

Evangelos Livieratos\*

## The challenges of Cartographic Heritage in the digital world\*\*

Dear Colleagues,

On behalf of the ICA Commission on Digital Technologies in Cartographic Heritage I wish to thank the Institut Cartogràfic de Catalunya and its Director **Jaume Miranda i Canals** for his confidence and hospitality and to welcome you all, especially the colleagues who came from the other side of the Atlantic to be with us in this Workshop. A special thank goes also to the Vice President of ICA my colleague **Georg Gartner** who despite his heavy duties as the new Dean of his faculty at the Technical University of Vienna found the time to come, before the European football final at his home city. I wish also to welcome and thank two fellow colleagues from my own University, the AUTH<sup>1</sup>, who joined the Workshop and sponsored its organization, the former AUTH Vice Rector prof. **Kaltsikis** and the President of the Hellenic Cartographic Society prof. **Myridis**, both cartographers and friends.

“Cartographic Heritage”, as a regular working terminology, entered officially the glossary (vocabulary) of the international cartographic community in 2005 when the ICA Executive accepted the proposal for the formation of a relevant Working Group, during the A Coruña International Cartographic Conference<sup>2</sup>.

From the beginning the term was coupled with “Digital Technology” not only to comply with the ICA technology tradition but also to serve as a bridge connecting the cartographic and mapping past with its present and future.

I recall some few reservations expressed at that time during the initial discussion at A Coruña. The argument was that since within the ICA and outside the ICA existed already structures dealing with “History of Cartography” it was a redundant repetition the establishment of the new structure.

It was obvious that in the origin of this reservation was mainly the misunderstanding or misinterpreting of the term of “heritage” and its substance. It was obvious that “heritage” was confused with the term and substance of “history”. And of course, in a certain extend, this shortcoming was not surprising because we have to accept that many people are not in general so familiar with the concept of “heritage” as they are with the concept of “history”.

Fortunately the persons who took decisions in ICA could recognize the difference and the new Working Group on “Cartographic Heritage” was born at the west extreme of the land of Iberia, almost three years ago, embedded in the immense domain of modern digital information and communication technologies.

The Working Group from its start was active in clarifying and promoting first of all the notion of “Cartographic Heritage” and its constituents and then in identifying and classifying from the digital technologies cistern the proper and relevant tools, systems and methodologies.

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\*\* Introductory speech at the 3<sup>rd</sup> International Workshop on *Digital Approaches to Cartographic Heritage* held at Institut Cartogràfic de Catalunya, Barcelona 26-27 June 2008.

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<sup>2</sup> The term “Cartographic Heritage” was used originally by E. Livieratos and M. Myridis in 1999 during the 18<sup>th</sup> International Conference on History of Cartography held in Athens.

A second concern, but indeed important, was the broadening of the composition of this Group with colleagues coming not only from the world of cartography in the large, but also from the worlds of the libraries, collectionism and institutions dealing with the culture of maps, where archiving, conservation, restoration, management, visualization, access, diffusion, networking and communication are of vital importance as well as the research on map content. I think that we are successful in this effort as the broadening of our audience is now evident!

A number of interested and active colleagues gave the Group shape from the very beginning and the First Workshop held at the Byzantine Museum of Thessaloniki in 2006 was the promising test hosting a multidisciplinary group of participants. This event was reported in the ICA News, June 2006 and documented by the Group members **Marcus Jobst**, **Bernhard Jenny** (in German: Cartographica Helvetica), **Ferjan Ormeling** (in Dutch: GEO-INFO), **Mira Miletić Order** (in Croatian: Kartografija i geoinformacije) underlining of course **Chris Fleet**'s extended review in *Imago Mundi*, (Vol. 59, part 1).

At the same year colleagues from Italy and Greece supported by colleagues from France and The Netherlands established “**e-Perimetron**” a free of charge international web journal dedicated to sciences and technologies affined to history of cartography and maps. From the very beginning the idea was to assist the Working Group and work in parallel, promoting mainly the new digital technologies in cartographic heritage. The two volumes of the journal count more that 600 pages with numerous links in very many university libraries in all continents around the World.

