Harmonising Methods of Disseminating Urban Heritage

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Introduction

In cities with a long history, we can often find a high level of dispersion of the cultural heritage, as well as methods of preserving, describing and disseminating it. This paper explores a process to reach the harmonisation of documentation and retrieval of cultural heritage at a local level. Although this process is valid in any context, we will focus our example on the most complex area that we have found: city planning.

Cartagena is a medium size city, with a long history starting from the Carthaginian period. The city owns several collections connected to planning and landscape, although, as a sample, we will concentrate this presentation on the development of the city carried out between 1875 and 1934, known, at a local level, as the "Ensanche." During this period there was an effort to modernise and enrich the city with a strong Modernist orientation, coincident with a period of industrialisation, promoted by foreign investors. In addition, nowadays the city is remodelling the old Ensanche, in such a way that the Council and private organisations are generating a significant volume of active records. The first remodelling, on the other hand, generated files, architectural drawings, archival documents, administrative regulations, as well as ancillary products, like bibliographic essays, photographs, paintings, etc. Of course, the different quarters and buildings are the main product of that effort. Therefore, we can discriminate, conventionally, two kinds of collections, "static" and "dynamic":

   1. Dynamic - Records, still active, related to urban reforms in progress, as well as to the retrieval of Carthaginian, Roman and Modernist architectural heritage. We are interested, at the moment, in this last period.

   2. Static - Different cultural collections, including archival files, plans, drawings, photographs, etc.; museological and bibliographic collections, ancient serials, some samples of paintings and other fine arts, etc.

Additionally, not all of this documentation is owned by the local government, but also by individuals, foundations, private companies, etc.

Of course, these collections have not been preserved and described in a consistent way over the years. As an obvious example, the active documentation is managed through the organisation of the information programs, and the closed documentation through more static databases.

Since Cartagena is a growing city, oriented towards tourism and heritage retrieval, and, at the same time, with a population strongly involved in his cultural environment, one of the priorities of the Council is the documentation, preservation, restoration and, mainly, dissemination of the history in a consistent way.

The solution we show uses, as a pretext, a physical and digital exhibition of the urban history of the city harmonising in such a way preservation, description and dissemination of the above mentioned materials. We must notice, however, the fact that the cultural heritage of the city, as well as the urban planning, has been managed rather poorly for years. This implies a constraint in the harmonisation process. The first constraint is the chaotic situation that we found among the records. The second constraint is determining a way tore-arrange in some conventional way the information. These two tasks have to succeed before moving to more sophisticated techniques and procedures.

## Contents and organisation of the information

We have to work with two quite different kinds of documents, data repositories and, as a consequence, information:

   1. The Urban Planning Department is developing a "new city" and generating a great deal of new information. It is using a conventional computer supported co-operative workflow tool, based on Microsoft products: Visual Basic, Access and so on. However, because the Department is divided into several offices, some of them are still using obsolete programs and tools, for instance, WordPerfect 5.1 or 486 processors. Because most of the staff doesn't have strong computer skills, we cannot remove suddenly an
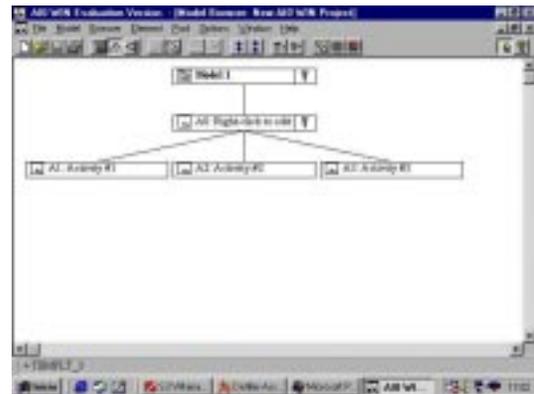
old, familiar system to implement a more adequate system. On the other hand, we are developing our work in co-operation with the Data Processing Centre, but we are not responsible for the Urban Planning Department. Therefore, we have to work, simultaneously, in four different steps:
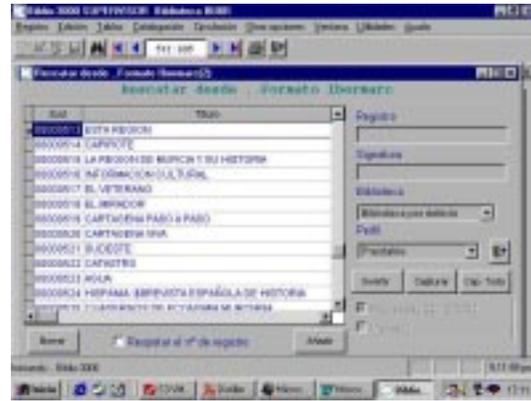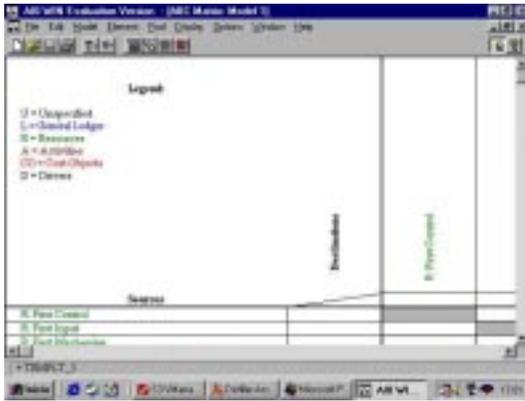
a) The oldest databases. We have to get a correct migration from these to our archival system, and this implies the use of an intermediary program, friendly for the civil servants, but terribly annoying and certainly useless for us.

