

## Spiritual Geoinformatics Or Placing The Spirit

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**Abstract.** Intangible cultural heritage is closely connected to the geographic location. Its creation and development was greatly affected by the geographic environment. However the problem of identifying, recording, studying and preserving the intangible tradition is always based on its relation to place. Two issues are addressed in this paper: Firstly the means and tools for recording, i.e. digitizing, intangible cultural heritage and secondly establishing and exploiting its relation to place, i.e. geographic location. Geoinformatics is a science which -up to now- was used to relate real world objects to their location and to explore their interrelations. An attempt is made here to exploit this modern technological tool in order to establish relations between spirit and place, hence *spiritual geoinformatics*. Practical examples are employed in order to illustrate how GIS technology is able to provide the means for establishing these links between digitized intangible culture and their geographic location through the proper development of a system for Cultural Heritage Information Management (CHIM).

### 1. Introduction

The term *Cultural Heritage* most often, if not always, brings to mind monuments, statues, big or small monumental complexes, even armory, jewels, things of everyday life. Apart from these tangible objects, Cultural Heritage includes a wealth of other elements which determine the history and the past of mankind; intangible items included.

The former would not be able to contribute to the study, the preservation and -most of all- to the understanding of mankind's heritage if they were isolated from the latter. Hence a close relation exists between tangible and intangible Cultural Heritage, which really boils down to an interrelation between location and both forms of Cultural Heritage. Creation and evolution are interconnected and they affect one another.

This interaction of objects -be it movable or not- with place, i.e. geographic location, is a well-known fact nowadays. It has bridged two disciplines: Geoinformatics on one hand and Monument Preservation on the other. Geographic Information Systems is the scientific tool with which monuments and related information has been connected to place. In this way the Monument Information Systems (MIS) have evolved.

However, as mentioned above, the relation of intangible information with tangible Cultural Heritage is highly important and definitely required. Hence this paper will explore the ways intangible Cultural Heritage may be linked to location, otherwise how the spirit will be placed where it belongs, or - alternatively- how Geoinformatics may serve the Spirit, while at the same time important attributes of both forms of Cultural Heritage are preserved and interrelated.

For this task standards are of utmost importance. Indigenous organizations, museums and archives, and cultural researchers have called for guidance on which Intellectual Property (IP) issues and options arise during recording and digitization initiatives. However, little effort has been recorded in the literature towards this goal. The World Intellectual Property Organization (WIPO) presents the *Creative Heritage Project*, where IP Guidelines for Documenting, Recording and Digitizing Intangible Cultural Heritage are proposed. A project aiming to help cultures around the world preserve and protect their history and traditions in a digital world. The Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage of UNESCO has elaborated the first draft of the Operational Directives for the implementation of the “Convention for Safeguarding the Intangible Cultural Heritage” (<http://www.unesco.org/culture/ich/index.php?pg=home>).

## **2. Intangible Cultural heritage**

According to the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage, the intangible cultural heritage (ICH) – or living heritage – is the mainspring of mankind’s cultural diversity and its maintenance a guarantee for continuing creativity. In the text of this Convention it is stated (Article 2) that Intangible Cultural Heritage is manifested, among others, in the following domains:

- Oral traditions and expressions including language as a vehicle of the intangible cultural heritage;
- Performing arts (such as traditional music, dance and theatre);
- Social practices, rituals and festive events;
- Knowledge and practices concerning nature and the universe;
- Traditional craftsmanship.

The 2003 Convention also defines ICH as the practices, representations, expressions, as well as the knowledge and skills, that communities, groups and, in some cases, individuals recognise as part of their cultural heritage.

The definition finally indicates that the ICH to be safeguarded by this Convention:

- is transmitted from generation to generation;
- is constantly recreated by communities and groups, in response to their environment, their interaction with nature, and their history;
- provides communities and groups with a sense of identity and continuity;
- promotes respect for cultural diversity and human creativity;
- is compatible with international human rights instruments;
- complies with the requirements of mutual respect among communities, and of sustainable development.

