The Role of Art Libraries and Their Partners in Documenting and Preserving the Threatened Culture:

The Case of Global Memory Net and the World Heritage Memory Net [1]

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ABSTRACT:

In following the theme of this Art Section, "Developing and documenting contemporary indigenous and minority culture," this author articulates the role of art libraries and their partners in documenting and preserving the threatened cultures of the indigenous populations. She will share the experience of her *Global Memory Net (GMNet)* (http://www.memorynet.org), a multi-year International Digital Library Project supported by the US National Science Foundation and the latest activities of the first US World Heritage Digital Center in partnership with the UNESCO's World Heritage Center (http://whc.unesco.org/en/news/326).

GMNet currently has preserved and documented several art collections related to numerous indigenous groups, particularly in the Far East, such as those related to:
- *UNESCO's Memory of the World*,
- 56 ethnic groups in China,
- 54 minority ethnic groups in Vietnam by using all the arts and artifacts from the Vietnam National Museum of Ethnology,
- The Naxi Collection of the Library of Congress' Asian Division,
- Taiwan Memory, and
- many others included in the 2400 World Digital Collection which are related to indigenous populations in the world.

INTRODUCTION

When the protection of threatened cultures is discussed, most have focused on the endangered indigenous cultures, and especially on the need to preserve and document the thousands of languages worldwide which belong to indigenous people and are in danger of extinction. This is because "at least half the world's 7,000 languages will probably die out in the next century, a threat now recognized as a worldwide crisis" (Sustainable Travel International, 2006).

Yet, because of the theme of this session of Art Libraries Division, this paper will place its emphasis on the preservation and documentation of art collections, particularly those of indigenous populations. In surfing the Web for preparing this paper, I was intrigued by one of the activity ideas on teaching indigenous cultures to school children. Vicci Recckio, a first-grade teacher of San Diego and now at an international school in Waterloo, Belgium, suggests the need

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for "defining indigenous people" and for young students to have some background information regarding world population." before introducing lessons about indigenous people. She states:

> *This understanding will make the statistics of the indigenous people more relevant. For example, knowing that 250,000 people are born every day in the world will help put in perspective the diminishing number of the Lancandon tribe of Central America (300 people) and the Inuit people of Greenland (55,000).*

I believe that impact of this kind of approach on us as well. For example, when I was working on the 56 ethnic groups in China for *Global Memory Net (GMNet),* I knew that the great majority of Chinese population is the Han (over 1 billion people or almost 92% of the total Chinese population). But, I did not know the incredibly wide difference among the other 55 ethnic minorities in China (China's Ethnic Minorities, 2003). Even though the statistics is rather dated and is based on the 4th National Census of China on July 1, 1990, the wide range of population of the 55 ethnic groups was reported, ranging from over 15 million of the Zhuang to the smallest minority of Lhoba in Tibet, which has only 2300 some people in total. 7 of the 55 minorities have less than 10,000 people in China. The future of these small indigenous groups is truly threatened.

Furthermore, in 1990, China's census reported only 2,900 of the Gaoshan people, but the figure did not include those 450,000 in Taiwan. Although Gaoshan, as a whole, is considered in China as one of the 55 indigenous groups, locally it is officially further divided to 13 Formosan aborigine groups, stated as follows:

> *"Apart from the Pingpu Tribe (plains aborigines), who are now virtually merged with the Han Chinese population, Taiwan still has thirteen culturally distinct indigenous tribes…* These tribes have experiences great social changes throughout the years and their culture faces very uncertain future.*"* (Yang, 2007)

Despite of the uncertain future, fortunately they are well documented in "Digital Archives of Formosan Aborigines" by the Institute of Ethnology of Academia Sinica as a part of the major digital archival project, NDAP, of Taiwan.[2]

In the world scene, ethnic groups by country can be found in NationMaster.com.[3] Similar to the case of China, we can find many countries in the world have indigenous groups which are in "endangered" categories. This is a serious crisis! From world cultural and heritage point of views, we need to know that all ethnic groups, regardless of their sizes, have together formed the vast and complex mosaic of the world cultural. Missing any parts of this mosaic will be great loss to all. In addition, each of the indigenous groups has its own unique art, culture and heritage, which necessities the exploration of effective ways to preserve and document the threatened culture.

