

# Comunicaciones.

## Internet as a source and as a method for the transmission of historical knowledge. Information on Contemporary History<sup>(\*)</sup>

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*Internet oso informazio-iturri handia eta zabala da, non espezializazioa eta hierarkizazio gero eta garrantzitsuagoak diren, interesen arabera hain zatituta dagoen komunikazio-merkatuaren nahiak asetuko baditugu. Gaur badaude sarean unibertsitateak, sailak, institutuak, aldizkariak eta, oro har, Gaur Egungo Historiarekin zerikusia duten web tokiak, zeinen tipologia laburki hemen aztertzen dugun. Badago azaltzerik, hortaz, Gaur Egungo Historian espezialduriko edozein web tokik bete beharko lituzkeen ezaugarriak (edo bete ditzakeenak behintzat), edizio digitalaren ahalmen guztiak erabiliz ezagupen akademikoa ahalik eta hobekien eskaintzeko.*

*Giltz-Hitzak: Historia. Informazioa. Internet. Datu-baseak. Aldizkari elektronikoak.*

*Internet es una inmensa fuente de información, en la que cada vez es más precisa una especialización y una jerarquización para así satisfacer las necesidades de un mercado comunicativo progresivamente dividido en parcelas de interés. Una de ellas es la Historia contemporánea. Multitud de Universidades, departamentos, institutos, revistas y otros entes relacionados con este tema han puesto ya su página web en Internet, cuya tipología se analiza brevemente aquí. Es posible así trazar unas características que, a nuestro juicio, debería o al menos podría cumplir cualquier sitio web especializado en Historia contemporánea, que agote las posibilidades de la edición digital en aras de una nueva forma de transmitir el conocimiento académico.*

*Palabras Clave: Historia. Información. Internet. Bases de datos. Revistas electrónicas.*

*Internet est une immense source d'information, dans laquelle une spécialisation et une hiérarchie sont de plus en plus nécessaires pour satisfaire les nécessités d'un marché communicatif progressivement divisé en parcelles d'intérêt. L'une d'elles est l'Histoire contemporaine. Une multitude d'Universités, départements, instituts, revues et autres organismes ayant trait à ce sujet ont déjà créé leur page web sur Internet, dont on analyse ici brièvement la typologie. Il est ainsi possible de tracer quelques conditions que, à notre avis, devrait, ou du moins pourraient remplir n'importe quel emplacement web spécialisé dans l'Histoire contemporaine, qui épuise les possibilités de l'édition digitale au nom d'un nouveau moyen de transmission la connaissance académique.*

*Mots Clés: Histoire. Information. Internet. Bases de données. Revues électroniques.*

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## I. AIMS

The aim of this paper, in spite of its necessary brevity, is to review as exhaustively as possible the electronic sources of historical knowledge, with special attention paid to Contemporary History. We will in this way be able to establish a series of common characteristics concerning electronic publishing that will serve as a pattern for the design of a web site related to our field of research. We are thus trying to trace out a course, as much retrospective as prospective, with the aim of posing questions about the potential of the new forms of digital communication for the transmission of historical knowledge.

At the same time, we will try to evaluate the Internet and other off line electronic resources as a source, their reliability, their facility, their structure. In sum, this paper has three aims:

a) To establish a typology of sources for historical knowledge through the new technologies, as much on line as off line, basically the Internet and the information contained in physical supports such as CD-ROM.

b) To define the characteristics offered by the new technologies that can be useful in history teaching and research.

c) To define the lines of activity for the preparation of web sites related with historical knowledge, directed to the use of professionals, scholars and students.

## II. TYPOLOGY OF THE SOURCES OF HISTORICAL KNOWLEDGE.

### a) Teaching centres

There is not an abundance of teaching centres related with contemporary history present in the Internet. If we take as a point of reference the list of departments that appears in the server of the Department of Contemporary History of the University of Valencia, we find a massive presence of universities of the United States and Canada. A relatively important quantity of centres from the United Kingdom and Germany can be found. And very few from other countries. From Spain, only the University of Valencia, the U.N.E.D. and the University of Salamanca are to be found. To these must be added the server of the Contemporary History Association that presents its bulletin there and the LAPEPA Contemporary History distribution list<sup>1</sup>, which is a forum of debate for individuals interested in this field, which includes university specialists together with non-professional individuals.