In 2007 the Second Workshop was held at the National Research Foundation in Athens jointly with a Forum on the emblematic Rigas Velesinlis Charta, the cartographic monument of Greek Enlightenment from the late 18<sup>th</sup> century, as part of the domestic celebrations for the 250 years from the birth of Rigas Velesinlis, the major figure among the fathers of the Greek national Resurgence of 1821. This event is the starting point for the advancement of new research on this major map of the southeast European cartographic heritage, which is still unknown internationally.

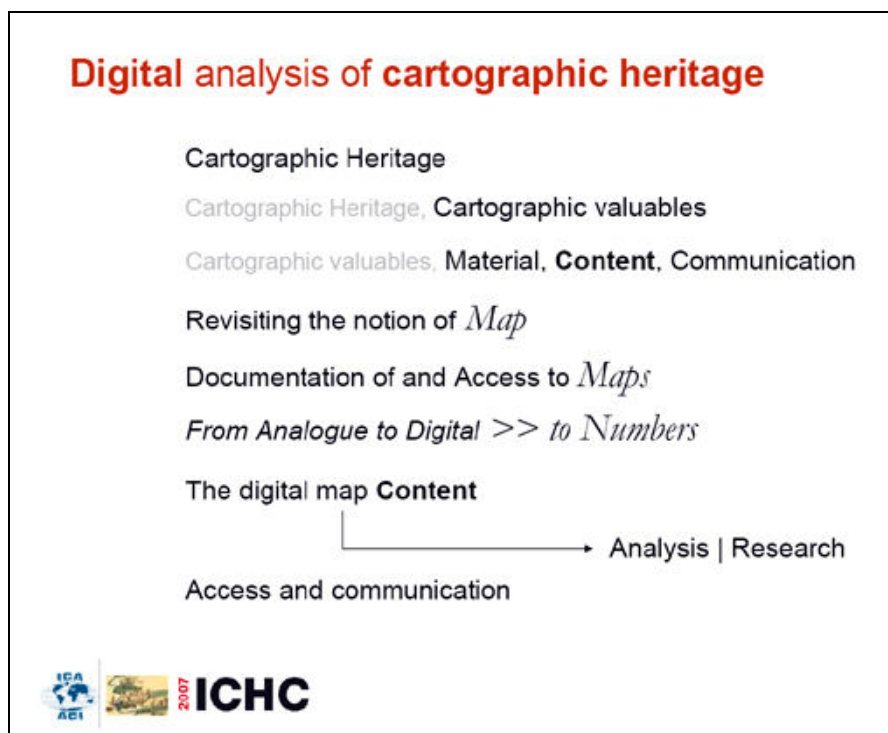


Fig. 1.

The philosophy of our Group was then presented by the Chair in an invited talk at the ICA seminar organized by Prof. Ferjan Ormeling in the frame of the 22<sup>nd</sup> International Conference on History of Cartography at Berne last year, focusing on topics shown in Fig. 1<sup>3</sup>.

At that introduction the concept of “cartographic valuables” was given as the important huge backlog of maps, atlases, globes and the associated images and textual material which constitute an important part of the Cultural Heritage deserving a discrete place in the World’s overall cultural heritage and the necessary care and forethought.

This backlog consists of 2-D and/or 3-D **objects** (let us call them all as “maps”) which are defined, classified, evaluated and managed according to their **material** constitution, geometric and thematic **content** and **communication** power (Fig. 2).