In this paper, experience with the use of cutting edge technologies in *Global Memory Net (GMNet)* and the forthcoming *World Heritage Memory Net* will be specifically presented to illustrate how these technologies can indeed help art librarians in assuming a proactive role in developing and documenting indigenous and minority culture. Though immensely challenging, we do find success stories. In addition, discussions will also be given on the digital preservation of cultural and historical heritage by protecting heritage sites of the world.

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[2] http://ndaip.sinica.edu.tw/english_page01.htm

[3] http://www.nationmaster.com/graph/peo_eth_gro-people-ethnic-groups

GLOBAL MEMORY NET (GMNet)

Global Memory Net (GMNet), a multi-year International Digital Library Project supported by the US National Science Foundation, launched its web site for universal access in July 2006 (http://www.memorynet.org). It includes rich multimedia multi-lingual collections and resources from many countries, including several related specifically to indigenous ethnic groups. Its content collaborators cover all types of organizations and libraries, and even private individuals with unique collections. Although two other papers delivered by this author at *IFLA 2007* are also relevant to participants of this section (Chen, 2007b; Chen, 2007c). They are of different emphases. This paper will focus on how *GMNet* with the help of a cutting-edge integrated Multimedia Content Retrieval System (i-M-C-S) can provide fast and effective retrieval and delivery of multimedia and multi-lingual resources on indigenous culture and art at a simple click of the mouse.

Sample Collections on Indigenous Culture in *GMNet*

GMNet's content collaborators include organizations at many different levels – from international to national institutions, and from libraries to museums, and archives. The multicultural and multi-lingual collections are many with some samples shown in Figure l. Those specifically relate to indigenous population include:

Figure 1. Same *GMNet* digital collections

- UNESCO's *Memory of the World*, which include over 660 images selected from all projects of the UNESCO's *Memory of the World*, covering sample images of treasured collections from over 100 countries, several of these are related to indigenous culture.

- US Library of Congress Asian Division's unique *Naxi Collection* – Naxi is one of the 55 minority ethnic groups of China. The collection of 3,342 Naxi manuscripts features ceremonial writings of the Naxi people of Yunnan   Province, China.

- *Chinese 56 Ethnic Groups* – Aside from Han, 55 of these groups are minority ethnic groups in China. The collection consists of images of people, arts, costumes, ceremonial arts, etc.

- *Chinese Minority – The Li*: This image collection deals with the major minority group situated in Hainan Province of China. This is a collaborative effort between the University of Hainan Library and *Global Memory Net*.

- *Taiwan Memory* – A collaboration with NCL in Taiwan, majority of the 500 images are related to Formosan indigenous population in early days.
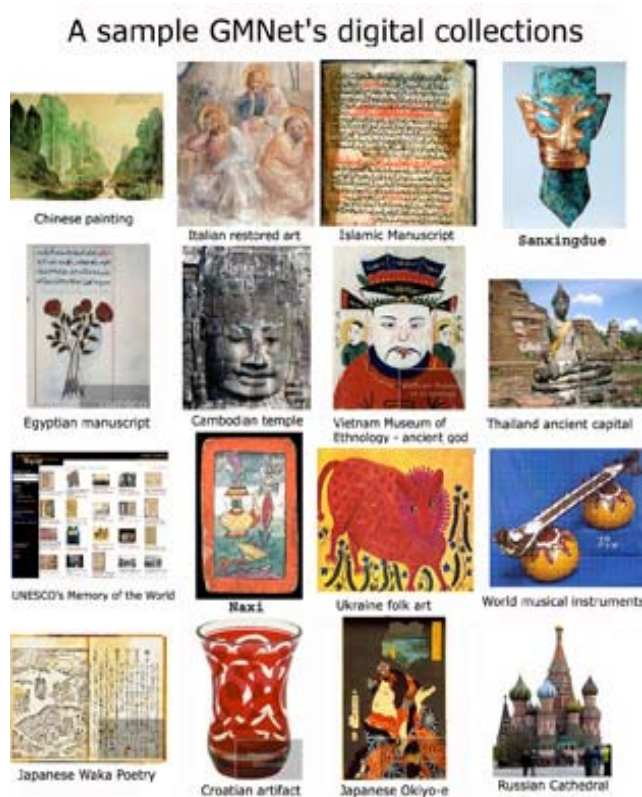
- *Vietnam Museum of Ethnology*'s ethnic photo collections of the 54 ethnic groups in Vietnam. VME is the national museum devoted to preserve and present the cultural heritages of these ethnic groups.