This does not mean to say that there are no more to be found since this type of compilation is not an exhaustive one. But it does give us a at least an approximate idea of what is to be found in the net.

The first reflection this fact leads us to make is that historians have been slow to establish a presence in the net that would facilitate the access of other researchers or students to our departments.

In relation to the content of these servers, this too is very uneven. We find servers, such as the majority of those of the University of the Basque Country/Euskal Herriko Unibertsitatea, which only provide a list of its members and a summary of the memorandum of activities. In contrast to this, the

Valencian server<sup>2</sup>, to which we have referred above, offers, besides complete information on the teaching staff, 91 links with different servers related to history. The first block is formed by 31 links with databases, encyclopedias and dictionaries. The second, 46 links, journals and archives. And the third, 14 links with on line texts. That is to say, it offers the possibility of accessing a considerable number of sources both for research and for teaching activities.

In the case of the U.N.E.D. (the Spanish Open University)<sup>3</sup>, this offers fairly complete information about its teaching offer, something for which to be grateful for in a centre of its characteristics.

These two servers show in a fairly clear way what a complete server could be. On the one hand, offering information about the corresponding Department: its teaching staff, its educational offer, its research offer and its own resources for research. On the other hand, a multitude of links with servers of utility for its potential users.

### b) Publications present in the net

The presence of historical publications in the net is becoming more frequent, especially in the English-speaking world. But here we must make a distinction between those publications where only the contents lists are to be found, and those that include the texts. Obviously the latter are less abundant than the former.

A good connection for approaching these is *New Jour. Electronic Journals and Newsletters*<sup>4</sup> through which they can be accessed. There is also *History Reviews On-Line*<sup>5</sup>, dedicated to bibliographical reviews.

Other access routes are provided by the searchers such as *Yahoo*, in which we can find *The American Historical Review*<sup>6</sup>, *Media History Monographs*<sup>7</sup>, *Media History Project*<sup>8</sup> or *Storia della Storiografia*<sup>9</sup>.

The University publishing services are another form of access. For example, the Oxford University Press in which we find *History Workshop Journal*<sup>10</sup>, *Bulletin of the School of Oriental and African Studies*<sup>11</sup>, *The Cambridge Quarterly*<sup>12</sup>, *French History*<sup>13</sup>, *Journal of Islamic Studies*<sup>14</sup>, *Past and Present*<sup>15</sup>, *South Asia Research*<sup>16</sup> or *Twentieth Century British*

2. The address is <http://www.uv.es/~apons/quatre.htm#llibres>.

3. The address is <http://www.uned.es>.

4. The address is <http://gort.ucsd.edu/newjour>.

5. The address is <http://www.depauw.edu/~dtrinkle/hrol.html>.

6. The address is <http://www.indiana.edu/~amhrev>.

7. The address is <http://www.angelo.edu/aorg/cdpub/mhm2.htm>.

8. The address is <http://www.mediahistory.com>.

9. The address is <http://www.cisi.unito.it/stor/home.htm>.

10. The address is <http://www.oup.co.uk/jnls/list/hiwork>.

11. The address is <http://www.oup.co.uk/jnls/list/blsoas>.

12. The address is <http://www.oup.co.uk/jnls/list/camquj>.

13. The address is <http://www.oup.co.uk/jnls/list/french>.

14. The address is <http://www.oup.co.uk/jnls/list/islamj/hdb>.

15. The address is <http://www.oup.co.uk/jnls/list/past>.

16. The address is <http://www.oup.co.uk/jnls/list/sasjar>.

1. The address is LAPEPA@LISTSERV.REDIRIS.ES.

History<sup>17</sup>. In the Cambridge University Press we find *The Journal of African History*<sup>18</sup> and *Journal of American Studies*<sup>19</sup> amongst others.