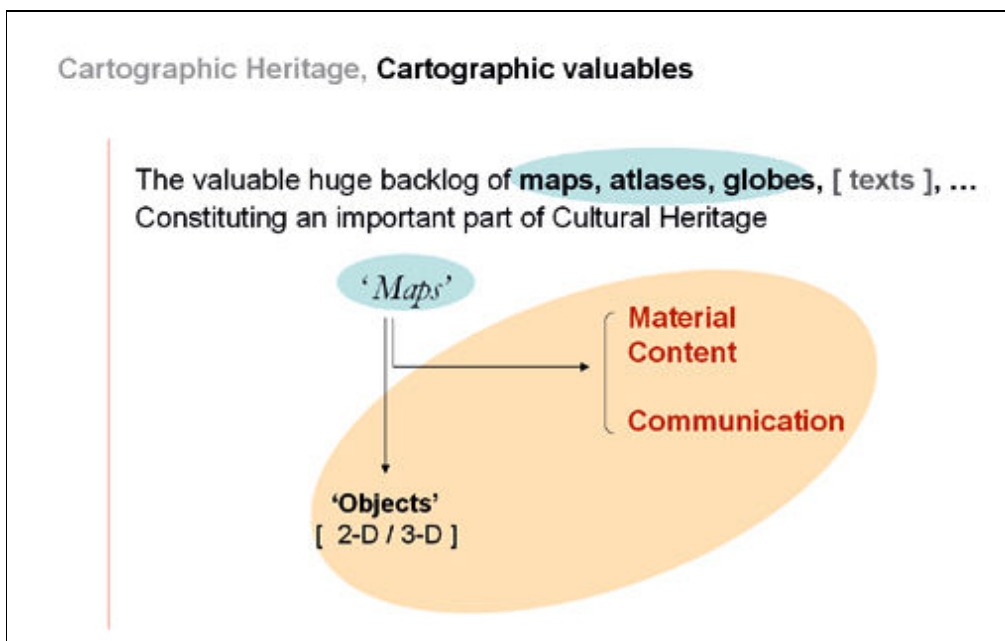


Fig. 2

As 2-D and/or 3-D valuable objects belonging to the backlog of cultural heritage, “maps” are naturally subject to proper and accurate pictorial representation preferably in 1:1 scale, which is done today almost entirely by digital means without underestimating at all the high quality non-digital tools which in certain conditions could offer reliable results. The well known technologies in mapping sciences as it is the contact and non-contact digital plane scanning and the 3-D counterpart, the non-contact digital photography and the stereo counterpart are or could be used extensively in the geometric documentation of “maps”.

Of course, since digitization affects the “map” **material**, its **content** and its **communication** properties a number of questions follow, especially in the desirable and feasible 1:1 scale. Questions concerning the **vulnerability** of the “map” under digitization of any type, the given **dimensions** of the digitization carrier with respect to those of the “map”, the geometric **deformations** induced by any digitization process, the **scale** alterations of the digital copy, the difficulties and problems in the eventual need for **stitching**, the necessity for preserving as close as possible the **colour** reliability of the digital copy and last but not least the final digitization **cost**, the unforgettable and painful parameter in this process.

<sup>3</sup> The power point presentation (in pdf file with a short video attachment) is included in the Workshop’s CD-ROM with all contributions.

In the pre-digital tradition of the so-called “analogue era”, the documentation of and the access to “maps” was done separately for the **material**, for the **content** and for the **communication** components. The conservation, preservation, restoration and protection of the **material**, the study of the **content** and the access, diffusion and dissemination in the **communication** process were all single and more or less isolated actions spreading the efforts and requiring the consumption of resources and time.

In the digital tradition the domain of treating the **material**, the **content** and the **communication** of “maps” as objects of cultural heritage, is unique. It unifies the approaches changing thus radically the philosophy in treating within the same digital domain issues like the conservation, preservation, restoration and protection of the **material**, the study of the geometric and thematic **content** and the access, diffusion and dissemination of “maps” in a **communication scheme**. And this is a real challenge never experienced before (Fig. 3).

