Virtual library, a real library?

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Virtual Libraries in E-learning

There has been a considerable growth over the last decades of all types of learning in which students, teachers, managers and researchers, though maybe dispersed from a geographical point of view, all share the same virtual environment. A great number of new tools and a more generalised access to computer networks are revolutionising learning systems, teaching models and research, and as a consequence, libraries and documentation centres too.

Recent changes introduced in current teaching systems have implied an increase in the type of demands made of libraries and documentation centres owing to a series of factors, among which we could single out the following:
- changes in student typology
- a rise in the number of part-time students
- changes in the educational system

A new type of library emerges from this situation altering the traditional notion of library. From now on, libraries will cease to be located in a specific place and will no longer act as compilers and storers of mainly physical content, and will become spaces devoid of physical location or content. A new library targeting other types of documents and needing to develop new systems to relate to the user.

In this new model of Library, librarians develop their skills in order to study their environment, to interpret and anticipate changes, and to offer the user a kind of response which uses different patterns.

When applied to the Academic setting, the new Library must make tools, content and traditional service compatible with new functions arising from a new way of learning at university and at other educational centres. The Library takes on new roles – it selects, it organises, it identifies, it recommends, it tutorises, it trains.

The new library-documentary model being generated from these premises has been named differently: electronic library, digital library, hybrid library, library without walls, or simply virtual library. We shall refer to this new documentary model as a virtual library, as we refer to that type of library which carries out its function exclusively in a virtual environment - indeed, virtuality has made it possible -, and in addition because it uses digital documents (or digital libraries) as a very important part of its assets by which the Library's aims can be achieved.

In the university environment, Virtual Libraries carry out their function from various basic perspectives. Among them, we might highlight as some of the most significant perspectives: on the one hand, that of providing teaching staff with all those elements which may help them develop and guide the various subjects, and on the other, that of making available support elements and documents to students, as a complement to the materials provided for by the lecturers. Looked at from this angle, virtuality enables libraries to introduce themselves into teaching and research spaces, and allows them to develop their support action to learning, teaching and research, by offering content and services which differ from traditional ones and are more personalised, and have even been customised adapting to the specific needs of each collective. This new library develops, selects and compiles digital content and virtual services.

Differentiating Elements in Virtual Libraries

The current static shape of libraries, usually based on the compilation and storage of more or less fixed documents and indexing diagrams, is now under change. Libraries are now taking a new direction, heading for dynamic virtual libraries which use efficient and flexible mechanisms to locate, organise, accede to and, above all, personalise the content and services they develop.

New distance-learning systems are gradually introducing themselves into academic institutions, and are changing the traditional concept of services conceived of for users located in specific places at specific times. This generalised geographical dispersion, together with this absence of coincidence in time, have brought about the thinking and the design of new library content and services, while at the same time have revolutionised our traditional concept of libraries and documentation centres.

Many are the elements facilitating the creation of virtual libraries. Among them:

- The communications networks which are improving telematic access in two senses: in the speed of access, and in capacity, all of which favours the inclusion of multimedia materials (text, image, sound, video, etc.).
- The appearance of information management programs, facilitating the creation of databases of documentary resources and the retrieval of information.
- Technology becomes more and more user-friendly.
- The standards and protocols facilitating simultaneous access to databases.
- The information digitalisation and creation systems.
- The continuous appearance of more and more powerful languages for the creation of information.

A Virtual Library becomes the gateway that provides integrated access to all sorts of resources and library services both traditional and virtual, and to one's own physical and digital collections, and to resources which can be located on any Internet site, whether public or private. It becomes a uniform interface, understandable to the user, with access to one's own resources and to remote ones. Users obtain access to a great variety of local or remote information, which they can access immediately, whenever they decide they want it.

This new Library model enables its action to be distributed from different locations, it allows uninterrupted access to all its resources and enables its users to request all kinds of services at any time of day or night. This library requires that the librarian-documentalist centres his or her attention on locating, selecting and organising information, and in tutorising the user. And above all, in training the user in the use of the new documentary resources, in such a way as to enable the user to overcome all possible technological barriers and those relating to the use of information.

The Virtual Library of the Universitat Oberta de Catalunya (Biblioteca de la Universitat Oberta de Catalunya, BUOC) is one such library. This university makes use of the resources provided to it by the fact that its teaching action is developed by means of the Virtual Campus. This model has helped it develop a series of functions to suit the needs of users - students, lecturers, tutors, counsellors, managers and researchers. Thanks to this situation, the BUOC has been able to anticipate some of the needs of these users and to suggest library projects to suit the new learning model developed by the university. These projects have turned into specific tools, and into services thought out and designed taking into account the needs and requirements of these users.

