IBC WEB SITE: a multi-purpose site developed from W2000 model

Maria Pia Guermandi [*]

[*]Istituto Beni Culturali della Regione Emilia Romagna, Bologna (Italy)
E-mail: MPGuermandi@ibc.regione.emilia-romagna.it

ABSTRACT
Istituto Beni Culturali (Institute for Cultural Heritage) is the cultural institution of Regione Emilia Romagna. IBC web site [6] has been completely revised in cooperation with Hypermedia Open Center [5], the laboratory of the Electronics and Information Department at Politecnico di Milano. We adopted W2000 model for requirements analysis and for the analysis and organization of the application content.

KEYWORDS: cultural heritage, W2000 model, multi-purpose web-site

INTRODUCTION
The Istituto Beni Culturali (IBC), founded in 1974, is a cultural institution belonging to the Region Emilia Romagna. IBC acts as a research and advisory body to the Region and to local authorities: among its tasks are the cataloguing and safeguarding of cultural property, restoration works, the funding of and the consulting to libraries and museums (in particular to local authority ones) in Emilia Romagna. Ibc is a reference point at national and regional level in the domain of cultural heritage.

The IBC web site has been on-line since 1996. As far as the information available, the IBC web site is similar both to other museum web sites, and to those of research institutions operating in the same fields. It can therefore be regarded as a multi-site, both for its content, and for the audience it addresses.

The contents include general information on cultural events taking place in the region (exhibitions, conferences, presentation of books, restoration works, etc.), as well as information concerning the activities carried out by IBC, on-line publishing (IBC magazine, proceedings, etc.), and also the access to databases (textual information, images, and GIS), pre-information on upcoming conferences, management of museums and library projects.

In the last months our web site has been completely restyled and reorganised in cooperation with Hypermedia Open Center [5], the laboratory of the Electronics and Information Department at Politecnico di Milano. We are trying to explore and employ new patterns of technology-based communication for Cultural Heritage. Methodology used to structure our site is W2000 model as defined by HOC [1, 2, 3, 4].

REQUIREMENTS ANALYSIS

We have analysed IBC web site users profile adopting W5+ model [1]. As many cultural applications, our web site has a large variety of potential users with different needs and expectations. According to W5+ model, we have tried to identify the general purpose of the web-site for each user category and which specific tasks should users perform with the systems to achieve their goals.

We can resume IBC web site main goals according internal expectations, as:

- to acquire a larger visibility for all IBC activities which until now are known only by a restricted number of specialists.
- to promote IBC events (exhibitions, conferences, seminars) to the largest numbers of web users at regional and national level.
- to promote new technologies - in particular web technology - use as a more effective work tool for IBC internal researchers.

As regards as internal constraints, main characteristics IBC new web site should have are:

- easy upkeeping, because our web staff is very limited in resources and people.
- easy updating, because we have new materials to publish almost every day.

Moving from these internal objectives and constraints we have identified two main typologies of users:

- user with generic cultural interests (one specific subset of this typology is represented by schools as web users)
- highly specialised group of users *internal* (IBC researchers) and *external* (librarians, museums curators, cultural heritage operators in public administrations)

For the first typology we have to provide an informative and educational application to inform users about IBC content and activities.

For the second typology we have to create a web site research-oriented and work-oriented. This analysis (which I've heavily resumed) has helped us to structure and to present the information content and in particular to provide useful paradigms of information access (e.g. free and index navigation for the first user typology, query- based access and intranets services for the second one). In this way, on the same semantic domain we have tried to provide different views of the content structure or different functionality to better address specific users and client goals.

HDM - HYPERMEDIA DESIGN MODEL

Hyperbase

To translate this requirements into appropriate design choices, according to HDM Model [2, 3, 4], we have defined our site conceptual design in two main stages.

We have defined the structure, i.e. the organization of the application content and the dynamics, i.e. the application behavior.

In the first stage we have identified our **hyperbase** which is the set of information objects: every information object is an **entity** of hyperbase.

Entities types identified for modelling of IBC web site are the followings:

- IBC Institution
- EVENTS (exhibitions, conferences, presentations, ecc.)

- PUBLISHING (books, CD-Rom, on-line proceedings, IBC review)
- WEB EVENTS
- INSTITUTIONAL ACTIVITIES
- DATA BASES
- Next step, we have defined semantics associations between entities and navigation paths in the Hyperbase.

Access structure

Project second stage has been the identification of access structures with which is possible organize the same information objects, i.e. the same entities, in different ways according to different users typologies and requirements. In this stage we have defined **collections,** i.e. the sets of information objects creating a cognitive context. According to multi-purpose character of our site, we have choosen to provide a large number of collections narrowly focused.

Collections in which our site is structured, are the followings:

Fig. 1 Home page

- HOME PAGE (Fig. 1)
- NEWS
- DOMAIN / AREA OF INTEREST
  1. Libraries and archives
  2. Museums and cultural heritage
  3. Natural and architectural heritage
- CALENDAR (Fig. 2)

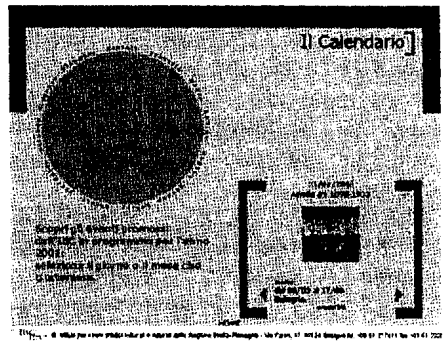

Fig. 2: Events calendar

- EVENTS
  1. Exhibitions
  2. Conferences, courses, seminars
  3. Presentations and other events
- PUBLISHING
  1. Books
  2. CD-Rom /Video
  3. Proceedings and exhibitions catalogues
  4. IBC journal (Figg. 3, 4, 5)
- EDUCATIONAL
- SCHOOL MATERIALS
- WEEK TOPIC
- PROJECTS
- DATA BASES
- LAWS

As you can see, we have defined not only **base collections** (i.e. collections of objects of our Hyperbase), but also **higher collections** (i.e. collections of other collections, as, for example, "DOMAIN", or "EVENTS")

Collections are often split up according time breaks (for example past / current / upcoming exhibitions, recent / past years publications).

