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ABSTRACT

This paper describes the creation of an automated network of museum libraries in Spain. The only way in which the specialized libraries in the world today can continue to be active and to offer valid information is to automate the service they offer, and create network libraries with cooperative plans. The network can be configured with different technical structures, and many strategies may be useful in order to create a cooperative system, but it must include the following requirements: high level of funding; making resources more profitable; time saving; standards for library networks; and easy access to information from geographically disperse museums. This network has the following characteristics: a bus network; access to a single database; specialized libraries; and access to other networks. The system hardware, operating system, database management system, and library management software are discussed. The paper also discusses following ISO/OSI norms; retrospective catalog conversion and database loading; training personnel; linking with the general museum system; and access to the Internet. Creating a network for automating the Spanish museum libraries is the only efficient way of using the materials and resources available there and avoiding their loss. Automating all the museum State libraries simultaneously on a low budget, using funds jointly and rationalizing their use, obtains better performance from the personnel available and gives access to international information networks. (Contains 18 references.) (Author/SWC)

Spanish Museum Libraries Network

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Spanish museum libraries network

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Abstract: *Most of the State Spanish museum libraries have valuable and specialised funds which are at the present difficult to manage due to the fact that they are sometimes at different and, frequently, small institutions. The problems seem to be easy to solve through the creation of a library network that will keep these valuable funds from getting lost, and at the same time will help researchers and professionals retrieve information from these collections.*
To do this it is necessary to create a 'bus net' with mainframes at Museo del Prado, Museo Arqueologico Nacional and Centro de Arte Reina Sofia. From these sites the programs will be loaded and connection with the libraries will be established according to the ISO/OSI standards. That stage of the project involves the existence of a professional group to coordinate cataloguing work which has previously been done at the libraries concerned.
In the second stage, libraries will be connected with the museums' databases; later on the network will be connected to the online databases at the Ministerio de Educación y Cultura, Consejo Superior de Investigaciones Cientificas, the universities, etc. Finally, all the information could be available on the Internet through the international TCP/IP protocols. In this way, documents now at the Spanish museum libraries could be available all over the world.

Keywords: Museum libraries, automated networks, online databases

1. Introduction

All Spanish museums depending on the Central Government have larger or smaller libraries, sometimes considered as individual departments and other times as storehouses for books which serve as a sporadic documentary base for museum work. Many of the large European museums started by being connected to a general library in answer to the universal concept of Culture typical of the 17th Century. Nevertheless, in most cases, both institutions separated and became independent of each other. At the same time authentic museum libraries began to appear, frequently with specialised materials taken from the first general library, made out of collections which serve as a base for and a complementary part of all museum activities, and for the objects stored there.

Little by little, as museums began to define more precisely their functions and limits, libraries depending on museums turned into specialised centres. Unfortunately, in most cases libraries were considered as an annex of little importance to museums, and were denied the prominence that centres for specialised documentation should have had. Traditionally museum libraries were considered just as storehouses for books, of no importance to a museum, and often were neglected from the beginning.

2. Spanish museum libraries.

Nowadays, museum libraries depending on the Central Government contain numerous and different documents — from 80,000 at the Museo Nacional Centro de Arte Reina Sofía to 2000 at the Casa-Museo de El Greco — with monographs and periodicals as a whole, but also containing audiovisual records, microforms, slides and so forth, auction and sales catalogues, exhibition catalogues and old prints. This material is geographically dispersed and access to it is difficult, when not impossible, since many of these libraries do not have specialised personnel in charge and in many cases the material is not even adequately catalogued. This situation becomes complicated because of the different status of each museum. There are autonomous organisations like the Museo del Prado or Centro de Arte Reina Sofia, and others depending on the Subdirección General de Museos Estatales, in the Ministerio de Educación y Cultura. Material held in their libraries can be very different, as can services, norms for access, actual or potential users, budgets for maintenance, personnel assigned, etc.

Nevertheless, the Spanish museum libraries are centres of enormous interest for different reasons. In the first place, documents held in them are of a highly specialised nature, often very difficult to be found elsewhere and generally expensive; these documents are part of the Spanish Bibliographic Heritage but they are not collected in the Collective Catalogue (National Union Catalogue), which means scarce protection and availability. Secondly, if museums are considered as live centres for research then libraries are institutions which we cannot do without,

and are responsible for organising documents in a museum so as to help investigators find the necessary information that they often cannot find elsewhere; libraries now go from collection management to access management. Now, none of the functions can be found in more that a few museum libraries, and even then not in a satisfactory way. Besides, the enormous amount of documents constantly appearing on any subject and constantly growing makes it impossible for any specialised library, regardless of its budget, personnel or space, to acquire, manage and hold all the information about any research field. All the special libraries in the world are unable to do it; all of them are incomplete, and will continue to be so, even though research will demand more information and of higher levels. No single institution could today dream of collecting all that is published all over the world in order to assure its users any document they need. Jacquesson has said that 'the autarchie age in libraries has finished'.