The UOC's Virtual Library, ever sensitive to this new model of action, has as its basic principle to benefit as much as possible from available resources or to create those resources which may facilitate the user's task making it not necessary for the user to move from home. This is the reason why virtual libraries not only have their own resources, but they also offer the chance of accessing all the necessary online information, regardless of the place in the world where it may be stored.

The interactive environment enables the definition of services to adapt to the community to which it serves, while at the same time it allows for the setting up of a line of work which demands a model of library which is totally flexible and which has the capacity of constantly adapting itself to the new needs expressed by its users.

There are several elements that turn the UOC's Virtual Library into a different kind of university library, a library completely adapted to the new medium: it carries out its action in a virtual (distant) context; it is based on the use of the new technologies; it is a just-in-time library, in other words, it provides the user with what he or she needs at the time he or she needs it, and in the place the user chooses. The new model makes it possible to develop its action in a thoroughly flexible way.

The basic elements making up the core of the virtual library are the computer programs with special applications, the digital content, and the virtual services. Programs and applications may be commercial ones or developed "ad-hoc" at the actual university. Content should primarily base itself on digital documentation. And services should be designed to facilitate user action as much as possible, enabling them to send and receive any information or documentation by means of their computer from their workpoint at any time. These new characteristics show a series of singular elements which will from now on occupy an important place in the development of this new environment: to compile, and facilitate access to, digitalised information; to develop policies of action in all that refers to aspects of intellectual property rights in digital information; to study and design digital storage systems; and to develop virtual services adapted to this particular model of action and communication.

The Virtual Library: Applications, Content and Basic Services

Owing to the fact that it finds itself in an interactive environment (the Virtual Campus) purposely designed so that different programs, systems and applications may coexist in it, the Virtual Library can disseminate its content and services through the use of several means. The systems used for communicating with the user are of a different type: a program of integral library management; a program of information resources management; the e-mail; and special forms or applications which have been acquired in the market or have been developed by the actual university, depending on the function for which they are meant.

1.1.   Program of Integral Library Management:

-   The Program of Integral Library Management, or catalogue, used by the BUOC is a commercial catalogue to which a few special applications, designed by the university and essential in any virtual library, have been added:

    •   The possibility of managing the library loan on line. This application allows for a series of transactions relating to this service: document request, reservation, renewal or cancellation.

    •   The access to bibliographical registers and, from them, the possibility of direct access to electronic documents or to abstracts and summaries of physical documents. The catalogue is a combination of documents in traditional and electronic support (documents in electronic support may have been generated by the library, by the university, by the information distribution services, or may simply be available from free Internet access). For this reason it is a far cry from the traditional bibliographical catalogue, as it enables the user to obtain online access to the document if it is available from the servers at which it is located. All materials generated by the Library for the catalogue are normally in HTML format.

    •   The access to the databases of summaries of magazines created by the Library itself, also using the HTML format.

    •   The direct connection with web sites relating primarily to the magazines included in the catalogue.

    •   The downloading of several software programs.

1. Abstract and summary of a physical document

- The Information Resource Management, or Dinaweb, is a program designed at our own university to facilitate to the information professional the management of all the resources that will be offered to the user which appear on the inclusion diagrams of the catalogues. In the type of libraries we are referring to they are a growing number, and in a short time they may become more important for the library/documentation centre than those included in the actual Catalogue. These resources include databases, electronic journals, Internet resources of all kinds, or web pages containing information which until now had been presented in a static way.

  The Resource Manager may in addition generate some of the web pages making up the Library, by simultaneously acting as a "browser" in his or her function as customer.


1.2.   Digital Content

As regards content, the main aim of the virtual library is to identify, locate, create, organise and provide access to complete documents in any format: electronic and digital texts, computer programs, videos, or any multimedia material. These documents may be stored locally, in other words, placing them in the university's own servers and databases, or access to them may be obtained off-site, by connecting to the servers where they are located, whether they be commercial or free-access servers.

In any event, access to them is carried out in a totally user-transparent and user-friendly way, regardless of the origin of the document.

BUOC content divides into several categories: content elaborated by the actual Library using standard formats (HTLM, PDF, etc.); content purchased from commercial suppliers (electronic books, electronic journals, general or specialised databases, whenever possible in full text, etc.); and content located on free-access Internet sites.