For the Spanish case we have recourse to the ¡Ole! searcher and all that we find is the *Anuario de Historia de la Iglesia*<sup>20</sup>, published by the University of Navarra, the *Cuadernos de Historia del Derecho*<sup>21</sup>, of the Complutense University of Madrid and the page of the Association of Cultural Journals of Spain<sup>22</sup>. We hear that in early 1997 publication will commence of an electronic journal of contemporary history, without a paper support, with the title *Hispania Nova*, an initiative promoted by the lecturers Julio Aróstegui and Angel Martínez de Velasco.

In this field, as we mentioned above, the differences between certain countries are evident, and the Spanish case shows a considerable backwardness.

This leads us to reflect on the need to make our history journals, of which there are no small number, available on the Internet, at least their contents lists and abstracts to facilitate access.

### c) Libraries and encyclopedias (On line or CD Rom)

A third section of interest for historians is that of the libraries, documents and encyclopedias, both On line and on CD Rom.

In the case of the libraries it is now possible through the net to consult the files of a fair number both in Spain and abroad. This is probably the field in which Spain has carried out the most work to date and in which excellent results have been achieved. It is today possible for us to consult the catalogue of the National Library<sup>23</sup>, or the libraries of the Higher Council of Scientific Research<sup>24</sup>, or of a good number of universities (Valencia, Castellón, the different universities of Madrid and Barcelona, that of the Basque Country...).

Besides the libraries, it is also of interest to mention the database of local history of Cataluña<sup>25</sup>, developed in the Autonomous University of Barcelona by a team led by the lecturer Borja de Riquer. In it can be found thousands of references to publications since 1700 that refer to the local history of Cataluña.

Of great interest in this respect is the *Bibliographical Guide for History Students* of the University of Reading<sup>26</sup>, in which we find a guide for students of how to access a wealth of bibliographical information.

With regard to encyclopedias, the situation is once again uneven. In the Anglo-Saxon case we can find *Britannica's Lives on-line*<sup>27</sup>, which provides 17,000 brief biographies taken from the Encyclopedia Britannica, the *Biographical Dictionary*<sup>28</sup>, where we can consult 18,000 biographies, *Biography*<sup>29</sup> with some 15,000 biographies from the Cambridge Biographical Encyclopedia. In Spain there are no on-line encyclopedias, although at present the Society of Basque Studies - Eusko Ikaskuntza is preparing an electronic edition of the *Enciclopedia General Ilustrada del País Vasco*<sup>30</sup> (better known as the Enciclopedia Auñamendi) .

Of interest on CD Rom is the edition of the *Dictionary of National Biography* where the possibilities in relation to the edition printed on paper are increased, since it is possible to organize searches starting out from numerous key words and not only the names of the individuals<sup>31</sup>. In this field in Spain some publications are beginning to become available. Recently, the *Historia Universal* (CD-ROM), in two volumes, came on to the market. The first volume entitled Great civilizations, personalities and historical events, and the second: From peoples to states, personalities and historical events. And also a *Historia de España* directed by J. Hernández Aliques in 14 volumes together with CD ROM, which covers pre-history to the present day.

With respect to the documentation that we can find on Internet, there are different servers that offer access to documentary sources. The *Institut d'Etude Politiques* de Lyon<sup>32</sup> offers links with several journals of history and documentation for the XVIII to XX centuries, and the *EuroDocs*<sup>33</sup> offers primary historical documents of Western Europe.

Finally, there is the Gutenberg project<sup>34</sup> whose aim is to offer users simple and swift access to books and other electronic material.

A first conclusion that is suggested by what has been seen so far is the scarce development achieved in the use of the new technologies in the field of history, where a great unevenness can be observed between different countries.

The possibilities that are offered by these technologies are infinite, both for offering and for obtaining information.