We have defined application usability for each of our user typology, so access

structure and navigational path could vary according to user profile (Fig. 6).
According to multipurpose character of our web site, access to hyperbase information is highly structured: in this way the same information unit is accessible from different collections. For example the information objects about an archaeological exhibition could be reached from following collections:
CALENDAR - NEWS - AREA OF INTEREST (*museums and cultural heritage* - events) - EVENTS - PUBLISHING (*exhibition catalogue* and *IBC journal*) - SCHOOL MATERIALS.

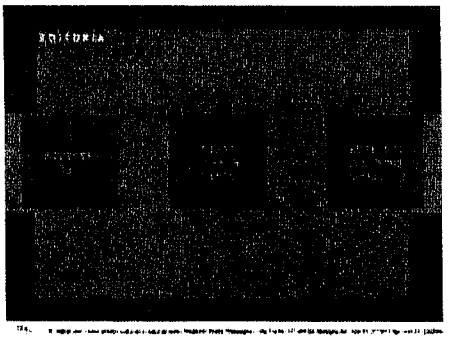

Fig. 3: Publishing Center of Collections

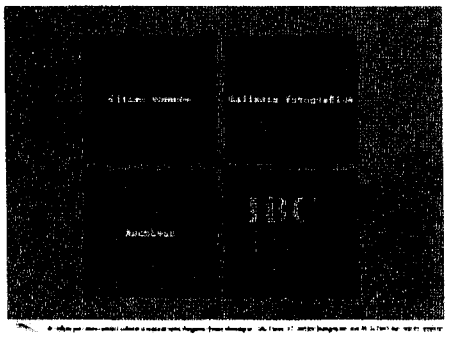

Fig. 4: Publishing. Collection: IBC review

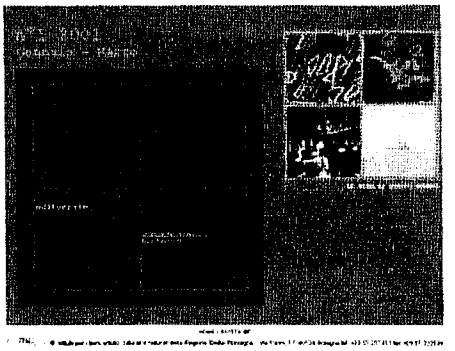

Fig.5:Publishing.Collection member: IBC review issue

Our web site proposes also a number of services like forum, contacts, newsletter: IBC web site user can also send new messages in a choosen forum or register himself in a newsgroup.
To promote internet as a daily work tool we have developed also "areas jobs" restricted to specific user groups (librarians, museum curators, internal researchers) by means of which it will be possible organize a conference or discuss and draw up an administrative deed or simply share projects documentation.

TECHNOLOGICAL TOOLS

To edit our site we have used software tools which characteristics of flexibility and easy maintenance.
To develop Hyperbase from technological point of view we have used Highway, a software tool for the implementation of database. Our databases objects are Hyperbase entities we can search and reorganize in different ways. Highway uses an Information Retrieval System architecture.

As software of editing we use a standard as Macromedia Dreamweaver with which we have developed access structures specialized that make specific queries on our Hyperbase databases.

ACKNOWLEDGMENTS
Current release of IBC web site has been created by the author, Maria Elena Barbieri and Maria Elena Tosi in cooperation with HOC laboratory.

CONCLUSIONS
First stage of new IBC web site planning has been the analysis of old site through reverse-engineering process. This analysis has stressed out a lack in information organization and an insufficient use of access structure. As in many complex interactive applications our web site quality is related to how well it matches the requirements of its potential users: at present we think that our weak point could be usability for specific users group (for example librarians), so in the future we have to improve tools as area jobs.
IBC new web site is on-line from July 2001 in a demo release. In following months we are testing our site with a defined group of users (internal and external) to verify if our main objectives have been - totally or partially - reached. In cooperation with Hypermedia Open Center of Politecnico this group should evaluate IBC web site usability.

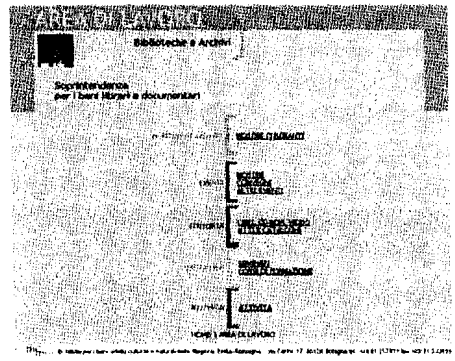

Fig. 6: Area of interest: Libraries and archives

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ABOUT THE AUTHOR

Maria Pia Guermandi: since 1987 she has been working at Istituto Beni Culturali of Regione Emilia Romagna where she has been involved in several research projects about applications of new technologies to cultural heritage as project leader (main areas of interest: cataloguing data bases, G.I.S., web communications). With this respect she is also involved in European Research Projects. Since 1996 she is chief editor of the IBC (Istituto Beni Culturali) web site. Author of several publications and articles, she is part of Editorial Board of scientific reviews as "Archeologia e Calcolatori" and "IBC. Informazioni, Commenti, Inchieste sui Beni Culturali".
E-mail:
MPGuermandi@ibc.regione.emilia-romagna.it