b) The CSCW. Since this is a more updated system, we are using it, at the moment, like an intermediary step, with two aims: on the one hand, to train the staff in new uses of the technology; on the other, to migrate newly created records, in such a way we can minimise the "disturbing" effect of the oldest databases.
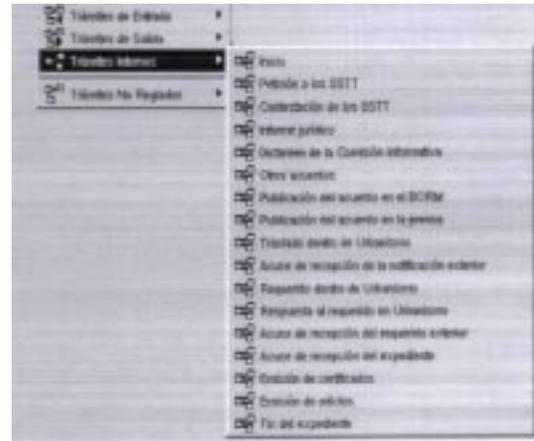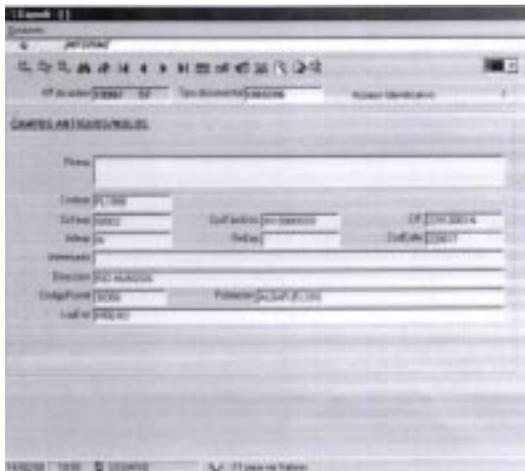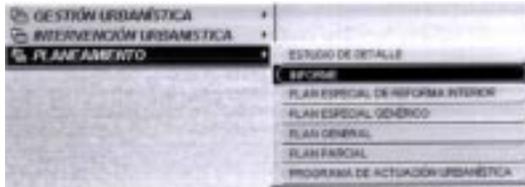
c) Development of a modeling system. We need to develop a system that is capable of structuring the information that the Urban Planning Department is generating. The users do not want to know the modeling system. There needs to be an interface to the system. In such a way, we will migrate data according to our interests, avoiding a negative reaction on behalf of the Department. To reach this end, we are using the well-known IDEF techniques, specifically IDEF0 and IDEF5, such as developed by KBSI.

d) Interface. We will develop a mask with the appearance of a "Windows-based program" but actually independent of any platform.

This seemingly strange mixture of procedures, techniques and tools allows us to allow for a structured migration of information with a minimal impact on the staff that input the information. It allows us to reconcile and harmonise this information with other databases.
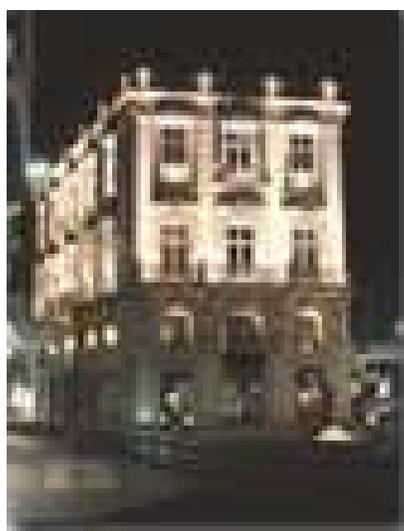
2. The Councillor of Culture Office, on the other hand, is promoting the retrieval, arrangement and dissemination of cultural heritage, in all its different facets, that is to say: museums, libraries, archives, buildings, fine arts, etc. Since all of these are better-consolidated areas, the situation is not as problematic as with the Urban Planning Department. These institutions are using relational databases to describe their items, although not the same model of databases: Access, Fox Pro, Dbase, etc. It will be easier to implement changes here. These staff are skilled professionals who understand the concept of harmonisation and have strong computer skills.

