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Historical cartography in archival contexts: new technological perspectives

Summary

The paper wants to provide a contribution for the study and the promotion of digital approaches to historical cartography in a specific context like the historical archives. The paper aims at focusing on the Hyperborea's computer technology solutions for the on-line integrated valorisation and fruition of cultural heritage, in particular the historical cartography. The leitmotif of the paper is the promotion of a digital approach to historical cartography within the field of an archival context.

Hyperborea for the Cultural Heritage

Hyperborea is an Italian SME based in Pisa. It has been founded in 1995 by high level professionals in both Computer Science and Humanities, with extensive experience in new methodologies for management, preservation, and communication of ancient manuscripts, works of art, etc.

The production department represents an high value feature of the company: it currently has more than 30 employees and it is divided into two groups. The first one includes IT professionals while the second one includes specialists coming from humanistic application fields. The two groups share a common entrepreneurial model which has given over recent years a great experience in numerous cutting-edge techniques and methodologies and the necessary scaffolding to collaborate with many national institutions (such as Municipalities, Provincial and Regional Authorities, Environmental Agencies, Fine Arts Government Offices and National Archives) and with national and international companies.

The production department has a long history of co-operation with Research centres and Academic institutions (including the Scuola Normale Superiore and the Sant'Anna School for Advanced Studies in Pisa).

Hyperborea's expertise for the cultural sector is focused on the definition of innovative descriptive models and on the development of systems and products for the integrated management of information, according to widely acknowledged international standards. Hyperborea has achieved a pre-competitive technological maturity over the recent years, focusing primarily on developing innovative solutions closely related to the reference market and sector. In order to promote its technical offer, Hyperborea's "know-how" can be applicable to the following fields:

- Historical archives;
- Repository archives;
- Museums;
- Libraries.

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On-line fruition and consulting

During the last year Hyperborea s.r.l. focused on specific scenery of cultural heritage market: the fruition and consulting on the Web of cultural heritage.

On the one hand the company's activity has analysed and studied the perspectives that could be offered by the national and international market, in order to satisfy needs as the integrated consultation of very important cultural material. On the other hand the analysis has been supported by an intense activity concerning the development of technologically innovative solutions for the on-line visualization and browsing of high resolution digital reproductions of cultural heritage (documentaries, archival, artistic and cartographic) preserved in Archives, Museums, Art Galleries and in other places.

The main results of applied methodologies, analysis and planning, have led to the creation of an integrated offer for the archives' market (depository and historical ones), for the museum's market and for the cartographical one: two products, which are distributed on a national scale, AriannaWeb and E-maps, and DIVENIRE a project of strategic importance under the entrepreneurial point of view.

AriannaWeb, E-maps and DIVENIRE represent Hyperborea's contribution for the exploitation of historical cartography, in order to attain new technological perspectives and digital approaches.

Hyperborea's marketing offer for th historical cartography

After the general presentation of Hyperborea's competences on the field of cultural heritage, we will pay attention to the offer for the digital administration and exploitation of cartographical material and historical cartography.

The analysis of Hyperborea's offer can be made on more than one level: the presentation of products and projects for historical cartography and the technological features the various projects have in common. The three levels are connected by the general topic of digital approach to cartography, and by the more specific topic about technological innovation, to exploit the historical cartography in archival contexts.

e-maps

E-maps is a "software web based" for the publication, consultation and e-commerce of high resolution digital reproductions of cartographical material: books, atlases, antique maps. This software has already been presented during the last workshop, organized by ICA, "Digital Approaches to cartographic heritage", at Barcelona during the month of June 2008. E-maps' concrete application, Mapsandimages (www.mapsandimages.it), is a product which is completely dedicated to the typical collector and maps' user, to all the people who work with historical maps: it is useful for the virtual consultation of a great deal of cartographical material of different kinds. This product satisfies the consultation of high resolution images directly from your pc and through every kind of browser. Comparing this version to the one of 2008, an innovative element is the system of e-commerce for purchasing the digital images.

