The Digital Archives System and Application Optimized for the Tradition Knowledge Archives

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Abstract: *In this paper, we propose solution for the storing and conjugating of the ever-growing traditional knowledge archives system. Dublin Core is used in order to manage data and the Web 2.0 platform was used to utilize data more easily. The various utilization methods for the archives data are shown.*

Keywords: *Digital Archives, Web 2.0, Tradition Knowledge, Dublin Core*

I. INTRODUCTION

Paper documents were the main source used for re-searching and learning traditional knowledge. However, in 21 century, maintenance of the data is felt needed. People who are not expert and their concerns for the traditional knowledge were increased. As such, the means and methods more easy to contact these materials are felt needed. Internet is now used by most of people in Korea. Therefore, the development of the web application concerning the tradition knowledge digital ar-chives was essentially required.

The tradition knowledge digital archives system is needed to utilize and conserve data. It is to digitalize and utilize disappearing traditional knowledge. The tradition knowledge digital archives system developed with the web 2.0 (Hahm *et al*., 2006). The participation by not only expert but also non ex-perts can easily access through using the web.

In this paper, presently developed Group for the People without History archives system is utilized. It aims to seek for the conservation and utilization of tradition knowledge archives through the tradition knowledge digital archives web application.

II. TRADITION KNOWLEDGE DIGITAL ARCHIVES SYSTEM

The digital archives is defined as the compression with the size, which is smaller it binds data one or several files the long time keeps data in the secondary storage like the disk or tape production with the digital asset, and system which it manages in order to store and systematically classify this and do the search and display effectually stored.

The ultimate goals for the digital archives are permanent conservation of data, efficient management of data and utilization of data. The digitalization is the essential for the permanent conservation of the archives data. The construction of the database is essential for the efficient management of digitalized data. It should be easy to approach by everyone as we live in era of the Web 2.0. In order to make archive access more easily, web page need to be easy to use, meaning application modules of the archives should not be raveled.

Fig. 1 is the overall system architecture figure of the Group for the People without History digital archives integrated system. There are pre-conditions to the construction of the digital archives system. First, Meta Data item needs to be standardized. Second, collection of the decent qualified Meta Data, and last researchers who collects these decent qualified Meta Data.
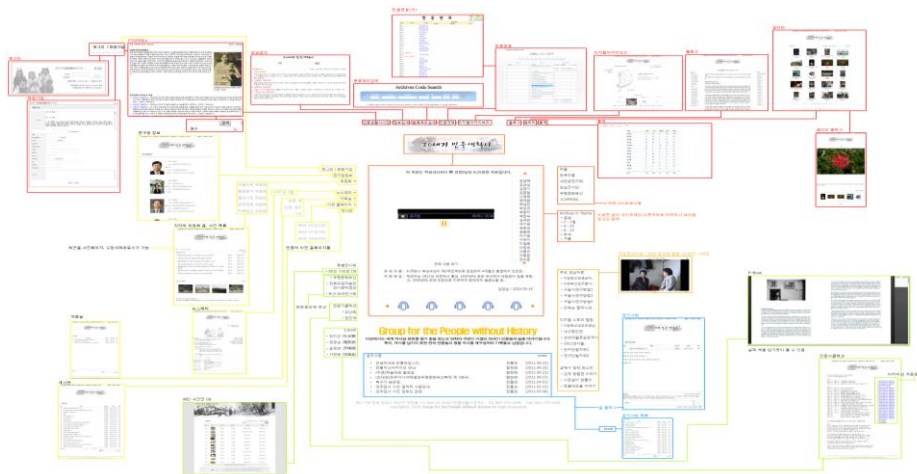

Figure 1. The archives system architecture

III. DATABASE

The Dublin Core (www.dublincore.org) is Agreed-upon standards for Meta Data, standards set by OCLC (Online Computer Library Center) and NCSA (National Center for Supercomputer Applications) during workshop held in Dublin 1995, and it is most widely used description method of Meta Data.

Variety of data becomes too diverse and there were limit to old way of document-centric description of Meta Data. So, in Dublin, the world information management experts are gathered and adopted this new formed standard. The Dublin Core is made of 16 elementary items and it is designed to support and share data's resource in various fields (Kim, 1997).

Group for the People without History follows the standardized Dublin Core form and the particular item was added to create better quality Meta Data. The particular item is context file, RFID tag number and GPS in-formation (Kim et al., 2008). Context file is the information of the there is digital data of raw data designated location or location to upload data. The data administrator can grasp the appearance of digital data and location by the addition of the context file at any time. The GPS information can divide into 2. One is the collection place of data. And the other one is the place where it keeps data. The GPS information is utilized and the location in which Meta Data are collected can be known. The place where Meta Data are collected is utilized and the development of many applications is possible.

The tradition knowledge digital archives divided with the Meta-Table and Type-Table in order to relate several multimedia to one Meta Data. The Type-Table is the table having the information about the multimedia material. The Meta-Table is the table putting the explanation about the multimedia. 2 tables shared through the am id value. Fig. 2 is the Meta-Table and figure which divides and utilizes the Type-Table.
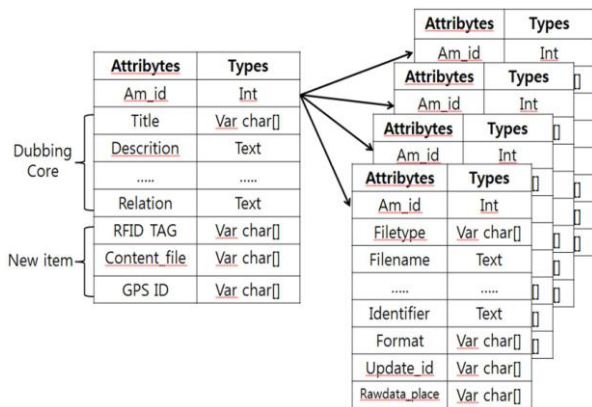

Figure 2. Database correlation diagram.