From the above, the importance of the connection of ICH to geographic location is of utmost importance. The ICH is traditional and living at the same time. It is constantly recreated and mainly transmitted orally. It is difficult to use the term authentic in relation to ICH; some experts advise against its use in relation to living heritage (see the Yamato Declaration <http://unesdoc.unesco.org/images/0013/001376/137634e.pdf>). The depository of this heritage is the human mind, the human body being the main instrument for its enactment, or – literally – embodiment. The knowledge and skills are often shared within a community, and manifestations of ICH often are performed collectively. The evolvement and preservation of ICH is affected by and dependent on the physical environment.

Many elements of the ICH are endangered, due to effects of globalization, uniformization policies, natural hazards and lack of means, appreciation and understanding which – taken together – may lead to the erosion of functions and values of such elements and to lack of interest among the younger generations.

The UNESCO Convention for ICH speaks about communities and groups of tradition bearers, without specifying them. Time and again it was stressed by the governmental experts who prepared the draft of the Convention that such communities have an open character, that they can be dominant or non dominant, that they are not necessarily linked to specific territories, but greatly affected by them and that one person can very well belong to different communities and switch communities. The Convention introduces, by establishing the Representative List, the idea of “representativeness”. “Representative” might mean, at the same time, representative for location, representative for the creativity of humanity, for the cultural heritage of States, as well as for the cultural heritage of communities who are the bearers of the traditions in question. (<http://www.unesco.org/culture/ich/index.php?pg=00002>).

### **3. Digitizing Intangible Cultural Heritage**

Digital technologies and the Internet offer nowadays unprecedented opportunities for the promotion, preservation, revitalization and protection of

intangible cultural heritage, such as traditional music, art, performances, symbols and designs. Many valuable initiatives are using these new technologies to record, digitize and disseminate databases of these traditional cultural expressions (<http://www.wipo.int/tk/en/folklore/culturalheritage/>).

Digitisation is an essential step aimed at preserving and promoting collective Cultural Heritage thus safeguarding cultural diversity in the global environment. Also it could improve the presence of the cultural heritage of a region on the Web, more in accordance with its contribution to the world's cultural heritage. Hence the relation to the geographic location arises. However, there are a number of barriers that could hinder reaching this objective such as fragmentation of approach and lack of synergies between cultural programmes and IT, obsolescence of formats and technologies, handling of intellectual property rights, lack of simple and common forms of access for citizens.

Digitisation is understood here as a collection of activities including, but not limited to: digital capture, transformation from analogue to digital form, describing and establishing representations of heritage objects -tangible or intangible- and documentation about them, processing, presentation and long term preservation of digitised content. To make digitisation initiatives truly successful, economic and sustainable over time, several elements have been identified by the EU Project MINERVA ([www.minervaeurope.org](http://www.minervaeurope.org)):

- a strong need for political, legislative and institutional strategies and for their harmonisation;
- a need for a stronger coordination at national and better exchange at regional level at policy, programme and project segments;
- integration of activities carried out by research and cultural institutions and integration of services provided by archives, museums and libraries;
- a need to develop awareness of the importance that cultural and scientific assets are catalogued before they are digitised, as knowledge of the heritage is essential for the correct interpretation of the digitised objects;
- a need for guidelines and examples of best practices in order to improve cost effectiveness and quality of the digitisation initiatives;
- The use of standards to support interoperability, accessibility, preservation and security needs in order to improve the wide usefulness, cost effectiveness and long term future of digital resources.

Nowadays the digitization of sound, still image and image sequences is feasible. As is their storage and management in electronic databases and in forms presumably retrievable in the future. The issue of guidelines standards has already been addressed by many researchers. However, there are a lot of different formats for the digitization of Text (XML, XHTML, Unicode, HTML etc), Image (JPG, JPG2000, TIFF, BMP etc.), Sound (WAV, MP3 etc), Video (MPEG, QuickTime etc.) and 3D content (VRML, X3D etc). At the same time research is being carried out on standards for metadata, inventories and terminology.

