ADVANCES IN IT SYSTEM AND THEIR APPLICATIONS
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NETWORK INFORMATION SERVICES FOR UNIVERSITY LIBRARIES

Abstract: overview of the ways in which networks' use is affecting Italian University libraries. Some examples of specific situations are also given.

Over the years, the institutional aims of Italian University Libraries have always been based on researchers' common desire to garantee close physical proximity to research materials. This is the main cause of the proliferation of small size libraries in Italian Universities. Today, however, the library's aim to support research and education can no longer be fully satisfied locally by finite and always limited resources.
There is a growing need for access to a wide range of remote information sources; such sources should combine on-site largely used materials, in both print and electronic formats, with an electronic network which provides access to, and delivery from, external worldwide library and commercial information sources. Creating a virtual library from a number of research libraries means building an information system, in which scholars working at their desks have access, through networks, to a wide range of electronic information sources.

On this assumption, many University libraries are more and more involved in developing electronic networked services and systems. Unfortunately, this development is carried out without the government support. The infrastructure is GARR, the academic network. GARR is the acronym for Harmonisation Group for Research Networks; its aim is to establish and operate a backbone interconnecting the Italian research and academic networks and to co-ordinate connections to international networks.

In the absence of a national policy for information, the new approach to providing information services, , cannot evolve without a central organizing structure. A few Universities are experimenting with local central coordination centres; among them, Bologna University represents a leading experience.

Elsewhere, many isolated libraries have developed projects of their own. At present, libraries are particularly concerned with two ranges of problems:

- advanced information services offered through a network
- the development of access methods and problems related to the existance of different user interfaces.

 Since Bologna University has the widest experience in the use of networks for

information services, I will mainly discuss this particular case, not only because I am personally involved in it, but also because it is perhaps the widest and most advanced in Italy.

1. Information services

Information services include: Campus Wide Information Servers, remote access to data bases, network interlibrary loan, electronic document delivery, interpersonal comunication, CD-ROM LAN and other University databases made available to end-users through the network, software supply via international networks.
I will now go into into each of them more at length
1.1 CWIS

Several Universities are, or have been, involved in the development of a Campus Wide Information System. The development of such a system is overseen by the campus planning committee, where the library head or the central coordinator have an important role. This is the case of Bologna University, where the central information system has been developed by the libraries coordination centre, called CIB (which stands for Centro Interfacoltà Biblioteche, meaning Intelibrary Coordination Centre). In the case of other Universities (for ex. Padova) the information system has been developed by the local calculation centre.

At Bologna University, setting up an automized information system has been facilitated by the already existing University scientific network (an extended LAN) called Almanet, which interconnects most of the University Insitutes, Departments and Research Centres, over a large area extending from Reggio Emilia to Rimini. This extended Lan is also connected to the national scientific network (GARR) and, through this one, to other international networks.

In all cases, however, the library system is the major component, if not the core, of the campus information system.

1.2 Remote access

An increasing number of libraries provide, or intend to, a gateway from their OPAC to other databases or networks such as Internet. This gateway is always made available through the campus network, but not directly from within the local OPAC. It often allows users to have access to library loan, suggest purchases or ask reference questions, using e-mail.
For ex. before powerful tools such as Gopher became widespread, Bologna University has used - for more than 2 years now - a software called Almatel, which is based on Hytelnet.
The second release of Almatel (Almatel 2) has been operating for just a few weeks, and I will deal with it more in depth later on.

Almost all University libraries are connected to Internet, but only a few of them are

undertaking the task of training researchers and students in the use of Internet resources. Training opportunities have sometimes been arranged by the local computing centre (at Firenze University, for example), while only in a few cases this is the commitment of the coordination centre (at Siena and Bologna Universities, for example). Several libraries have added training for end-users to their traditional information services,maintaining at the same time the intermediation of a documentalist for some on line searches.

1.3 ILL and document delivery

To date, ILL and document delivery service are scarcely used. Many libraries are experimenting with services and products from commercial vendors, especially BL Boston Spa. Torino, Bologna and other Universities are engaged in AIDA (Alternative for International Document Availability), a project financed by the European Community to investigate the feasibility of delivering research materials to individual researchers over local, regional networks.
AIDA is a project aiming to set up an Italian and Portuguese libraries network that may garantee a fast and good value service of interlibrary loan and document delivery in Italy and Portugal. The network will be also available to Italian and Portuguese users for access to foreign documents.