Here are two examples of content elaborated by the actual Library: on the one hand, there is the joint project with the lecturers of the Faculty of Law to introduce into the virtual Library the electronic version of the Spanish Constitutions, and other legal regulations selected by the lecturers; on the other, there are conferences, articles, electronic books, etc. on subjects relating to the specialities of the university.
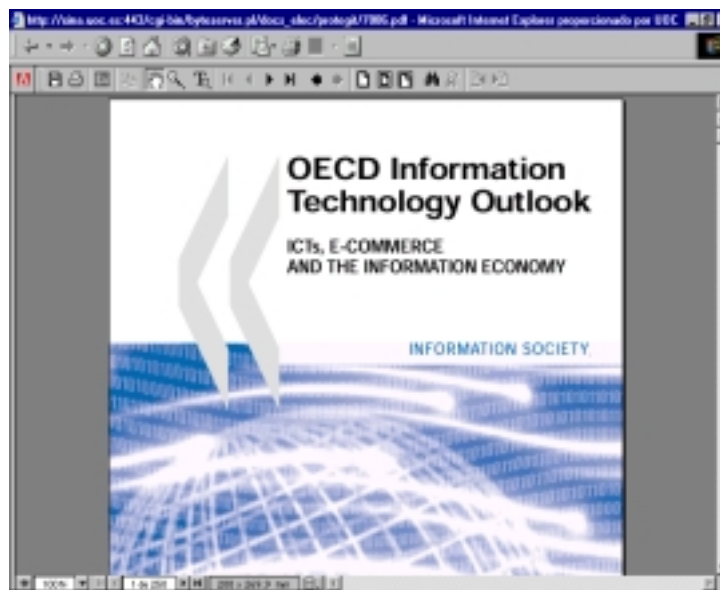
2. Electronic document

1.3. Virtual Services

The Virtual Library creates virtual bibliographical and documentary services for students, lecturers and researchers. In addition to the traditional services (loan, document finding, electronic distribution of summaries from journals, etc.), which adapt to the needs of the virtual user, other services have been developed whose main characteristic is they are customised, they are regularly updated and they are "push" services, in other words, the user receives them in a personalised way in his or her mailbox.

The following are the most important services developed to date:

Bibliographic Searches, a service of comprehensive documentary searches involving any subject of interest to the user.

Selective Distribution of Summaries of General or Specialised Journals. For those users requesting them, these summaries are sent to the user's mailbox as soon as they are made available.

The **Selective Distribution of Information** service (SDI) selects information and documents that match a thematic profile defined by the actual user. After an initial exhaustive compilation, the service is being updated with the periodicity requested by the user. Some instances of SDI involve information on legal computing, e-marketing, virtual organisations and companies, multimedia applications in the development of educational materials, etc.

3. Selective Distribution of Information

The **News Service**, a thematic electronic newsletter elaborated using a selection of articles and news featured in the most important specialised journals of domestic and international scope. The themes on which the service is being developed are those relating to the university's specialities, namely e-commerce, Internet and the law, computing and telecommunications, knowledge management, web-based training, virtual organisations, etc.

4. News Service

Official Publications: a "push" service which provides direct and daily access to autonomical, national and European legislation.

Economic Press: a daily service with links to the financial pages of the most important national and international newspapers and magazines, containing the most important news.

Personalised Libraries in Virtual Environments

The Library complements it documentary action through the development of projects for each type of user – students, lecturers, managers and researchers.

The essential advantages which virtuality offers in the development of libraries-documentary centres are that they allow for the introduction of library services into environments which are not typical of a Library . This makes it possible to develop "customised libraries" for each type of user. We shall focus fundamentally on the projects developed for the purpose of learning and teaching, although we will also mention the projects in progress available to management and research.

At this stage of its development, the Library is present in the following locations:

- at the actual Library;
- inside the Classroom, next to each subject;
- in the space devoted to providing support to lecturers;
- in the space where the management staff intercommunicate;
- on the web site created for the purpose of research and doctoral studies;

The new library not only transmits information, but it incorporates a new facet as a generator and distributor of information. This new facet contemplates the generation and/or preservation of documents which in some cases form part of the teaching materials and in some others are complementary to them.

Projects in the Sphere of Learning:

In addition to all the global services offered to students within the Virtual Library space, a **Classroom Library** has also been developed.

As the name suggests, this library is located inside the Classroom, next to each of the subjects which the student is required to develop. The project involves not only those bibliographical and documentary materials which the student will need throughout the semester of the course, but also those materials which the lecturer thinks that will be helpful for the development of the actual subject.

This project is the joint work of the Library and the respective Heads of the different faculties at the university.

The project is a response to the need of bringing the Library nearer to students, in order to provide them all the materials that will help them better to develop the established plan of the subject. In this respect, this implies introducing the Library into the spaces more related to teaching, right into the subject itself, and providing students with specific services relating to the subject jointly designed by lecturers and librarians.