## III. CHARACTERISTICS OF ELECTRONIC PUBLISHING APPLICABLE TO HISTORY TEACHING AND RESEARCH.

The characteristics of electronic publishing that can be applied to the transmission of historical knowledge are essentially the same that would be applicable in any minimally professional information server, although the specificity of the aims of a server of historical information mean that some of

17. The address is <http://www.oup.co.uk/jnls/list/tweceb>.

18. The address is <http://www.journals.cup.org>.

19. The address is <http://www.journals.cup.org>.

20. The address is <http://www.unav.es/publicaciones/teologia/ahig/indice.html>.

21. The address is <http://www.ucm.es/info/hisdere/cuaderno.htm>.

22. The address is <http://www.informet.es/arce>.

23. The address is <http://www.bne.es>.

24. The address is 161.111.10.10.

25. The address is <http://www.Diba.es>.

26. The address is <http://www.reading.ac.uk/AcaDepts/lh/History/bibguide.htm>.

27. The address is <http://www.eb.com/bio.html>.

28. The address is <http://www.tiac.net/users/parallax>.

29. The address is <http://www.biography.com>.

30. The address of the documentation centre is <http://suse00.su.ehe.es>. They are in the process of placing diverse information at the disposal of users

31. A more extensive commentary in ABBATTISTA, Guido. "Dictionary of National Biography on CD-ROM. Oxford University Press, 1995".- In : *Storia della Storiografia*.- (1996) n. 29, p. 133-136

32. The address is <http://iep.univ-lyon2.fr/histoire.html>.

33. The address is <http://library.byu.edu/~rdh/eurodocs>.

34. The address is <http://www.promo.net/pg>.

those elements are used more than others. And it is, above all, those elements that differentiate digital publishing from traditional publishing, which take the former further than the latter, that are of real interest.

Principally, we are referring to six characteristics that, in our opinion, represent an advance over the traditional publication (generally printed, hence based on the text) and that are the characteristics that define digital publishing: its multimedia character, non-sequential access (based on the hyper-text and the hypermedia), the capability for search and recovery (interactivity), the possibility of access from any point, which means overcoming barriers of space and time, the possibility for facsimile reproduction (with much greater capacities than traditional facsimile) and the saving of costs over traditional publishing. We will insist on the applications that are held by these characteristics in the field of history.

Nonetheless, we do not wish to give the impression that there are only advantages in digital publication. We will therefore refer to the inconveniences. Without trying to provide an exhaustive list of the latter, three at least are apparent, and can become extremely counterproductive: credibility can be strained in a world full of links that in their turn lead into an unending series of links, in such a way that extreme link capability can drift into an incoherent *itinerary* with respect to what was originally sought; in the second place, it is easy for there to be a disorientation or loss, resulting from - and this would be the third disadvantage - the lack of a clear hierarchization of on-line contents.

But we will deal with these questions in order, starting with the clearly advantageous characteristics.

a) In the first place, multi-media. Facing the clear predominance of the text in the information produced by Western societies in at least the last five centuries, electronic publishing, *on line* or *off line*, makes it possible to introduce the word, sound and image; furthermore, self-running programs can be introduced, Java *applets*, search engines and databases. The hypermedia, or the "hypermedia systems" can be defined as an "organisation of textual, visual, graphic and aural information through links that create associations between related information within the system"<sup>35</sup>. If a link unites two or more pieces of textual information, we find ourselves, as we know, facing a hypertext; if it unites two or more pieces of sound information, we are facing hyperaudio; and if it unites two or more pieces of visual information, we are facing hypervisual. But it is most common for the different types of information (textual, sound and visual) to be integrated in an ensemble or structure, in a system, and thus the relationships or links are established in a combined form between them. That is the hypermedia. In this way the attempt is made to reflect the system, of human thought in a way that is even more faithful than with the hypertext by itself. Human thought is not only verbal, nor can it be reduced to text alone.

The new media thus provide the possibility of more faithfully reproducing, at least in theory, the stream of thought of our mind. As Jean Cloutier says, the possibility is opened up of a "polysynthetic and integrating" language<sup>36</sup>. Polysynthetic because it agglutinates different elements, that take on mean-

ing only within the ensemble. It is syncretic, and provides access to the three spatial dimensions and to the temporal dimension. These characteristics could be accentuated with the popularization of the techniques known as "virtual reality", since, using helmets and special gloves equipped with sensors, the user physically experiences movement in the three spatial dimensions. This can be applied in history, for example, in the reproduction of buildings, especially of those that have disappeared and whose only access would be virtual.