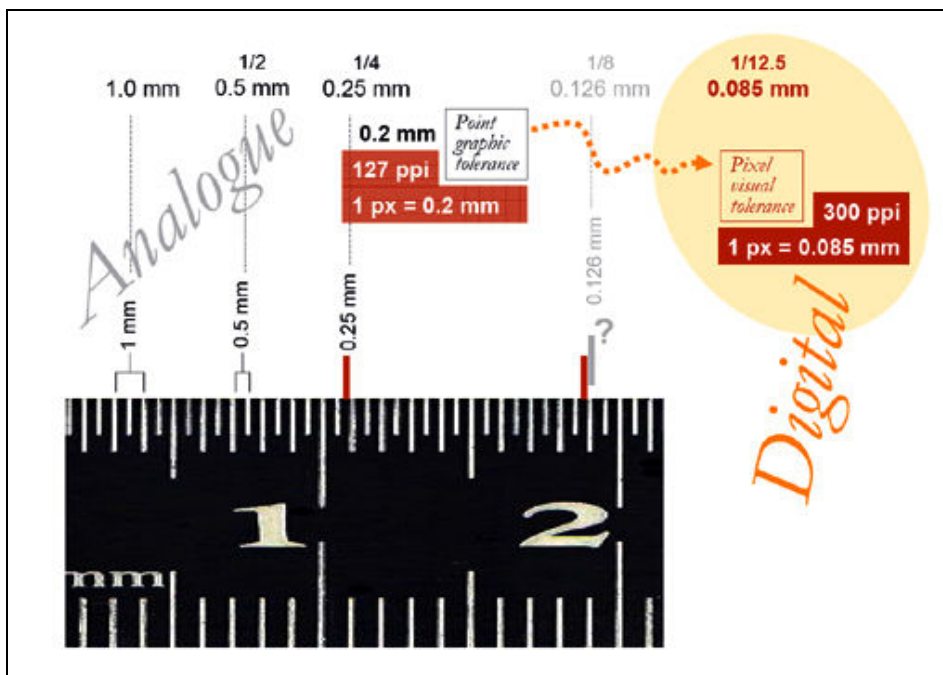


Fig. 3

But what stands decisively behind this philosophy? Of course the need for a proper **digitization**, with the real meaning of the word which has nothing to do with the general term of “scanning” and/or “photo-capturing” even if the result is a digital product as well.

Real digitization means that a **point** on the “map” retains on its digital image **as close as possible** the original “geometric” and “physical” properties. In poor words the original “position” and the original “colour”.

As you can imagine a new complication is entering into the picture. What we mean by saying “a point” and what we mean by saying “as close as possible” in order to approach real digitization instead of just scanning and/or photo-capturing maps. The answer is obvious related to **quality**. The quality of know how, of expertise, of brain-ware and certainly of hard-ware.

If digitization looks as an important assisting tool for approaching the **material** of “maps” for the needs of conservation, preservation, restoration and protection, it is *condicio sine qua non* for the study of the **content** of “maps” as carriers of “geometric” and “thematic” knowledge and information. Here, both

“geometry” and “thematics” are referenced to coordinates (of any type<sup>4</sup>) and the digital route is one-way (Fig. 4). A number of possible items for new research on “maps” can then be listed, from rectification and stitching to geo-framing and geo-referencing, from deformation and scale analysis to comparative studies using best-fitting techniques, from the analysis of coastlines and map-projections to the analytic mapping and representation of globes plus an almost endless list of implementation of whatever thematic content of “maps” (Fig. 5).

Although the **material** and **content** issue of Cartographic Heritage in the digital domain are important engaging mainly experts and dedicated people, the **communication** component is of major interest because it is addressed not only to experts and dedicated but also and mainly to the broad general public. Needless to say that communicating cartographic heritage is indeed a social action.

Questions on access, diffusion and dissemination of the properly archived “maps” are of major concern to the great community of colleagues working in public and private archives and map libraries managing important map collections. The World Wide Web and the digital culture which is constantly propagated in the society and in the institutions thanks to the younger generation open new horizons to the up to now underestimated culture of cartography and maps in their multiform aspects as products of human perceptiveness, art, skill, history, ideology, geography, geometry, science, technology and power.

New concepts, like the distinction between **knowledge** and **information** which is crucial in the digital thinking, especially as far as **communication** is concerned, introduce **weight** criteria in the networking of the access and define levels of availability in communicating cartographic and map heritage (Fig. 6).