- *World Musical Instruments* – This collection consists of several hundred musical instruments mostly from the Far East. Many are used by indigenous people in various parts of the world.

- *World Digital Collections* - Over 2400 digital libraries and archives in the world are gathered after extensive searches from numerous sources. Indigenous and threaten culture are included.

How does *GMNet* work? What are the features?

GMNet is an exciting collaborative and workable model at all levels for delivering multimedia and multi-lingual content over the Web by utilizing cutting edge content-base image retrieval technologies in addition to the traditional metadata-based searching. It allows users to find images based on an integration of visual similarity and metadata relevance. The technologies used in the *GMNet* have been successfully tested on digital images of multiple cultures.

If a collection is known to a user, he/she can conduct easy and flexible traditional searches by using any of the known metadata fields. However, this generally is not the case. We shall elaborate a few specific cases. More details can be found in Chen (2007a) and Chen (2007b).

Imagine one is doing research for a project on:

1. Naxi,
2. Li's tattoo,
3. Ethnic basket in Vietnam, or
4. Percussion musical instruments used by ethnic groups.

Where and how to find information in GMNet?

Perhaps one might try to find online – but how would one knows if the information is credible? In any event, one would probably need to piece together information from many sources. One might also be able to find wonderful books on the chosen topic, but perhaps one would like to get a closer look at primary documents that are unavailable in one's local library. Imagine how one's learning and research would be enriched if he/she also could take a close look at artwork, maps, and other forms of cultural artifacts. *GMN* is designed to serve just that need to provide students, faculty, other researchers, and the general public with a high-quality, sensory-rich resource for in depth browsing, research and appreciation of the cultures of the world.