The project will offer:

1 - A market analysis of interlibrary loan and document delivery in the two countries, of users' needs and of libraries facilities;
2 - A common definition of the services to be offered and of the related technical and organizing solutions;
3 - Common standards for data communication and documents' identification;
4 - A network architecture for data communication, through a software that administrates the Intelibrary Loan and Document Delivery services;
5 - A testing of a prototype application in one of the two countries, that will include a network for data communication, a structured working organization and the operational and administration routines.

The project's results will have to conform to the following aims:

1 - creation of minum standards for a document delivery service that has to be nationally and internationally user-oriented;
2 - rationalization of the participating libraries' acquisitions policy;
3 - expansion of Italian and Portuguese users' access possibilities to networks facilities of other European libraries and Document Delivery Centres, matching their procedures and technical standards;
4 - increase in the use of international academic networks (Internet) among library users.

The service is planned to be available in June 1995.

At the moment, however, only a few libraries are developing a policy of reorganization that emphasizes access over ownership.

Bologna University has also been investigating the field of electronic texts and has been trying to provide access to internal documents and to scientific journals articles. The SGML format has been tested for the electronic document format.

1.4 Interpersonal Comunication

Many scholars and professors have already become familiar with the use of networks, especially of e-mail. Though this is probably more true in scientific faculties, the use of electronic tools is growing among humanities researchers, too.

Libraries are beginning to use electronic conferences and listserv dedicated to specific librarianship problems or to the library subject area . Other uses of e-mail involve reference, circulation and acquisitions work. Electronic mail systems are also being used to cooperate with far away colleagues, to answer reference questions and to supply documents.

1.5 CD-ROM LAN

Bologna University has set up a CD-ROM LAN to extend the availability of CD-Rom databases of various subject fields; also the OPAC has been extended to provide access to serials' articles contents.

This is mainly being done through campus cooperation and the sharing of equipment and databases. CIB, the libraries coordination centre, has provided the infrastructure and operating funds to implement the service.
Other Universities have been developing projects limited to single or area libraries.

1.6 Software supply via international networks

The possibility of supplying software via Internet is widely exploited The cooperation and integration of computing centres' and libraries' resources has had the best results in this specific field.

2. Procedures

The spread of Internet has caused many libraries base their access procedures on NIR tools, such as Gopher or World Wide Web. However, only a few of them have arranged a direct access to inside resources WITHIN these tools and thus using one single interface. Bologna University is one of them. There, a client-server architecture has been developed using WWW (World Wide Web) to link the local OPAC to remote databases.
This application of World Wide Web (called ALMAtel 2) allows access to the catalogues containing data about the local collections, union list of serials available through the National Research Council, which is integrated with the serials' tables of contents (firstly from Current Contents by ISI) and other on-line public access resources

in Italy.

In the previous release of the user interface (ALMAtel 1) the catalogues were stored as relational tables on the textbase BasisPlus and the access was made, in terminal mode, through a character based interface: the TechlibPlus. Access to ALMAtel was not integrated with the TechlibPlus interface.

Almatel2 is basically built keeping in mind the fact that libraries will evolve into general Information Data Centres, supplying data concerning a whole domain. Such information system is now able to garantee access to different kinds of data in a heterogeneous and distributed environment. A framework has been realized, that has a uniform and integrated interface (either graphical or character-based) and a general access procedure to present and future services supplied by CIB .

This framework can deal with multimedia documents and user-defined documents views and it should solve documents' access problems imposing minimal or no changes at all to the current data organization, to the hardware structure and to the habits of users and administrators.

The features of the final architecture can be summarized as follows:

-Base W3 broker server is on a UNIX Workstation.
-The server on VAX/VMS is specialized in the publishing of the Basis DBMS.
-A public-access character-based WWW client is installed on the UNIX workstation in order to allow a gradual shift to the new client-server architecture. Users with dumb terminals can access the system as they used to do.
-A form-based user-friendly interface is adopted to allow form-based queries to the Data-base.
-The Hytelnet database is integrated in the services through a CGI (Common Gateway Interface) gateway.

The free availability of the WWW software has allowed a rapid development at a limited cost. The data-base publishing has required less than a month. CIB wants to promote WWW as the framework for its library applications: library data access, document delivery, remote administration and multimedia publishing.

WWW will be the framework for prototype implementation af the AIDA European Community project for document delivery and retrieval, co-sponsored by CIB.

3. Conclusions

To conlude, it seems quite obvious that, for the virtual library to become a reality, it is not enough to lay the technological foundations, but what is also crucial is to create the necessary organizing structures. As I have already pointed out, in Italy we lack a national policy for University libraries and still only a few Universities have created a local coordination centre. Bologna University is one of them, therefore it is not surprising that its information services are among the most advanced in the country.