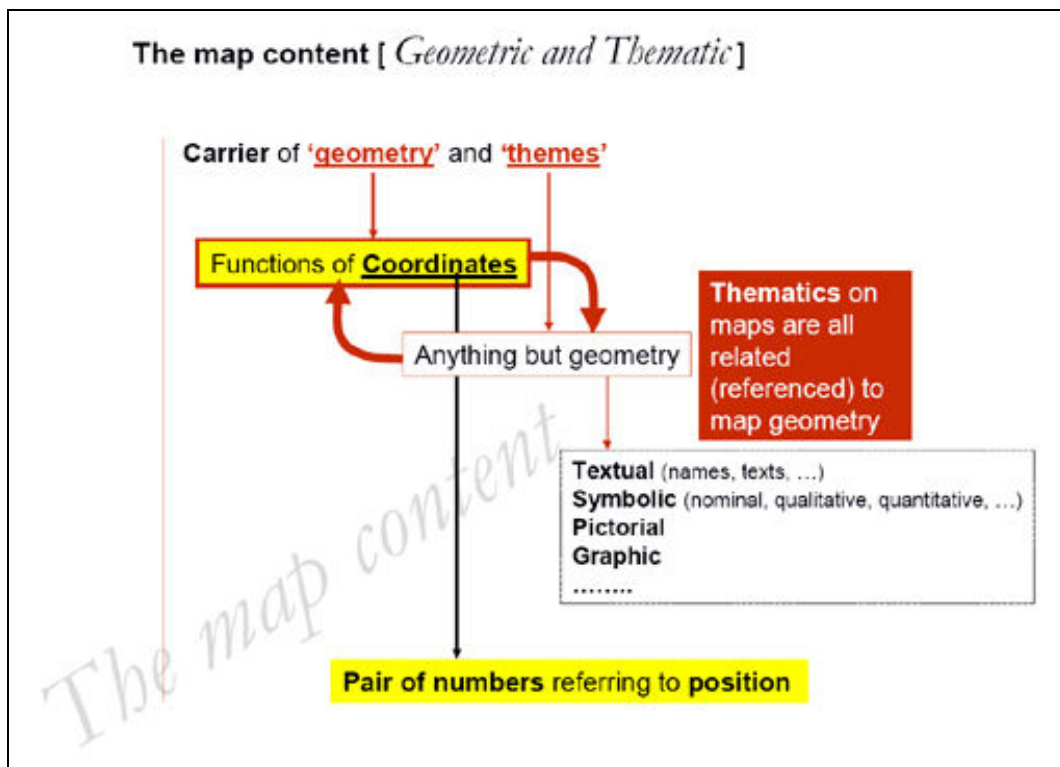


Fig. 4

<sup>4</sup> Geographic, plane, pixel coordinates, etc.