- *"Traditional Search"* - Take the above 4 research topics as examples, we can probably go to *GMNet* and use "traditional search" to find answers to the last three topics immediately by typing the keywords in any chosen field or all fields of the metadata. Figure 2-4 shows the instant location of the relevant images of the requested topics – Li's Tattoo (Figure 2), Ethnic basket in Vietnam (Figure 3), and Percussion instruments (Figure 4).
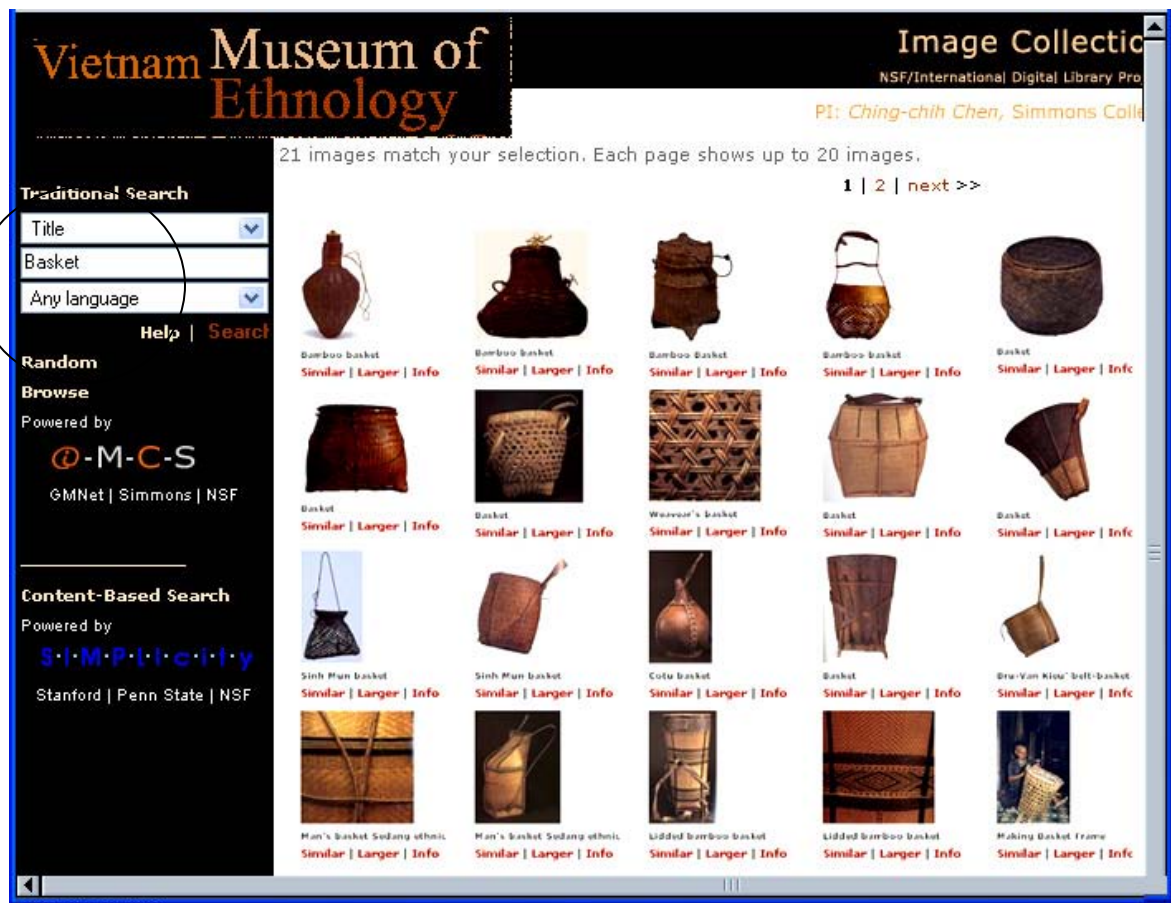
Figure 2. Li's facial and body tattoos

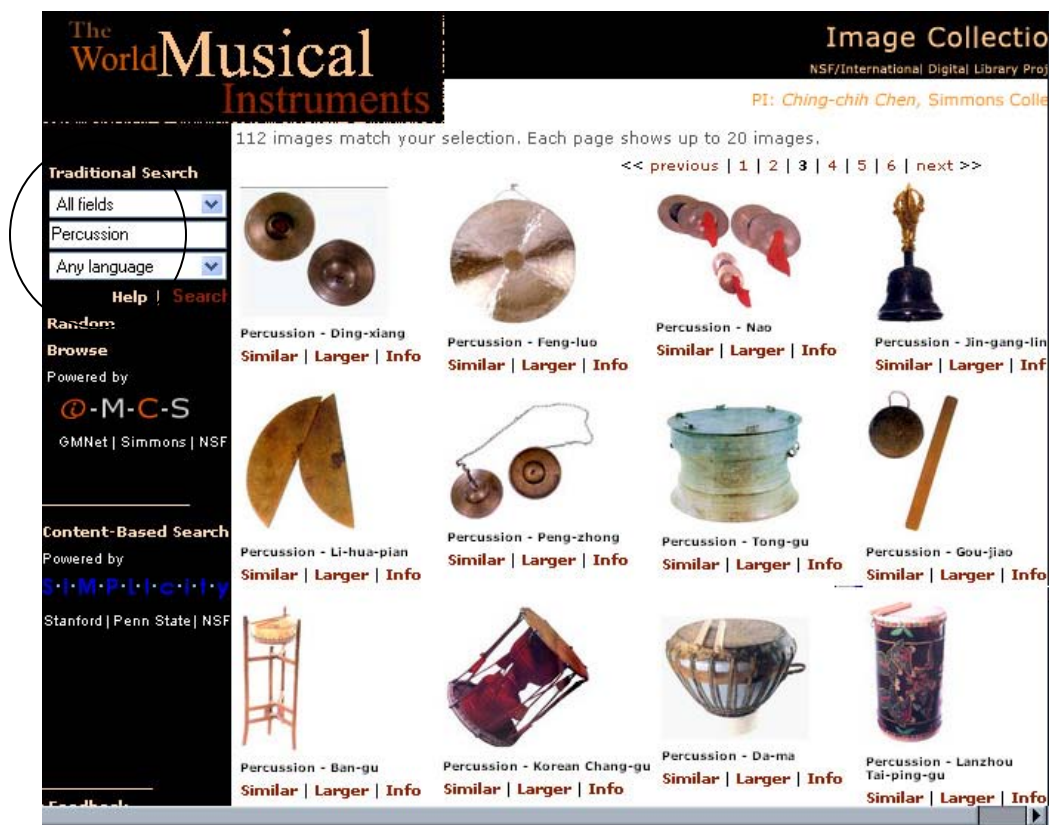Figure 3. Basket work of Vietnamese minority ethnic groups