A very significant matter arising from the use of digitized products and especially Cultural Heritage items is the intellectual properties rights. The

World Intellectual Properties Organization's (WIPO) Creative Heritage Project is developing best practices and guidelines for managing IP issues when recording, digitizing and disseminating intangible cultural heritage. The project also comprises IT assistance, in the form of technical support for the recording and digitization of traditional cultural expressions, and the establishment of digital collections and websites, through which samples of the world's diverse traditional cultural expressions can be experienced.

UNESCO, on the other hand, has compiled a text of recommendations on preserving digital heritage ([http://portal.unesco.org/ci/en/ev.php-URL\\_ID=13366&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/ci/en/ev.php-URL_ID=13366&URL_DO=DO_TOPIC&URL_SECTION=201.html)). In this document several important issues are confronted:

*Intelligent use of new technologies:* It is recognised the important role that the new information and communication technologies can play towards a widespread diffusion of culture and knowledge. For this reason, cultural institutions and technological centres will be fostered to work together in developing expertise for an appropriate use of the new technologies with a special reference to the Internet and the Web.

*Cataloguing and digitisation:* It is recognised that knowledge of the cultural and scientific heritage is essential for taking decisions concerning its digitisation and for interpreting the digitised resources. For this reason, inventorying and cataloguing should precede or accompany the digitisation of cultural and scientific assets.

*IPR and privacy:* Importance of balancing the right of access to the scientific and cultural heritage with the need to respect Intellectual Property Rights and the privacy of the individual is recognised. For this reason, the adoption of all the available technical and legal instruments to improve accessibility and overcome legislative and normative barriers is encouraged. Dialogue between cultural and scientific sectors, IPR experts, companies implementing Digital Rights Management solutions and the Content Industries should be encouraged as well.

*Interoperability and standards, long term preservation:* It is of the highest importance that the digital resources produced are as widely interoperable, accessible and secure as possible. For this reason, the adoption of technical guidelines and open standards will be encouraged to enable the building of e-services that give integrated access to cultural and scientific heritage. The adoption of technical standards can support as well the durability and long term preservation of the digital resources created.

For the preservation of Intangible Cultural Heritage in the future, thorough study of its past and present is required. Digitization takes care of its recording and momentary documentation. However its evolvement through the ages is closely linked to location. This also will definitely contribute to the comparative study of ICH items as they are recorded in neighboring or even remote locations. Physical environment plays an important role to forming the character and the specialized characteristics of songs, traditions, local cuisine, dancing, customs etc. Hence a means for relating Intangible Cultural Heritage to place is sought and GIS technology is the obvious answer.

#### **4. Cultural Heritage Information Management Systems (CHIMS)**

The literature is not very rich in reporting efforts for connecting Intangible Cultural Heritage to geographic location. Kando & Adachi (N. Kando, J. Adachi, 2004) report that digitization of cultural heritage refers to the dynamic and evolving interdisciplinary domain that encompasses philosophical, social, cultural, economic and managerial aspects and consequences of management of cultural heritage in the technological environment. Digitization, which, in narrow terms, may be defined as conversion of information from analogue to digital form, has had a far-reaching impact on practical activities of libraries and other information institutions and services. Having started with series of experiments with information and communication technologies, the digitization concerns overgrown technical issues of conversion and expanded to cover the management of collections, mediation and representation of cultural heritage in the digital environment, economics of digital repositories, business models, quality and sustainability of digitization initiatives etc.

A Cultural Heritage Information System aimed at storing, managing and presenting items of Intangible Cultural Heritage, should be somewhat different than a normal Geographic Information System. Normally, information may be stored in a GIS in digital form as plain text, numbers or in extreme cases as images. In the case of a CHIMS, and especially when ICH is concerned, the information storage is realized in the form of images, image sequences (video), sound, multimedia presentations, 3D reconstructions and visualizations and perhaps other forms, which are highly demanding in computer space and computing power.