b) Non-sequential access: traditionally, it has been held that the text is constructed in a sequential manner, with thoughts linked together in a chain, one after another. The concept of sequential thought is due to the philosophy of Thomas Hobbes, who, in his famous work *Leviathan*, explained in its opening chapters how "by sequence or linkage of thought, I understand that succession with which one thought follows another, and that, to distinguish this from the discourse of words, receives the name of mental discourse." Nonetheless, the mode in which these thoughts are linked together is not always the same, and in any case it is each person who, on the basis of determinate questions (tastes, interests, time, etc.) decides which is the course that is to be followed. To rephrase this using the words of Jorge Luis Borges, one is not dealing with a single path, but with a "garden of forked paths".

In some types of text, for example scientific publications, this strictly sequential character is broken in a certain way by the footnotes: we must leap from one text (the principal account) to another (that of each of these notes), linked together at a certain point, for example to clarify some obscure point, in order to know what the source of some quotation is, or to expand relevant information. But in the majority of the texts, in journalistic texts for example, sequential thought dominates.

However, sequentiality is a characteristic that refers more to the production than to the reading of a text. In effect, the reader does not have to follow, without the least deviation, the course marked out by the producer. That is an error that has been systematically committed, more so since the concept of mass communication was introduced: a single emitter, and thus a single product, for a single reader, although a mass one it is true. What has clearly not been taken into consideration is that this mass is divided into individuals, and that each person, while he/she might very well have common interests with the rest of the "ideal readers" of mass journals, above all possesses his/her own opinions, motivations and interests.

That has meant that the attempt is made to offer a more individualized product, a product that does not indicate a single path to be followed, but rather proposes a series of paths by which each reader, depending on those characteristics proper to him/her, can enter as they wish. Above all when the quantity of information that is dealt with is increasingly great, to such a point that it becomes obligatory that each should recover only that which is really of interest to him/her and that this be done following the route, or the sequence, that is of greatest interest to each individual. We are here confronted by a leap from the text, the sequential discursive construction, to the hypertext.

c) Capability of search and recovery (interactivity): interactivity is defined as the capability that the user has to "question" the system, and thus lay the foundations for recovering the information in the desired form. Here the emitter does not send a unidirectional message, without response capability, that the receiver only has the capability of accepting or not. In a certain way, this breaks with the concept of mass media, as we have explained. The receiver thus has full power for taking

35. CARIDAD, Mercedes; Purificación MOSCOSO. *Los sistemas de hipertexto e hipermedios. Una nueva aplicación en informática documental*. Madrid: Fundación Germán Sánchez Ruipérez, 1991.

36. CLOUTIER, Jean. "L'audiovisuel et le multimedia". In: *Communication et langages*, number 99. Paris: Retz, 1994, p. 51.



decisions and giving shape, within certain broad limits, to his/her own message, as well as to hold a dialogue, in one way or another, with the emitter. This is achieved in various ways. One of them is by means of sending messages through electronic mail, the Internet service that is most used; this is so to such an extent that a study of the Universal Postal Union, of October 13th 1997<sup>37</sup>, asserts that by the year 2005, 10% of written communication will be carried out using electronic mail. But, above all, this capability of response is produced by means of the incorporation of search engines in databases, some of these documentary ones, capable of recovering in a very brief lapse of time very specific information requested by the user from massive archives.

d) Breaking the barriers of space and access from any point: the possibility of having access from any part of the world (at least, the Western world) to any on line service situated at any point of the world is one of the capabilities that heralds the superiority of electronic publishing in telematic networks over the physical distribution of conventional publishing. To the extent that virtual archives and libraries proliferate the need for personal movement by the researcher will become unnecessary. To this end, of course, the new digital archives will have to be at least as reliable as the presently existing ones, and as complete as them if not more so.

e) Facsimile reproduction: nowadays, the PDF format, from the Adobe company, a *de facto* standard, makes it possible to obtain and place digital facsimiles on the Internet or on physical supports, with the same appearance on the screen as on a conventional page or with a conventional image. There is the advantage that the image can be magnified, hypermedia links, or design search systems can be included. This is one alternative confronting the freer design of HTML language that has been more specifically designed for the World Wide Web. For the inclusion of digital archives, the PDF format has notable attractions, and could even displace - this is happening in some libraries - microfilms, because of its cleanliness, rapidity and the faithfulness of the reproduction.

f) Cost saving with respect to traditional publishing: digital publishing, above all if it is on line without a physical support, eliminates the costs of material (paper, microfilm, recording supports, etc.), the costs of publication and distribution. In a market such as the academic one, with a public that is often very reduced numerically, due to its specialisation, and on occasions highly dispersed geographically, conventional publishing of a book or journal is a very expensive undertaking. This is solved avoided with electronic publishing.