Figure 4. Percussion musical instruments in Asia (many are used by ethnic groups)

- *"Random" and "Browse" functionalities* – While we are able to use the traditional search method to retrieve answers to Topics 2-4 instantly, it would be very difficult for one to know how to start its search for information on Topic 1 if one does not even know what Naxi is. In fact, for most information seekers, this is generally the case. Figure 5 shows the HomePage of Library of Congress' Naxi Manuscript Collection. A user will have to immediately choose one of the three options – Search by Keyword, or Browse by Title and Subjects. But, when

he/she, like almost great majority of the users, do not know what Naxi is, he/she will not be able to make the choice, and will have to leave this digital collection unsatisfied. But, for *GMNet*, its i-M-C-S system will have both the "Random" and "Browse" functions. "Random" will provide random access to any images in a collection, while "Browse" will display images in sequential order as they are processed. The "Random" feature is particularly useful to provide a macro-glimpse of what a collection is like, as well as to provide some

Figure 5. Home Page of Naxi Manuscript Collection at LC

staring keywords from "titles" of the displayed images for the user to pursue additional searches as shown in Figure 6.

Figure 6. Left screen shows the randomly displayed images with a chosen image

- *Instant retrieval of similar images of interest by using cutting-edge retrieval technique -* our system's "Content-based Image Retrieval" (CBIR) capabilities (in collaboration of James Wang of PSU) will be able to permit the user to choose a desired image as shown in Figure 6, which is enlarged in Figure 7. It shows clearly that there are 3 further options for one to select:

  o **"Similar"** – A simple click of this will yield all the similar images in color and shape as shown in the middle screen of Figure 6.

  o **"Larger"** – A simple click of this will yield enlarged image or portions of the image as shown in the right screen of Figure 6. When the enlargement is larger than the icon, digital water mark, in this case, "Library of Congress – Asian Division" will be dynamically generated in order to protect the intellectual property of the image owner. Note the short title with suggested keywords for further search.

[Illustrated cards (with Tibetan language)]
Similar | Larger | Info

Figure 7. Enlarges chosen image with options of action

  o **"Info"** – When a user is interested in the chosen image, he/she will most likely want to have more information about it. This is the time for obtaining more descriptive information on this image by clicking on "Info" to obtain what is shown in Figure 8. Note that if one uses "Tibetan language" as keyword to search in "Traditional Search," all areas with this term will be highlighted. Note also the Source is the linked instantly to LC's Naxi site, which now the user can search with keyword by entering "Tibetan", for example after clicking "Keyword) on Figure 5.