Figure 1. Screenshot of E-maps, www.mapsandimages.it

AriannaWeb

AriannaWeb was born as a "solution web based" for the exploitation of documents preserved in depository or historical archives. It allows the publication on the web of archival descriptions, in textual form or with a link to the images related to the archival units. AriannaWeb is functional for the publication of high resolution digital reproductions that are archival units represented by cartographical material. AriannaWeb is the archival approach to cartography: it has been thought to support the archives in the promotion of their cultural heritage and to offer a virtual platform for any consultation. In AriannaWeb the documents and maps can be consulted through a navigation, which reproduces the typical structure of archives. This structure allows the studious to put the cartography in its context of production and preservation.
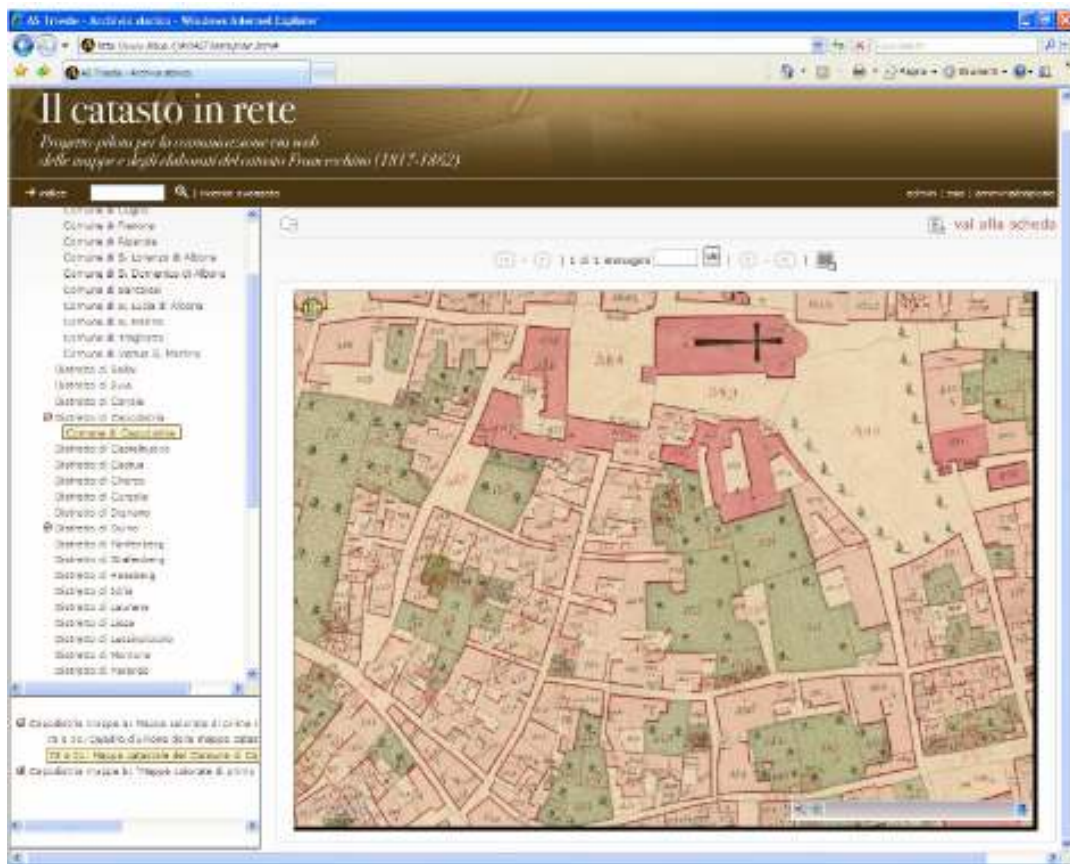
Figure 2. Screenshot of AriannaWeb applied to the National Archives of Trieste.

DIVENIRE

DIVENIRE is a project that has been developed by Hyperborea for the National Archives of Venice. It represents an integrated system for the consultation of the archival images and for the filing of documents: so it functionally supports the consultation of the cartographical material inside the archives.

This project represents a mixed approach for the exploitation and fruition of historical cartography. E-maps is conceived for the typical collector and it guarantees a contextual visualization of maps and atlases, presented as a real virtual collection. AriannaWeb, with its virtual reproduction of archival structure, allows consulting the virtual cartography in its funds, series and archival units. DIVENIRE allows visualizing and consulting the cartographical material as a collection; this material is also arranged in the archival context, the National Archives of Venice. This mixed approach is guaranteed by particular functionalities of the technological structure. The user can consult a map and open the "collection" whenever he wants; starting from the visualization of the cartographical material it is always possible to find the archival collocation of a map or a document inside the archival funds of the Institution in which it is preserved, in this case the State Archives of Venice.

This double possibility of visualization (of the collector or the simple user on the one hand, and of the archivist or intellectual on the other hand) justifies the digital approach to cartography in an archival context; DIVENIRE has a structure thought for the fruition of the material preserved in archives, and it offers the possibility of a visualization that is typical of a completely cartographical approach.

The second perspective offered by Hyperborea s.r.l. for the visualization of historical cartography represents the point of contact of these three solutions; it allows a digital approach to the cartography. On the one hand these three solutions permit the visualization of cartographical material thanks to the publication of high resolution digital reproductions; they are adaptable to various contexts and needs. On the other hand they share a common technological platform: the system of visualization IIPImage. IIPImage is a technology developed in open source environment that allows the visualization of high resolution digital images and it permits to admire every detail of works of art, historical maps, antique documents, parchments. IIPImage has a dynamic and efficient system of visualization: the server gives in few seconds a little portion of the image, assuring high qualitative standards of visualization and adapting itself to any connection speed and bandwidth.

IIPImage represents the connection of three different solutions, thought to satisfy three different needs in the field of historical cartography.

Conclusion

This paper illustrates Hyperborea's digital approach to cartography. The general idea is to analyse technological innovations, underlining how the new technologies of information and communication can contribute for the protection, preservation and promotion of cartographical material. We have focused on the public access to cartographical material. An innovative virtual access is guaranteed by instruments that permit a free and dynamic consultation of any kind of material and that contribute for the spread of knowledge about cartography across Italy and Europe.