#### IV. DESIGN OF AN INFORMATION SERVER OF CONTEMPORARY HISTORY ON INTERNET

Having considered the characteristics and potential of digital publishing, it is our understanding that the design of a web site on Internet dealing with contemporary history, for example corresponding to a university department or a section of a research institute, should, or at least could, house the services that we will be expounding, basing ourselves as much on pre-existing information, on a given product, as on a design specifically thought out for the new medium and impossible to carry out because of the limitations of conventional publishing.

In the first place, information must be offered about the institution itself. The physical address of that institute or

department, besides its electronic address (URL to connect with the web page, and address for electronic mail), information about the authorities, administrative staff and the teachers and researchers. This could, for example, take the form of an independent personal page that provides, besides personal and academic data, a curriculum of each of them, with a possible connection with their publications, research, articles, etc. (either published in their integrity, or an abstract). Of course, interactivity must be encouraged, to which end it is essential that there should be an electronic mail connection that foments contact between researchers. A connection is also possible, for example, with the subjects that are taught, with information on programs, timetables and material that can be accessed by students. Included amongst this material could be notes, specialized glossaries and dictionaries.

Linked with this, it is necessary to offer a memorandum of the institution's activities, well hierarchized by means of internal links. Resources that are not strictly textual can be added: for example, images, or even sounds, always pursuing effectiveness and not the merely spectacular. In this same memorandum up to date information can be offered on courses, grants, research grants, seminars, conferences and one day events that are being organised by the centre or that its staff are participating in, and that might be physical or virtual, through the remote access networks. Information will also be given on workshops, theses defended or underway, (the model is clearly that of the Teseo service of the Spanish Ministry of Education and Culture), with a search engine where they are very numerous.

Equally, information will be given, if possible with a search engine, of the institution's publications, as well as of those available in its library, with on line access to all of those available of the possibility of purchase where these are published by the institute. Digital publication makes it possible, let us not forget, to establish key words of access to specific documents, in such a way that they are not of free availability, which makes possible a similar control to that existing in physical libraries with access permitted only to those who meet the requisites for consultation, and even a system of payment is possible. If this is established, we think it would be best to pay by the page consulted, or acquired, and not for the service as a whole. The same holds in the case of the journal, which we will be dealing with later on: one buys a printed journal because certain texts are of interest, although the whole service is paid for. That does not necessarily have to be the case with on line access, as it is possible to know who, for how long and to which documents access is obtained. Another possibility is feasible, that some electronic journals have already explored: sending the material by electronic mail, either in the form of ASCII text, or in the form of a digital archive attached to the e-mail (*attachment*), in the way of a traditional subscription, although in a more comfortable, swifter, cheaper and automatic form.

A complementary service is a list of addresses (URLs, electronic mail, physical addresses) of similar institutions. It would be advisable to ensure that reciprocity exists and return links, which will make possible an eventual return to our server, and thus avoid leaving and losing our homogeneous ensemble with the resulting disorientation and loss of credibility.