However, in spite of the co-operative staff, we have an additional problem. Because of the relationships between Urban Planning and historical and cultural information there is a permanent flow and re-flow of documents and information. We are modeling cultural institutions in a similar way, in order to reconcile procedures and techniques. Our aim is not to reach one homogeneous database, but to allow every professional to manage his or her own databases. However, all will follow similar procedures, which will make the retrieval of information easier for the professional, the intermediary and the end-user. All of this means that we have to deal at least with the following "instances", and their relationships:

a) Active records, managed according three different means: old databases, based on MS-DOS platforms and DBF files; recent databases, based on Windows platforms and MDB files; and a mask to replace the former databases.

b) Non-active records and files, consisting of:
 -Archival materials, since 1245 containing a highly dispersed range of information.
 -Bibliographic materials, dealing mainly with the history of the urban development of the city.
 -Ancient serials, newspapers and other newspaper materials, also with a high level of dispersion, as they reported the first Modernist development of the city day-by-day.
 -Cartographic materials and other plans, drawings and projects.
 -Ancillary materials, such as photographs, paintings and other fine and decorative arts, etc.
 -Buildings and other architectural items, ranging from squares, markets, façades, fountains, to parts of buildings such as doors or windows, which are protected by the regulations about cultural heritage.

the ISO 2709 standard, making in this way the interchange of information easier. Each type of repository uses the most adequate description standards: USMARC formats, ISAD(G)2, CIDOC standards. This issue is irrelevant, since our interest is to obtain a homogeneous structure to interchange information, and an indexing and classification system capable of retrieving those information from disperse points. We are aware of the technological poverty of this solution. On the one hand, we think that, at least, it is realistic, and allow us to put a bit of order into the chaos. On the other, this solution allows us to use a distributed database, instead of disperse and heterogeneous data repositories. Visual Fox Pro, merged with some other proprietary applications, allows us to manage the documents and the information in a robust and reasonably flexible way. Of course, all of us hope this will be, also, a temporary solution.
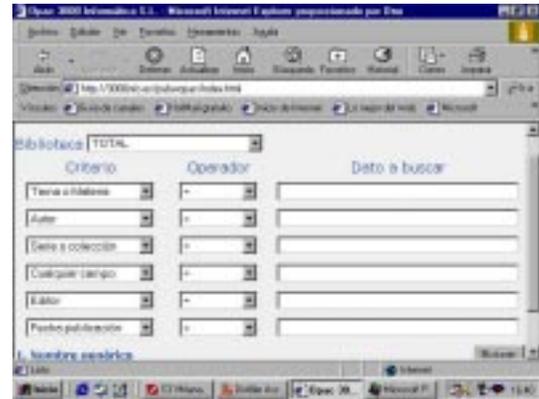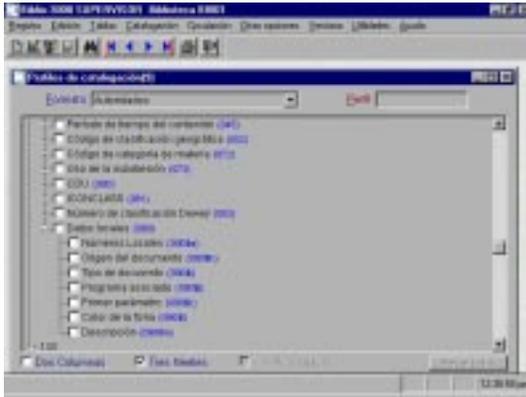

Since most of these materials are hosted by dissimilar kinds of institutions their records are collected and maintained differently. Some of them are registered and described by means of word processors - others by means of different relational databases. The highest level of homogeneity is being reached by public institutions, because of an agreement between the Archives Department, the Data Processing Centre and a private company. In this way, we are solving at least one of the problems. Both the Archives, the Libraries and the Public Museums are using only one programming language - Visual Fox Pro - and only one associated kind of relational database. In addition, they are describing their materials according to a single structure -

At an internal level, we are modelling, as we said, this information, following the IDEF techniques, and, at the same time, migrating data to conventional HTML files, in order to get a more homogeneous display. With regards to some other associated problems, the Archives Department is signing agreements with private institutions hosting materials, to manage them.

Finally, and since, as we said, this situation is provisional and cannot be sustained for a long time, we have been planning a technological process, currently in progress, to ensure a persistent harmonisation of materials and associated data and data repositories, through the use of modelling techniques and metadata languages.

Technological steps
The following is a list of all the technological steps in this process. Some of them are finished while others are still in progress.

