine Weapon', drama 'ByeolSunGeom', and 'Tree with Deep Roots' which utilized Content Agency's cultural Archetype contents, are the exemplary cultural products. Furthermore, National Institute of Korean History constructed 'Annals of Joseon Dynasty Online Service (http://sjw.history.go.kr)' and 'Daily Record of the Royal Secretariat Online Service (http://sjw.history.go.kr)' has become a favorite reference for historical drama and documentary producers. Lately, cases of utilization has been increasing in the field of publication·design·game·character, and the publication field has been publishing humanitarian and educational books such as 'Take Up the Post Alone and Think of You', and 'Back Alley Scenery of Joseon', and historical novels such as 'Tree with Deep Roots', and 'The Moon that Embraced the Sun' basing its contents on knowledge contents. In the field of design, it has been producing design products such as cushions, bags, lights, cups utilizing cultural Archetype contents' embroidery patterns, mono patterns, and traditional patterns. In the field of game·character, traditional patterns, court fashion, foods are also being utilized in making description and items. Thus, utilization cases of basic data or cases of using it as a work's

motif have been increasing in trying to historically prove it. This has a big significance in the creation of culture industry's added value and improving cultural products' competitiveness in the global market.

3.2. Utilization Technology

There are two approaches in utilizing contents in the technical aspects and the first is 'Open API[2] (Application Programming interface)' approach which is attracting attention with the advent of the mobile age. A model Web2.0 technology 'Open API' which realizes the special features of a web as a platform, puts its importance in the spreading and utility activation of the technology. As part of the recent public information open-door policies, with the user friendly utility, many public institutions are competing in introducing the technology. A typical case would be the utilization of the Korean Knowledge Portal's Open API search engine by anybody, whether on the website itself or on other web services, which the Korean Knowledge Portal have been providing to the public. In the case of Korean Tourism Organization, it provides approximately 6,800 places' information on tourist sites, 11,900 places of nearby lodgings·restaurants, 3,200 events of local festivals, 4200 places of leisure·shopping·cultural facilities and other information on tourist photos·videos·maps·theme travel·tour recommendations in the Tour API (http://api.visitkorea.or.kr/kor/tourapi/index.jsp). Moreover, the Korean Tourism Organization has also launched a tourist application, namely 'Smart Senior' for the seniors and 'Travel Maker' for recommending major tourist sites, using the 6,800 places' information on tourist sites and the 11,900 places of nearby lodgings·restaurants.

Figure 4. Open API Service in Seoul City's Public Information

Especially, Seoul City has opened a site called Open Data Square, as shown in Figure 4, to help the positive utilization of Open API by providing various public information of Seoul

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[2] It refers to an interface in which it makes possible to control the operating system or the programming language's functions for the application program to use it.

Historical Museum, Seoul Art Museum and other Seoul City establishments as being one of the municipalities that is actively promoting the utilization of Open API. Thus, 'Open API' method is easy handedly making possible in turning the public data to a secondary creative material service.

Second, it is the utilization of the meta-data, Original data, Linked Data Service and other databases which have been shared and utilized most commonly. Partnerships with portal sites, as mentioned earlier, have been frequently made in inter-institution data sharing as well. Cultural Heritage Center's cultural property information servicing in the system of Linked Data Service by providing the basic meta-data (names, numbers, dates, age, contents) to 'Naver Encyclopedia'. In this system, the user clicks the corresponding link and is transferred to Culture Heritage Center's Cultural Heritage Information System page.
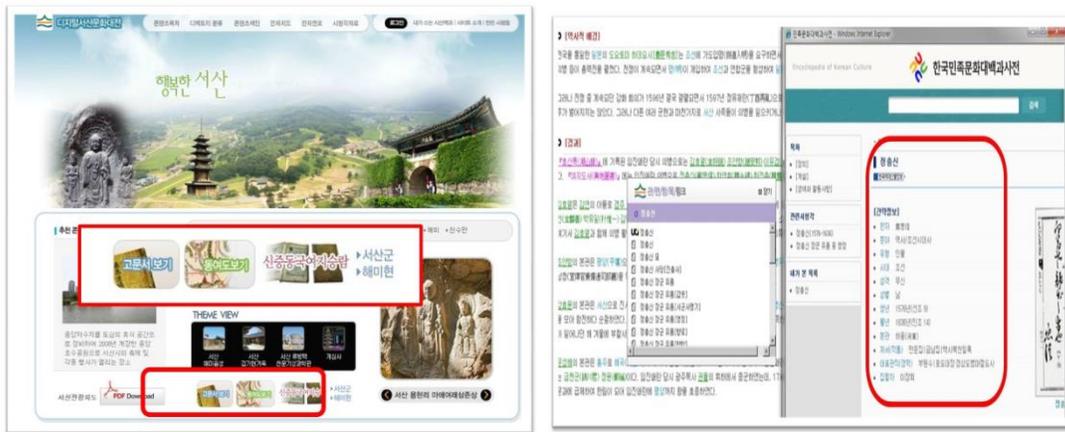