On the other hand, the scarce identity of some of the museum libraries makes it impossible to for them to automate efficiently, which entails taking over quality software, buying sufficiently powerful hardware, preparing sites, training personnel, etc. Nevertheless, materials for the museum to which they belong — frequently duplicated — force them repeatedly to buy the same books, sometimes in fact just for occasional use, hence wasting money.

3. Library networks and museum libraries

The only way in which the specialised libraries in the world today can continue to be active and to offer valid information is first, to automate the service they offer and second, to create network libraries with cooperative plans. This network can be configured with different structures (ring, star, bus, etc.) and many strategies may be useful in order to create a cooperative system, but it always must respond to the following requirements:

3.1. High level of funds

The cooperative plan allows each centre to define specifically one fixed area, and only that. The communication channels between centres permit them to complement each other, giving complete cover toward larger fields. Museum libraries are very specialised centres in accordance with their parent institutions (museums covering very specific fields).

3.2. Making resources more profitable

This is one of the most interesting characteristics of cooperative plans. Not only does this avoid duplicated purchases but access to some services — like bibliographic services, subscriptions, training, etc. — can become cheaper and cheaper when they are used (and, of course, supported) by several libraries. The resources of a library can also be used by all of those belonging to the same network, in order to avoid duplication of holdings and functions. Many times, sharing a server and software developed cooperatively was the only way that most libraries could afford the high cost of automation. Museum libraries always have very valuables holdings, but usually they have few resources for management and a very scarce budget for maintenance.

3.3. Time saver

An automated library network means that a collective catalogue exists. Each record is catalogued only once and afterwards it is connected to as many holding records as necessary; the same authority files could be created and used in all libraries working together; circulation modules work in real time with a database which includes many libraries; the personnel in charge of the network may also be specialised in certain tasks or certain kind of documents. There are many specialised documents at museum libraries, and users demand more and more information and more and more precision. This means that the staff should be qualified for specific work.

3.4. Standards for libraries

Libraries working in a cooperative network must use the same software, the same hardware, the same protocols for connections, the same format for bibliographic records and the same authority files; they also could have the same rules for access, circulation and anything else. This is the best way to provide guidelines in order to manage to useful standards for similar libraries. Museum libraries have different rules, different equipment and different budgets: however, they are very similar libraries. A network is a successful tool to get the same library standards and policy.

3.5.

Finally, it will not be necessary to search through a lot of different centres to look for a certain document or to verify that it is not available at all. Museum libraries are geographically dispersed in their local, regional, national or international areas, so the end-users have to visit one institution after another to get all the information about each item that they are looking for.

4. The Spanish museum libraries network

Creating an automated network of Spanish museum libraries means creating an automated system which includes museums depending on the Ministerio de Educación y Cultura that have material of bibliographic interest. This network would have the following characteristics:

4.1. A bus network

This makes connections between centres easier and, at the same time, keeps them independent. A bus network has no switches or repeaters: this means that transmissions from any one station can be received by all the other stations without problem. The network would be supported by various servers — it would need to be seen whether it would be necessary to set up one server in each centre, or if some small museums could share the same server: however, at least one server must be installed at the Museo del Prado, Centro de Arte Reina Sofia and Museo Arqueologico Nacional, which have the biggest libraries. These would have many terminals connected, serving as work places (for consulting or entering information) or as OPAC places (consulting only). Graphical user interfaces must be used for OPAC computers to make it easier for any user to get information. All computers that were part of the network would have access to the OPAC, as well as others installed for external access. There is now a server at the Centro de Arte Reina Sofia, with a Unix operating system and BRS database management software, and there is another server at the Museo del Prado, with a Windows NT operating system. All computers would have access to the PIC (Points of Cultural Information) of the Ministerio de Educación y Cultura, and those installed in libraries would also have CD-ROM readers for consulting external databases and, where appropriate, for incoming records. The software for an information management system would be the same — it is necessary to acquire a program for each server — since this network would work as just one institution with many branch libraries. This would also make it possible to acquire or subscribe to some services once, for one institution, and not once for each library.