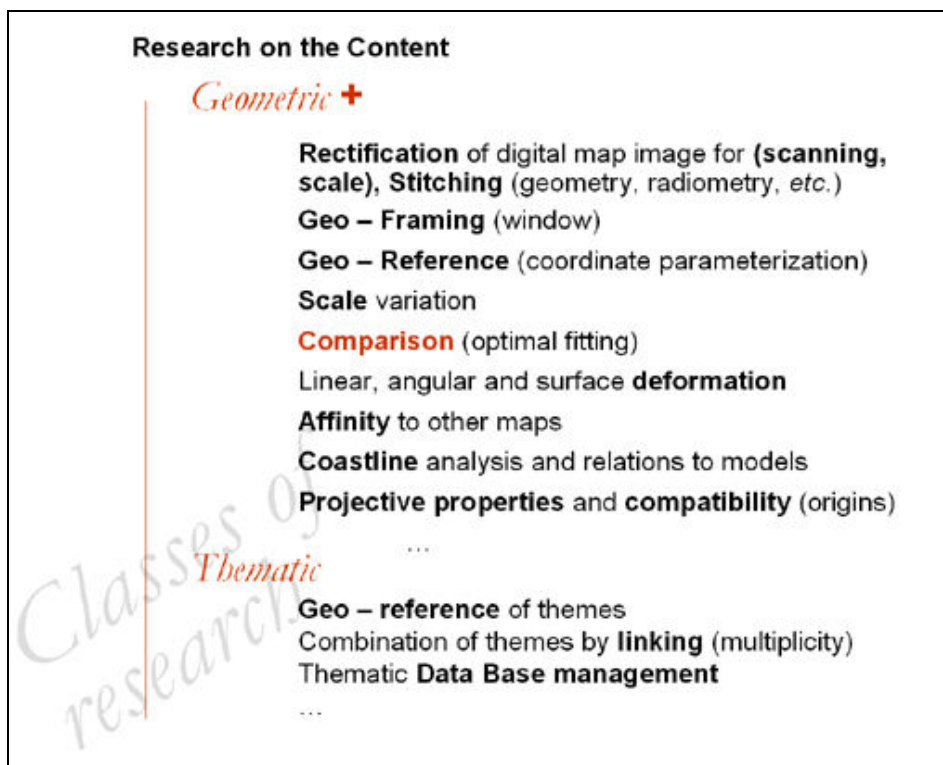


Fig. 5

In situ and web providers of cartographic heritage are now looking for a better communication management, understanding first the nature of the material to communicate and then getting profit from the continuously developing know-how, brain-ware and hard-ware in the digital (Fig. 7).