1. Digitisation of materials not digitised yet, or associated documentation in the case of archaeological and architectural items Most of the significant materials for public institutions - buildings, architectural items and drawings, archival documents regarding the first urban reforms have been digitised. This is not the case for private institutions. Therefore, one priority is to digitise these materials. However, we have finished a complete union catalogue of the architectural heritage.

2. Analysis of materials, in order to develop a model of classification and indexing, allowing a refined retrieval in a subsequent step. Since one of our main interests is a sophisticated retrieval of the information, oriented to users' needs, not strictly to contents, a detailed definition of the ontology, as well as its entities, attributes and elements is a sine qua non requirement. With regards to thematic indexation, we are using the OECD Macrothesaurus, as it is simple, and allows quite a correct retrieval, taking into consideration contents are not our primary interest. A classification according to the users' needs is more complicated, as it implies a market analysis and the use of statistical and psychological devices. At the moment, we are using a conventional solution, perhaps too easy, but useful: we are classifying the items according to some of the UDC auxiliary tables, basically, that for people. In such a way we can retrieve information according to the users' age, skills, education or planned use of the information. Obviously, a combined search, by indexing terms and users' classification is also possible. A more refined classification will have to wait.

With regards to the analysis of the end-users, we have added a module to create and control statistical data. At the moment it is quite simple, but we are finishing a new and more sophisticated module, and a model of survey to be incorporated next academic year.

3. Development of a generic relational database This will allow the professionals to enter any kind of basic data. At a second level will allow them to add any kind of relevant information. As we said above, we are able to customise these databases, by creating profiles according to the different kinds of professionals' needs.


4. Conversion to a generic metadata language. This was quite a problematic issue, basically because of the current "inflation" of specialised metadata languages. After reviewing carefully the state-of-the-art, we had to make a decision between two options:

-To use a simple, basic, language, to interchange information. The most obvious example is Dublin Core; but we realised elements in Dublin Core were clearly insufficient to accommodate an exhaustive description, necessary in some cases.

-To use specific metadata languages for each type of data repository. For instance, CHIO for museums, EAD for archives, MARC-DTD for libraries, TEI for publishing departments, and so on; but this option was, simply, unmanageable, and, in addition, we ran the risk of returning to the initial chaotic situation. We took into consideration the use of only one specific language, in different contexts -maybe ILSES or EAD-, but, even so, both of them are difficult to reconcile with active records description, that requires quite a qualitatively different method, such as, for instance, an adaptation of GILS or DDI.
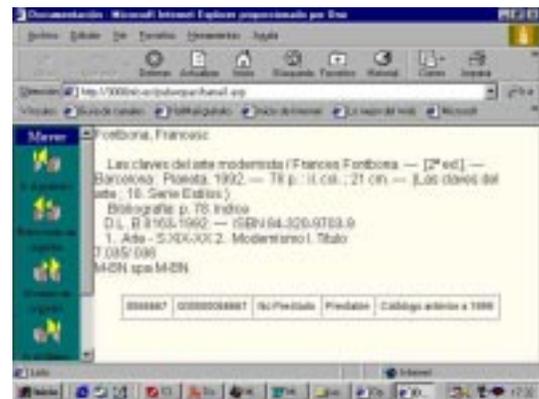
Finally, we refused these options, and chose an easier one. Since cultural heritage databases are using a standardised language, MARC, easy to convert, and even the active records are going to finish their life-cycle in the archives, we are working, simply, with XML and associated, and displaying the information by means of HTML and associated.

5. Design of a search engine capable of filtering the information, not according to its contents, but according to the users' interests. At the moment we have to work with conventional tools: the IFLA Guidelines to display information through OPACs, and the ANSI/NISO Z39.71 standard to display holdings. We can customise also this search engine, according to different users' needs, as well as the printed reports.

6. Develop satisfactory "visual" outputs. We are dealing with a thematic digital library, with a large visual component. Thus, we must also work on "visual" outputs, both to satisfy the end-users and the involved professionals, using ourselves VRML technologies, and allowing them to use authoring tools. At the moment, we have to be simple. Each item has a description and associated with it, one or more "contextual files", depending on their relevance: static images, sound, video or text.

7. If the mentioned steps are developed correctly - and at the moment that is the situation- we will be able to elaborate any kind of digital or physical output - website, intranet, kiosk, OPAC, DVD, webTV, printed materials...- using consistent and conventional technologies. Anyway, outputs are not a problem for us, if we can harmonise different databases in a distributed virtual database. In fact, even although we will have to fight still against the chaos for a long while, we are developing the website, the Intranet and the OPACs, based on the current achievements. These outputs, at the moment in progress, will replace the current tools at the users' disposal: a poor website, a rather unfriendly OPAC, and a TV channel lacking information. We hope we will be able to put into operation some of the outputs by summer, and the project will be finished in no more than one year.