IV. DIGITAL ARCHIVES APPLICATION

The supply of the Web 2.0 shocked many people around the world. As long as internet is supplied, it is possible to connect to Web 2.0. Using this as advantage, our major activity utilizes web application.

Anyone can connect easily to the digital archives system through the web. However, to prevent the indiscreet emission of data, data and user limitations are set. The digital archives system should be easy to use by everyone. Therefore, the user interface needs to be easy to explore. Also the processing of the digital archives data is important.

After digital archives system is constructed, potential of its usage can be variously expanded. The Group for the People without History tradition knowledge digital archives application plan can approach the database, elementarily it includes the color program and application, and etc. (Park, 2008).

The overall system architecture of the digital archives includes the next ingredients.

A. Digital Archives Integrated System

The basis of the tradition knowledge digital archives system of the people life cycle is raw data archives. By using these raw data archives, the integrated system module (the people chronology, people previous, E-Book, and ontology system etc.) operates. The archives data are collected through the digital archives system.

In the collecting process of the archives data, the most important part is the construction of the quality Meta Data. Several special items were added to the standardized Dublin Core to build Meta Data. By doing so numerous data were collected and we have built several modules with it.

The integrated system of the tradition knowledge digital archives was constructed to provide too many people. The main of the integrated system is easily accessible in many modules of the archives. Recommended archives data created by experts can also be accessed through main page link. Data can be searched using simple terminology search, information retrieval through indexation of the documentation, item numbers created and used by experts, and etc.

By using the Archives In Theme, the large-scale cases of the archives can be looked over in the main screen.

B. Minjung Chronology

From Fig. 3, minjung chronology is the traditional knowledge chronology which organized based on the research group's raw data archive about the peoples living culture content of past 100 years. It is chronologies and compared with world, Korean history.

The people chronology constructed by raw data archives is constructed by the input of the administrator or researchers. In this way, constructed data are easy to use. With one simple click, people can access data they need, and the event of the pertinent year can be checked. If you search for the related year world history, and

Korean / local history can be checked immediately. By looking world history and Korean / local history people can check relation of the important event with The Group for the People without History.

Figure 3. The minjung chronology system.

C. Tradition Knowledge Previous

Dictionary of the tradition knowledge is constructed using oral statement from the raw and digital archives system. It is dictionary made form people's memory, story, witnessing of event, evidence, and photo. As to the term of the tradition knowledge previous, there is a little the distance with the standard language previous because of making on the basis of data of oral statement. In addition, it is multimedia dictionary containing ex-ample, sound of life cycle, related sound, movie, picture, document and etc.

People who doesn't have researcher ID can input and define terms to dictionary though web. And as long as there are internet connection people can upload and revise data. If person defines the term and upload it dictionary module searches related archives and connect him to it. Most of important terms are added by researchers. However, even non expert can access to web and add the terms that only they know to make dictionary which is made by everyone.

Here, it is the spoken population intellectual strength. Terms used in dictionary is directly connected to data from digital archives so person who uses corresponding term can be easily checked using voice and video record. In this way, it can be said to be the idea made to many people the population intellectual strength.

D. E-Book

E-Book system is one of application plan made to enrich tradition knowledge digital archives. The E-Book system is the eBook containing data from digital archives as shown Fig. 4. E-Book is collection of data from archives which is an introduction of person who researchers want introduce to public. Researchers collect data and input them to system. This way, by using completed archives E-Book system, people can check specific traditional knowledge related person or event easily. The frame of the E-Book is made to be similar to actual paper book so people can feel more comfortable using it.

Figure 4. E-Book system.

E. Ontology System

The ontology is the sort of term dictionary consisting of the term and relationships. Ontology is the most central concepts for the semantic web applications. We ordered the ontology system in being the term network. And for the relationship between terms, is expressed to 1 step. As to the current term network system, many functions were not added still. However, the term network system developed newly adds the various functions.

The development reason of the term network is in the huge network with the addition of the term. The researchers add the terms related to the digital archives. According to the terms relation, the added terms develop the network. According to the relationship, the terms formed in this way shows till 3 steps. The relationship between terms has the close relation between the archives data. The term network formed in this way is helpful to the digital archives application.

First, the user searches for the term. Then, the term network shows the term and term having relation till 3 steps. In this way, by showing the terms related to the term till 3 steps the semantic search function is possible. The user is offered the digital archives data relating with the search of terms of the box. The peoples can become close to the archives with the easy use easily.

V. CONCLUSIONS

Simple list of features of the digital archives system are follow.

(1) Relational database system which is to store archives data more efficiently

(2) Archives semantic search through the ontology sys-tem

(3) Easy to use, even for the non-expert through the Web 2.0 and application

(4) Various application relate to the digital archives

In this paper, the digital archives system with 20 century people life cycle research institute manages is introduced. We introduced tradition knowledge digital archives and its various use. We believe that conjugating of the digital archive is as much important assignment as the conservation. We want more public to be interested in this matter and hoping more knowledge for the digital archives is created.

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