Moreover, in the case ICH items are stored in a CHIMS, special functions and database table relations should be developed, in order to enable the user to retrieve the information stored, but also to interrelate it and -most importantly- to correlate it with the geographic location. Of course spiritual achievements cannot easily be restraint to place, however it is from this very place that they evolved and they were developed and still bear its marks and influence. On the other hand the Place is comprised by its Location plus its Myth (i.e. Legends) plus its Word. In other words in the Place its verbal and historic tradition are included (Derrida, 1993).

As an example, for the preservation of Historic Complexes and specifically Historic City Centres, the advantage and simultaneously a major drawback is their inclusion into the aesthetics and the functionality of the greater complex of the city to which they belong. The integrated conservation, as it is mentioned in the Amsterdam Declaration, into a town planning framework is only feasible as a co-ordinated function. The creation of a dynamic management system is required, which will conserve the life of the old city part, while at the same time it fits into the modern environment. For this task it would be useful for the expert to have access to all those data, which constitute the contemporary structure and the profile of the city in

question. These data are required in order to enable the thorough study for the conservation with a proper analysis of the causes of its deterioration and for the planning of its protection, while at the same time protecting its contemporary uses. In this way the System, will become a powerful tool for the analysis and management of the Historic City Centre. The required thematic data may be grouped as follows:

- Natural space data, i.e. topographic maps, geomorphology, natural resources, climate, fauna etc.
- Built environment data, i.e. town structure, historic centre web, squares, open spaces, road and other networks, buildings and of course monuments.
- Social data, i.e. those special characteristics, which constitute the social form of a place and include its name, the population data, the religious beliefs, the sociological stratification, the activities of the population, their origin, language, age etc.
- Economic data, i.e. the productive activities of the population, their mean income, the property distribution, real estate matters etc.
- Cultural data, as they are inherited through history, mythology, religious traditions, literature, poetry, arts, local customs etc.
- Aesthetic data of the place, which contribute to the perceptual image and its creation and include light, colour, sounds etc.
- Legal framework governing the functionality of the Historic Centre.

In a management system the above information should be included in order to support any future decisions in the best possible way. 3D representations and Multimedia applications will definitely enhance this goal. Their contribution is still under research.

## **5. Concluding Remarks**

New digital technologies offer a practical means to document, record and digitize expressions of traditional cultures. Such means respond to the strong desire in indigenous communities to preserve, revitalize and promote their cultural heritage, and to pass it on to succeeding generations. However, the documentation and digitization of living traditions, which embody both communal creativity and individual artistic expression, is highly complex. Further, without careful IP management, digitized intangible cultural heritage is vulnerable to unwanted exploitation.

## **REFERENCES**

- Derrida, J., 1993. *Khora*, ed. Gallilee.  
B. T. Hoffman, 2005. Art and cultural heritage: Law, Policy And Practice. Cambridge University Press

Noriko Kando, Jun Adachi, 2004. Cultural Heritage Online: Information Access across Heterogeneous Cultural Heritage in Japan. International Symposium on Digital Libraries and Knowledge Communities in Networked Information Society DLKC'04.

Skrydstrup, M., 2006. Towards Intellectual Property Guidelines and Best Practices for Recording and Digitizing Intangible Cultural Heritage. *A Survey of Codes, Conduct and Challenges in North America*. World Intellectual Property Organisation (WIPO)

Web pages (last accessed July 2008)

<http://www.unesco.org/culture/ich/index.php?pg=home>

<http://www.unesco.org/culture/ich/index.php?pg=00002>

<http://www.wipo.int/tk/en/folklore/culturalheritage/>

[http://www.wipo.int/wipo\\_magazine/en/2008/03/article\\_0009.html](http://www.wipo.int/wipo_magazine/en/2008/03/article_0009.html)

<http://lorelle.wordpress.com/2007/12/10/protecting-cultural-heritage-with-blogs/>