Figure 5. Encyclopedia of Korean Local Culture Linked Data Service

In the case of the 'Encyclopedia of Korean Local Culture (http://www.grandculture.net)' shown in Picture 5 which the Academy of Korean Studies have been constructing, it has been providing services in the system of Linked Data Service by matching the corresponding districts of Korean Old Documents Archive's old document data, Portal for Korean Studies' 'DongYeoDo' Atlas, Institute for the Translation of Korean Classics Catalog DB's The Augmented Gazetteers of Korea. It has been providing services of the Encyclopedia of Korean Culture's character information and Cultural Heritage Center's cultural property information through hyperlink. KRpia's National Knowledge contents (http://www.kr-pia.co.kr) is a site servicing knowledge contents which currently provides history, literature, oriental medicine, collection series, art, Korean culture, animals and plants, science, social science, philosophy and ideology, religion and myths, characters and other 11 field topics and 283 kinds of information by being provided the database of other institution's specializing field such as Institute for the Translation of Korean Classics, the Academy of Korean Studies, Chonbuk National University Museum, Korea Culture and Content Agency, and etc, to fit the convenience of the users. Nationally, through Korea Information Advancement Center constructed public data portal's (http://www.data.go.kr) servicing, it has made it handier for anyone to utilize various institutions' database.

3.3. Utilization Activation Plan

User's credibility towards the contents utilization should be enhanced through private sites such as 'Naver', 'Google', 'Daum', 'Nate' and other portal sites' high quality contents

amongst the various information contained for the public knowledge contents to have its utilization activated. Public knowledge contents must build up a belief to the users that it can be trusted preferentially. This means, the intimate contents, service design, UI and etc's quality should be improved to secure its competitiveness. And Linked Data Service's connection status should be regularly checked to prevent any information disconnection. Through continuous data updates and screening, it should appeal the perception of fastness and accuracy to the users. The high quality contents' utilization in the midst of flooding information should be established through these conditions.

Second, an active promotion policy is necessary. If the public and corporate people do not know where these contents are, it would be difficult for them to utilize these contents. The contents that public institutions possess should be more exposed to the public. As mentioned earlier, institutions should actively induce the users by providing database to public data portals like public data of the central hub cite, or to private portal sites. Global web services like Google have been reluctant of partnerships being a foreign corporation; it is time to actively utilize global web service's value in order to make it more accessible for foreign users as well.

Third, expansion of utilization infra is necessary. By standardizing meta-data like the existing UCI (Universal Content Identifier), linking and utilization should be made more efficient and easier. After the very first publication of UCI Specification ver1.0 on July 2004, it has been extended to 16 public institutions and 15 private it has made stagnant the extension of the publication to other institutions. If extension makes it to all other public institutions, inter-institution data sharing and utilization would be a whole lot easier. For example, as of now in linking Encyclopedia of Korean Local Culture's local culture information, Cultural Heritage Center's cultural heritage information, Korean Tourism Organization's tourism information, and National Geographic Center's geography information, takes a lot of time in data clean ups due to having different meta-data and identifiers. However, it would be much easier to construct one information package if a standardized identifier would be used. Moreover, through policy-based support in developing Open API, a good foothold should be ready for utilization of public knowledge contents. An active support aimed in data sharing value spreading, as Open API, especially in the private sectors, is an easy method in utilizing public data.

Fourth, going beyond the past method of construction which focused on primary archive construction, creation of added value should be made by inducing the private sector's utilization to excavating and develop the creative materials. Like the case of Korean Studies Advancement Center's story thematic park construction, contents should be constructed based on as a culture industry's creation. To achieve this, it is necessary for the institutions holding traditional culture related database, to support and construct the excavation and development of creative materials.

Lastly, servicing and policies establishments should be accompanied in activating utilization. Specifically, the policy establishments needed are policies related to the extent of copyright and policy. In accordance to laws and copyright laws on public institutions' disclosure of information, clearer rules should be established and being a public content, it is advised for the content to be utilized in more various and wider range of methods. Systems like Korean Database Agency's copyright rights management support businesses and Korea Open Government License businesses should be activated in order to facilitate the distribution and utilization of the public knowledge contents. To go on, effective utilization support policies are hard in this state where there is decentralization of public data utilization related institutions to institutions like Korea Database Agency, Korea Copyright Commission and etc. Also, as mentioned earlier, the copyrights management of UCI and Open API, copyrights

management, data sharing management business and *etc.*, should be unified and a central institution should direct in making public data management more efficient.

4. Conclusion

Korea under state initiative, has constructed various knowledge contents utilizing the accumulated digital technology since before. As a matter of fact, utilization capability has fell, for having solely set the goal in construction only. Nevertheless, the dormant traditional culture based knowledge contents demands have naturally increased as culture contents industry have boomed. To add to it, recent movies, musicals, dramas, and even entertainment programs are utilizing the traditional culture resources. Those contents which are not utilized would not be able to preserve its value and be simply forgotten. In the aspect of contents utilization, through a consumer targeted strategy, policy based induction is necessary to effectively stimulate the sharing and spreading of contents. To achieve this, it needs a base for to be able to construct utilization infra and make possible for more sharing and spreading to take place. A more systematic order should be constructed for these kinds of public knowledge contents to be easily developed by the private sectors so that not only domestic users can utilize it but also the foreign users can utilize a variety of contents. Furthermore, through traditional culture resource based contents, it can contribute to spreading of 'Hallyu' as the global contents along with establishing Korea's identity and global awareness.

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