Figure 8. Descriptive annotation of the chosen image with instant link to LC's Web Page of the Naxi Manuscript

- *Seamless integration of multimedia information* – If relevant resource information on a chosen image is available in formats other than textual annotation, the user can then retrieve the relevant audio, video, etc. again by a single click of the mouse, as shown in Figure 9. Thus, an indigenous group's dances, music, endangered speaking languages, oral history, etc. can all be presented in non-textual format.

- *Multi-lingual information presentation and retrieval* – Currently *GMNet* has annotations in more than a dozen languages, but theoretically all languages available in UNICODE can be included. See more discussion on this aspect in Chen (2007b). For example, Figure 10 shows photos of a minority ethnic group in Châu Á, Vietnam, and the descriptive information of each is in both English and Vietnamese, shown in Figure 11.

Figure 9. Digital video of a stage show

Figure 10 (upper). 15 photos of minority ethnic group from Châu Á, Vietnam.

Figure 11 (right). The Vietnamese descriptive annotation of a chosen image.

- *Multi-collection search* – *GMNet* permits one to search all collections together rather than just one collection at a time. For example, when "ethnic minority" is searched under "Multi-Collection Searches," thousands of images as well as numerous websites can be found instantly as shown in Figure 12.

- *Linking to the World Resources* – *GMNet* is further linked one's interest on a topic further to the world resources in all fronts. In additional to the 2400 world digital resources from over 80 countries at one's fingertip, one can instantly search over 500 Millions bibliographic records

of OCLC for all the books available nearby, as well as all the resources available on the Web, such as Wikipedia, Google resources (such as Google Book, Google Image, Google Scholar, etc.), Internet Archive, Million Books, etc.

- *Additional Features* - In addition to those features described above, *GMNet* permits geographical searches, and enables users to create their own *GMNet* projects.

WORLD HERITAGE MEMORY NET (WHMNet)

Another recent exciting development is our partnership with the World Heritage Center (WHC) of UNESCO – the establishment of the first virtual US World Heritage Digital Center, which will use our *GMNet'*s i-M-C-S technology to provide multimedia and multi-lingual information on the 830 world heritage sites of 138 countries. The latest news on this development can be found at the News Archive of UNESCO/WHC.[4]

This is an exciting project with great challenges! Many of the World Heritage Sites would have been threatened for destruction if not properly preserved. The importance of these sites is clearly stated by UNESCO/WHC:

Figure 12. Multi-collection search on "ethnic minority"

Heritage is our legacy from the past, what we live with today, and what we pass on to future generations. Our cultural and natural heritage are both irreplaceable sources of life and inspiration. Places as unique and diverse as the wilds of East Africa's Serengeti, the Pyramids of Egypt, the Great Barrier Reef in Australia and the Baroque cathedrals of Latin America make up our world's heritage.

Like *GMNet*, *WHMNet* will start with images, with supporting multi-lingual annotations. *WHMNet* will have the effective technology not only to document and present World Heritage Sites that "belong to all the peoples of the world, irrespective of the territory on which they are located," but also to provide cross-country and cross-cultural comparisons of the invaluable cultural sites, such as the example shown in the UNESCO/WHC News of May 3, 2007.