4.2. Access to a single database

Only the existing documents in any of the Spanish museum libraries would be loaded in a database, which would function as a Collective Catalogue. This way, from any screen located in any museum it would be possible to know the books in existence in each of the libraries of any Spanish museum, the number of copies available and their situation, condition of loans, etc. Also, the cooperative use of the circulation module should permit reserving, requesting, loan or reprography of documents from any point of a network to another. However, this organisation of a shared cataloguing system and general circulation requires supervision and control programs, plans and development policies, regulation between partners, and very strict rules about cataloguing and classification systems, which provide guidelines for different works. It also needs a control group or person for troubleshooting, keywords, access permission and so forth: the network manager.

4.3. Specialised libraries

Working in a network, it would be possible that each library could specialise in those fields or services which would be related to the museum it depends on, and that cooperative plans could be established for acquisition and for cataloguing. The essential principles are to reduce the amount of original cataloguing and to eliminate duplication of effort. During the last decades, sharing cataloguing systems has been very successful in guaranteeing a good level of cataloguing, and saving expense and effort: this method could obtain a better income from the resources available in each library, and work could be done in a more reasonable way. Finally, by joining shared cataloguing schemes, libraries are able to build their own files of machine-readable records in a standard form which can be transferred to other automated systems or networks, or to successive generations of automated systems. Now, working in this way also lets each library become more and more specialised in different items and tasks.

4.4. Access to other networks

The existence of a serious library network offering valuable information and documents — more than 500,000 books, 10,000 periodicals and an undetermined number of slides, audio records, videos, etc. only at the museum libraries belonging to the Ministerio de Educación y Cultura in Madrid — and some very specialised services mean that other networks can be contacted, and that libraries can participate in international projects or programmes of a wider field. The possibilities from there are innumerable. Most immediate would be access to the Internet, subscriptions to IFLA and other institutions, taking part in European programmes, access to Spanish library networks (like REBECA for public libraries or REBIUN for academic libraries), creating librarian working groups for Spanish museums and — most important — loading the whole database in the Collective Spanish Catalogue of Bibliographic Heritage. In any case, the network always must operate as one institution: the virtual museum library.

5. Development

After a very serious study involving organisations, search of funds, definition of a model structure and choice of standards, requirements and technology, we have decided that in general creating a network of automated museum State libraries will take place in the following way:

5.1. *Acquiring hardware for the servers and computers considered necessary*

At least one terminal for each library, printers and the Ethernet cards necessary for the connections. We have chosen the following equipment:

- *Servers*: Compaq Proliant 1500 5/166 Mod. 4300 Intel Pentium. 512Kb RAM cache, 166 MHz speed, 32 Mb RAM ECC expandable to 256 Mb, 4300 Mb Fast-SCSI-2 hard disk, and network card NetFlex-3P in PCI 32 bits.
- *Microcomputers*: Digital Venturis 5100 Pentium, 16 Mb RAM cache expandable to 128Mb and 850Mb hard disk.
- *Printers*: Canon LBP-1260 Laser, 12 page/minute speed.
- *CD-ROM*: Reader-Player CD-ROM Sony Double speed connection SCSI and compatible with CD-DA, CD-ROM, XA and CD-I formats. SCSI Adapctec 1542 bus ISA card included

5.2. *Acquiring operating system, database manager system and library management software*

Acquiring operating system, database manager system and library management software, which will function according to international standards — IBERMARC format, cataloguing rules, ISO norms for protocols to connect networks, character set, open system interconnections, etc. — and which will be loaded onto the servers. It is essential that software adopt the international norms for documentation and be conveniently tested in other libraries of similar characteristics. We have chosen these software programs:

- *Operating systems*: Compaq SmartStar and Compaq Insight Manager (included in the server); Unix (operating system for server); Windows (operating system for client).
- *Database manager systems and programming language*: INFORMIX Standard Engine V.7 for programming language; BRS for databases manager system.
- *Library manager system:* in order to set up the network we prefer a client/server version of the library manager software. However, this last decision depended on the Subdirección General de Museos Estatales: we only can propose the software we considered the best.

So, we have proposed the following software:

- ABSYS, used in State public libraries in Spain;
- LIBERTAS, used in academic libraries;
- SABINI, used at the Library of the Ateneo (Madrid);
- SIRTEX, used at the Biblioteca Nacional (Madrid).