The Classroom Library contains all those materials which the lecturer considers essential for the learning of the subject. These materials can be occasional (used only for a specific period) or of permanent consultation throughout the course.

The materials making up the Classroom Library have been grouped into three levels: basic, complementary, and consultation.

The basic materials section includes the documentation considered essential for the development of the subject, i.e., complementary material to the didactic materials, solution books for the exercises enclosed with the material, correction of errors, computer programs allowing the development of part of the subject (for subjects like Mathematics), etc.

The *complementary materials* section contains articles recommended to complete, or expand on, the content in the didactic material, selections of legal texts, collections of problems, auto-evaluation exercises, FAQs, on-line courses, etc.

The *consultation materials* section is made up of the documentary resources more typical of the Library, and is designed and managed totally by the Library. Included here are: the bibliography recommended for the subject, full-text specialised databases, databases instruction manuals, links to reference consultation works (encyclopaedias, dictionaries, etc.), a selection of specific Internet resources, etc.

5. Classroom Library

This application has been developed in web format and allows for the direct link with all materials and documents making up its content.

Teaching Sphere:

Just as the Library is present in the students' sphere, it is also present in the section devoted to providing teachers with all sorts of methodological resources to support their teaching action. In this space, the Library makes available to lecturers varied documentary resources and services.

The documentary services mentioned in the section above are some of the exponents of the services provided to lecturers: the Selective Distribution of Information service, the News Service, the documentary searches, etc.

In this section devoted to teaching, the Library includes web applications through which lecturers can not only "subscribe" to the subject-matters that are already in progress relating to these services, but they can also request new themes and profiles which may differ from existing ones or introduce some variations in them. These applications, which for the moment work for the DSI and News services, are featured automatically with the particulars of the user, who identified himself or herself on entering into the Virtual Campus.

6. Subscription form for the News Service

Other shared services:

Following on a request by the teaching staff, the Library also develops multimedia products which may be considered useful to the community and which can be located in the actual Library or in some of the spaces of the Campus which we have talked about previously. An example of this type of joint projects are some of the sensitive maps on different issues, for example the one providing access to the different Professional Associations of Lawyers and Notaries of national scope, or the one selecting world-wide financial instruments and markets.
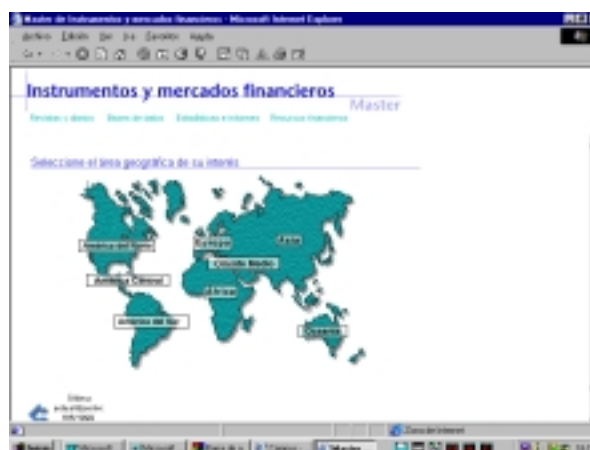
7. Map of financial instruments and markets

Other developments of this type are the Library's contributions to **didactic materials**, in other words, the Library as a subject: again as a result of a suggestion by teaching staff and as an example of the Library's involvement in the training of students, didactic materials have been elaborated to show and make known the workings of the most important documentary resources.

These manuals, which have been usually elaborated in web format and are integrated into the syllabi of the different faculties, enable students: to contextualise the use of each resource so that it may be useful not only in their studies, but also in their future career; to learn the characteristics of these resources, both as regards content and features; and to become familiarised with their use through practical exercises suggested by the actual teaching staff.

Management and Research

The University's management staff too has access to spaces which include customised services for the functions that they are carrying out, some of which coincide with the services devoted to teaching staff - SDI documentary services, News, Official Publications, etc. - or some others which are elaborated to suit their needs.

The sphere of research merits specific attention here too, owing to the importance of the services which the Library can offer, even if they are currently still being planned. For this reason, we shall not go into them in any great detail. We would like to single out, however, that the same virtual environment which has allowed us to develop these projects described throughout the chapter for a very specific user profile will enable us to plan and implement customised services for other types of users, like researchers or doctoral students.

Conclusions

The possibilities offered by virtuality have a great importance in the educational sphere and in all aspects relating to it. Evidently, libraries and documentation centres are not strange to this new virtual environment facilitated by the social, economic and, above all, technological change which has made it possible for librarians-documentalists to gain access to large amounts of information and documentation, allowing them to act as intermediary agents between this new scenario and the use that can be made of it by the different types of users.

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