CONCLUSION

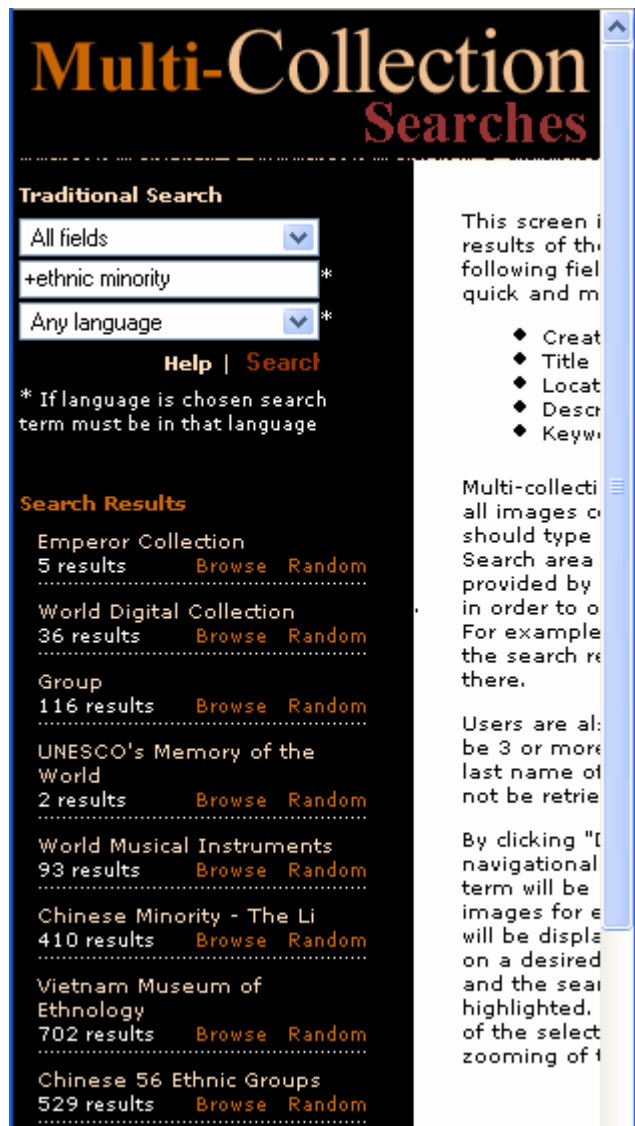*GMNet* and the forthcoming *WHMNet* are neither simple and traditional databases nor Web

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[4] http://whc.unesco.org/en/news/326 (English version) and http://whc.unesco.org/fr/actualites/326/ (French version) on May 3, 2007.

pages. They are really dynamic interlocking knowledge bases of the world cultural, historical and heritage digital resources. While other aspects of the systems will be described in other presentations (Chen, 2007b, Chen, 2007c) at this conference, this presentation focusing on *GMNet*'s ability to utilize cutting-edge technologies to document, preserve, present and retrieve multimedia multi-lingual resources on some of the world's indigenous populations and threaten culture in a way not possible before. The potentials for art librarians should be clear.

ACKNOWLEDGMENT

REFERENCES

[Chen, 2007a] Chen, Ching-chih, "Challenges for Developing a Global Digital Library and Gateway: From *Global Memory Net* to World Heritage Digital Library," Invited paper presented at the *Digial Library for the Maghred Workshop*, Held in Rabat, Morocco, January 25-27, 2007, organized by the Fulbright Academy of Science and Technology.
http://www.fulbrightacademy.org/page/86609/

[Chen, 2007b] Chen, Ching-chih, "The Delivery of Web-based Multilingual Digital Collections and Services to Multicultural Populations: The Case of *Global Memory Net*," to be presented at the *IFLA/Government Libraries Section*, August 2007, Durban, South Africa.

[Chen, 2007c] Chen, Ching-chih, "Using Cutting-edge Technology for Innovative Global Resource Sharing Services: The Cases of *Global Memory Net* and World Heritage Digital Memory," to be presented at the *IFLA/Document Delivery and Resource Sharing Section*, August 2007, Durban, South Africa.

China's Ethnic Minorities. Beijing, China: Foreign Languages Press, 2003.

Yang, C.S. (楊政賢), "Brief introduction to Formosan Aborigines," Taiwan, NDAP, May 2007. (internal document).

Recckio, Vicci, "Indigenous cultures: Activity ideas," on the PBS Teachers' website.
http://www.pbs.org/teachers/thismonth/indigenous/index1.html

Sustainable Travel International, "Preserving the social norms and cultures local and indigenous communities," in *2006 Guide to Sustainable Tourism*. STI, 2006.
http://www.greenoptions.com/wiki/ix_preserving_the_social_norms_and_cultures_of_local_and_i ndigenous_communities.