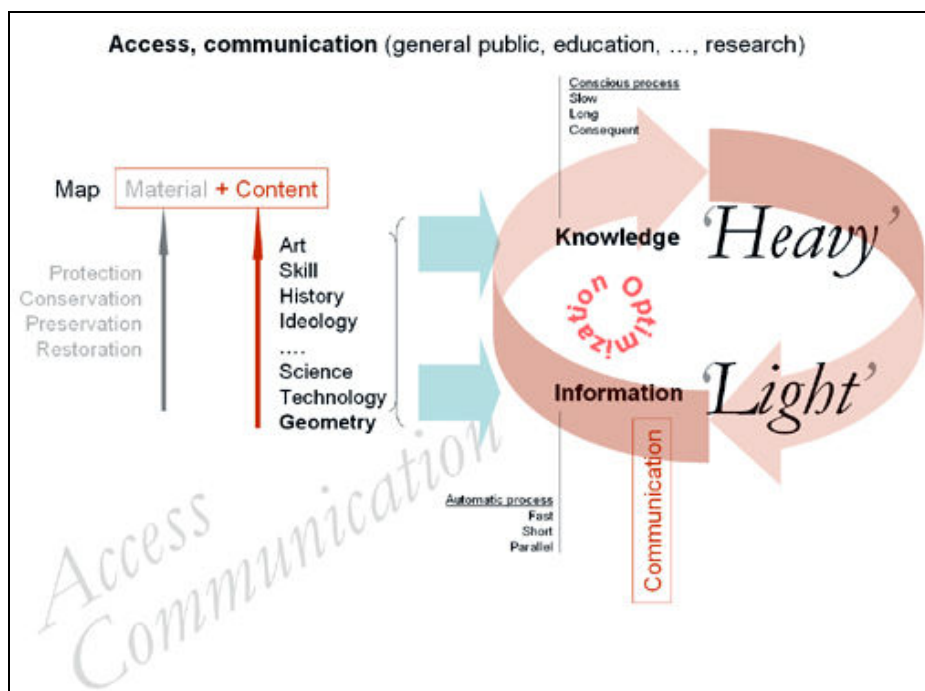


Fig. 6

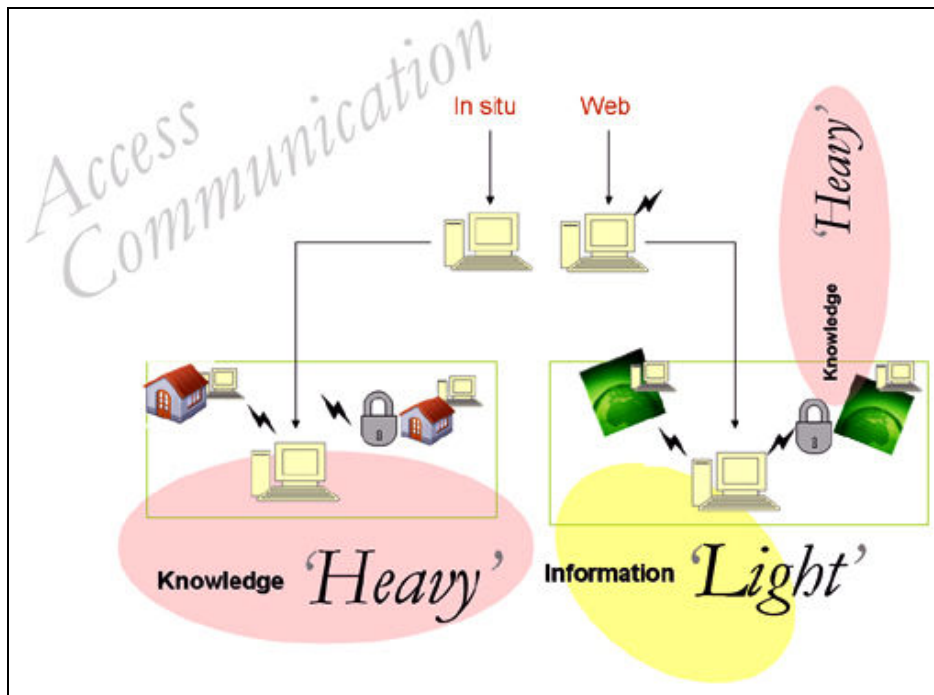


Fig. 7

The Third Workshop, here in Catalunya at the Mediterranean coasts of Spain, looks to be a turning point in our vision, organization and work.

- **First**, because meets the ICA Group --established three years ago in Galicia at the Atlantic coasts of Spain-- in the promoted status of an ICA Commission. The new Commission carrying the same name was established in Moscow on August 2007 by the ICA General Assembly;
- **Second**, because it looks now that the confusion caused three years ago by the use of the term “Cartographic Heritage” in distinction to “History of Cartography” has been definitively resolved. This is a quite natural consequence since the issue is already clear when talking about the difference between “History” and “Heritage” in the large. Christopher Chippindale<sup>5</sup> gives a clear and up-to-date advice supporting this distinction “...*heritage, in contrast to history and archaeology [is defined] as the place of the past in the present*” or “...**heritage is about the past as it is seen and understood in the present**” or “...*heritage is the past in the present so the judgments of the present actually decide, but since it is about the past, those knowledgeable about the past are supposed, or suppose themselves, to be in charge of it*”.
- **Third**, because from the organization and the content of the sessions it is shown that the work of the Commission converges to concrete references points;
- **Fourth**, because the pluralism in the background of the participants is the best proof that our initial estimate on the expected acceptance of a new structure on cartographic heritage was not random;
- **Fifth**, because the young people are still present and active;

<sup>5</sup> Chippindale, C., 2007. “The oldest heritage: Mediterranean Classical, in a view from the north, and the heritage model it has created”. In: Antoniadou S. and A. Pace (eds.) *Mediterranean Crossroads*, Athens: Pierides Foundation, pp. 741-767.

- **Sixth**, because the increasing interest from the world of enterprises in constructing and adapting digitization tools, in archiving management, in providing know-how, is a promising indication for future partnerships and interactions with the academia and the world of libraries, and
- **Seventh**, because we happily experienced a new type of joint preparation of an international meeting thanks to our colleagues here in Barcelona, at the Institut Cartogràfic de Catalunya. It was based exclusively on e-mails, without a single problem or any other difficulty at all. With about 20 e-mails in a period of almost 6 months exchanged between three to four persons from Thessaloniki to Barcelona and the opposite direction we organized this Workshop in simplicity, confidence and spontaneous understanding inaugurating a model of cooperation which is not so usual in Europe or at least in its Mediterranean part!

I look forward to repeat and extend the experience!

In conclusion I would like to express my sincere and warm thanks to **Carme Montaner** Head of the ICC Map Library, **Raffael Roset** responsible of the digital sector and their colleagues who efficiently assisted the organization. My thanks go also to my doctoral students **Maria Pazarli** and **Angeliki Tsorlini** for their tireless contribution and support.

Enjoy your stay in Barcelona!