Disseminating Digital Cartographic Heritage: standards and infrastructures

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Digital processes have introduced new horizons in the cartographic world. The impact in map production in the second half of the 20th century arrived also to the subject of history and cartography and map libraries. In fact, while researchers quickly adapted digital resources as an extraordinary way to look at ancient maps, map libraries are still in the way to define the new users/consumers of maps and designing new tools to search, visualize and download digital copies of its maps collections.

The enormous challenge for the new generations of map curators entering the 21st century is to cope with a technological revolution that is accelerating much faster than any of the stages experienced by their predecessors. During the 20th century great technical advances in the description tools were made: the hand-written inventories and catalogues coming from the 19th century were first typed and then introduced in word processors. We must highlight the great advance made in library techniques in the 1960's with the beginning of automated catalogues and the establishment of national and transnational cataloging standards.

But at the end of the 20th century the radical change came when the map stopped being a stable and fixed object to become an eternally unfinished process of gathering, transmitting and viewing data. The advent of digital supports, GIS tools and Internet in map libraries in the 1990s started to impulse a re-adaptation of cataloging. The digital process in cartography transformed the relationships and strategies among users, professionals and institutions.

There are a lot of transformations in process in our libraries. Now we want to focus our attention to the inputs in cataloguing maps coming from outside libraries. Not only libraries put maps on the net. When maps became digital appears the need, like other digital products, to describe the data, that is the metadata. The big change was that the cataloguer is not a librarian but is the producer of the data. The process of catalogation or metacatalogation is made at the beginning of the process, when the map is made, and not at the end of the process when the map arrives at the library because the concept of distribution also is completely different. However, in the last years, map libraries have begun to digitize and put on the web its collections. As a result, there are different sorts of map catalogs in the web: the ones made by producers and the others made by map libraries.

Different focus and different standards are used by both sorts of catalogs. While map producers develop their own structures based on "Spatial Data Infrastructures"; map libraries are going on with the standards of library contents. First ones use ISO 19115 and second ones use MARC21. This dichotomy causes some times perplexity at the map libraries and frequently is ignored by producers. Are we going to a diverging digital map catalogs?

The establishment of the Federal Government Data Committee in the USA at the nineties and the start of the project INSPIRE by the European Union in 2002 to make

standardized documentation of geospatial data transformed deeply the distribution of digital cartography in the web and introduced new dimensions, some times confusing to the map librarians.

But, what is a Spatial data Infrastructure? I take the definition from the web page of the Institut Cartogràfic de Catalunya : "A group of technologies, policies, standards and human resources that are necessary, in order to acquire, process, store, distribute and improve the use of geographic information". The series of initiatives to be taken in order that an SDI may materialize are:
· 	Implantation of mechanisms for the discovery, access and distribution of data by means of the network among suppliers, managers and users (clearinghouse)
· 	Establishment of standards
· 	Identification and development of the basic data that are requested most
· 	Publicization of the information produced by the Administration
· 	Agreements between organizations to produce information of common interest (IDEC:http://www.geoportal-idec.net/geoportal/eng/inici.jsp?pag=presentacio&home=s)

"To improve the use of geographic information" also include map libraries. What is the future? This institution, the Institut Cartogràfic de Catalunya is an example of the coexistence of this two ways of catalogation: on one hand there is the map library of Catalonia, a paper deposit with more than 300.000 sheets of maps from 15th to 21th centuries, as well as 340.000 aerial photographs and other mainly georeferenced documentation. At that moment the map library has more than 18.000 digital maps and photographs coming from digitized paper formats (not born digital). http://www.icc.cat/web/content/en/common/cartoteca/inici_cartoteca_pro.html

On the other hand, in 2005 was established by law the IDEC: the Spatial Data infrastructure of Catalonia as a platform to interchange and sharing spatial information through Internet involving all Public Administrations as the *Generalitat de Catalunya* (Catalan Government), the Spanish Government, Local Entities as well as other public and private institutions of Catalonia. http://www.geoportal-idec.net/geoportal/eng/inici.jsp. Both, the Map Library of Catalonia and the IDEC, with specific catalogs using different standards and not connected.

Is it possible to interoperate both initiatives? Do we have to do this? The interoperability between different Standards is not new. Some initiatives in the USA began to define crosswalks between FGDC and MARC21 in the mid- to late-1990s. Later on, a new metadata format, the Dublin Core, to define digital sets –not only maps– was included in these crosswalks definitions, when it began to be used to put maps in Internet not georeferenced. But the reality is that both ways, SDI and map libraries, run separately.

I want to put another question on the table: have the map libraries to store and catalogue maps born digital? How to do this? Or have map libraries to be museums of paper? using the words that the map librarian Patrick McGlammery pronounced in this institution in 1993 talking about the future of the map libraries on occasion of an IFLA congress celebrated here in Barcelona.

In the future a virtual user looking for a map, has to separate the maps born digital from the maps digitized from an analogical format? The dilemma it is not easy and to make decisions involved other professionals as well as map librarians. The challenge is here.

On March 2008 was established a Spanish Working Group on Cartographic Heritage in the SDI as a first step to study the question here in Spain. This group has representatives from Instituto Geográfico Nacional, Institut Cartogràfic de Catalunya, Universidad Politécnica de Madrid, Universidad de Zaragoza and Universidad de Valladolid. The objectives are to define a Spanish crosswalk between ISO 199115 and MARC21 as well as to introduce the IDE in the map libraries environment. Is in this way, that we decided to include in this ICA workshop a round table on the subject. We hope to contribute to define the easy way to work, to catalogue, to preserve and facilitate the access to Digital Cartographic Heritage.