All are very good systems and have been tested in many libraries in Spain; all of them are able to deal with the following problems:

(a) transferring bibliographic records from external sources to local files;

(b) creating original catalogue and editing records;

(c) maintenance of authority files;

(d) control acquisition and creating spreadsheet;

(e) serials control;

(f) circulation control;

(g) access to external information systems;

(h) friendliness of OPAC;

(i) others: account, statistics, interlending, etc.

5.3. *Establishing the corresponding connections between terminals and servers, always following the ISO/OSI norms for interconnection systems*

However, we need access to the Internet so we also have the TCP/IP protocols; we will require our OSI system to be able to interoperate in a reasonable way with systems based on TCP/IP. We have found a solution in the construction of gateways which can interoperate with either type of system acting as intermediaries between both of them. In order to get this gateway we have asked to join an international programme at the CICYT (Interministerial Commission for Science and Technology). The emphasis of this project is on interoperation between different systems working at museums, special libraries and universities in Spain. In this way, we could

benefit from the technology of this project and also from its results.

For connections and communications in the network we will use the RDSI (Integrated Services Digital Network), which provides digital connections from point to point and supports a wide range of services. The RDSI is able to transmit any kind of information (sound, images, text, etc.), and users can have access to them through many standard interfaces. Using RDSI has many advantage: it is faster, simpler, cheaper and more reliable.

5.4. Catalogue retrospective conversion and database loading existing at the moment

For this, three methods can be used (direct keying; matching and extraction of records from a resource database; or optical scanning and automatic format recognition) in different ways (temporary contracts, agreements with institutions, etc.). For authority records we prefer to use authority records from the Biblioteca Nacional, now available on CD-ROM. But in any case, cooperating procedures should be followed, aimed at avoiding duplicating work to economise time and resources. When retrospective conversion catalogues are made, from contracts for copying of records or through the inscription of bibliographic services, it should be only as one institution with branch libraries and not as various independent centres. In any case, there will be at least one member of staff having specific responsibility for the network and its operations, and a group charged with authority files control, database debugging and providing standards for bibliographic records.

5.5. Training personnel and making the network function

Training personnel would be done gradually as the different stages of the project start to function; personnel involved in the same thing would be trained together, which would reduce costs and let the system develop. In any case, training techniques depend on the resources available but they must included classroom and theory sessions, audiovisual presentations and computer-assisted learning.

5.6. Linked with the general museum system

When museum libraries are automated and established in a network, they can never forget that they are moving to a museum-wide documentation system. In this way, we have planned the following objectives:

(a) all the museum staff must have access to the library network databases from their own departments;

(b) most of the museum's objects are studied in many documents from museum libraries. A linked system must let information be moved from bibliographic records to object description records, using the same commands and similar interfaces;

(c) all libraries working in the network have to use the same thesaurus and the same controlled list of subject descriptions, but the museum must use them too. Terminology is the bridge between museum departments and museum libraries.

5.7. Last step

Connection with PIC, access to the Internet, inclusion in the Collective Catalogue of the Bibliographic Spanish Heritage. Once the system gets started it should be opened up externally to improve its rentability and at the same time to use other available resources online. It is suggested that the first measure be connection to the PICs of the Ministerio de Educación y Cultura; access to the Internet as one institution, with a view to offering information as well as retrieving it; and automated record loading in the Collective Catalog of the Spanish Bibliographic Heritage, with an end to acquiring better protection for the material.

6. Conclusion.

Creating a network for automating the Spanish museum libraries is the only efficient way of using the materials and resources available there and avoiding their loss. Automating all the museum State libraries simultaneously on a low budget, using funds jointly and rationalising their use, obtains better performance from the personnel available and gives access to international information networks. Another alternative means a disproportional investment in software, hardware and personnel or the loss of valuable funds.

The joint automation of the museum libraries and their appearing in a network should be seen together with the general project of automating the museums. But it should be made clear that automating the libraries has problems and peculiarities very different from the museums, because of the kind of funds which they hold and because of the functions between them. Automation of libraries is also a project developed more than 30 years ago, with existing agreements for normalising international rules and guidelines from official organisations with details for the process. There also exists an abundant market for informatic programs, which comply with the required rules tried out in other libraries sufficiently to offer a satisfactory standard of quality.

Starting a network is identified with standards and guidelines upheld by the European Union in matters of information aimed at sharing resources and easing access to the existing documentation of member countries, and to assure information flow between them. Creation of networks in libraries and documentation centres with an active participation in wide area networks is a general trend which follows documentation, and a trend that will take place in the whole world over the next years.

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