The publication of a journal is another highly interesting part, perhaps the central one, because of its concept of dealing with up to date information. This is a well prepared terrain, as the interest in the new forms of serving information dates back to the 1980's, when the first teletext and videotext ser-

37. *El País*, Tuesday, October 14th 1997, p. 27.

vices appeared. In 1985, Juan Olaechea Labayen correctly summarized what the panorama would be for scientific publications facing the new technologies. Modern scientific literature, according to Olaechea, with its growing requirements of concision, besides the urgency in the communication of work that has been imposed by modern research, motivated the passage from the book to the journal, as a more agile form of publication. On the other hand, together with the increase in the production of scientific literature, some publications have become more evidently outdated. The relevance of some texts is now more limited than it was some decades ago, since the advance of science is much more rapid. If a book took three to five years before it appeared in print, the journal reduced this time to one or two years, but the majority of the steps to be followed in publication did not disappear: it was necessary to prepare the texts, lay them out, prepare photoliths with which the volumes would then be printed. A process that, although made cheaper by information technology, was still an onerous one, above all when printing a limited number of copies<sup>38</sup>. Copies that, on the other hand, then had to be distributed physically, in some case around the planet. Distribution had to be entrusted in general to the postal services. Immediateness, necessary in modern science in publicizing its latest advances and opinions, was seriously reduced.

The scientific journals thus enjoyed the advantage of not having to be concerned with the costs of printing and distribution: a single copy was placed in a server, to which all users that wanted to or had permission could accede. On the other hand, electronic journals can offer access to great databases, either belonging to the institution or external, that it would be impossible to fit on a paper edition. In this way the foresights formulated by Olaechea in 1985 have been fulfilled: "Any user will have the capability to obtain, after examining the material, the complete text of those documents that are useful to him in his work, which are susceptible to reproduction on the screen at a regulated velocity and printed on paper if desired." "Electronic diffusion", adds Olaechea, "offers the great advantage of its rapidity and of its universality. From the instant at which the document has been accepted and introduced into the system it is then at the reach of the users"<sup>39</sup>. Electronic publishing offers besides the possibility of rapid access to parts of a text and to its different levels (bibliographical notes, for example), as well as the inclusion of multimedia elements (sounds, images in movement, graphics, animations).

Nonetheless, there is still a way to go before electronic publishing and on line transmission completely replace paper. In 1994, Karen Hunter calculated that only 1% of scientific literature was produced principally and uniquely in an electronic format<sup>40</sup>. The number is growing rapidly, however: in 1994 the Directory of Electronic Journals, Newsletters and Academic Discussion Lists of the Association of Libraries recorded 440 titles, against 110 in the year 1991<sup>41</sup>.

As Josep Santidumenge<sup>42</sup> has pointed out, there are two

38. OLAECHEA, Juan. "Las publicaciones periódicas científicas y la difusión electrónica. In: *Boletín de la Anabad*, XXXV, number 4, 1985, p. 501.

39. *Ibidem*.

40. HUNTER, Karen. "Issues and experiments in electronic publishing and dissemination". In: *Information Technology and Libraries*, June 1994, p. 131.

41. Quoted in SANTIDIUMENGE FARRÉ, Josep. "L'edició electrònica de revistes de dret i la recerca d'informació jurídica a través d'Internet". In: *Revista Jurídica de Catalunya*, nº extraordinario. Barcelona: Col.legi d'Avocats, 1997, p. 346.

42. *Ibidem*, p. 345.

types of electronic journal, those that follow from a previously printed edition and that are then digitalized (in PF or HTML format) and those that are planned specifically for the Internet. In reality, the latter not only participate in the characteristics of the printed journal, but transcend them and participate in the conception of a database and a digital archive. The limitations of space are overcome, in such a way that a direct connection can be offered with the sources making it possible to deepen historical knowledge. In opting for this alternative, the more interesting one, the journal, as a server space where information is, rather than periodically, continually brought up to date, without of course losing, and this is important, the necessary scientific rigour when it comes to deciding whether or not to publish original material, must necessarily be complemented by a powerful digital archive, where images (photographs, films), sound recordings and facsimiles of documents will fit, together with a transcription should the case arise. An archive of contemporary history, we hardly need to insist, must be a multi media one. All of the above equipped with a suitable search system and a hierarchical organization.

The whole of this archive (which we will continue to call a journal, although it must not be a mere transposition of the prior printed version, but rather an entity equipped with its own personality; and the multi-media files plus the search and accessing systems, whether restricted or not, by payment or not) must be continually brought up to date. The figure of the *webmaster* becomes necessary, a person able to design web pages and all the programs that lie behind them, a person midway between a librarian or archivist familiar with the peculiarities of electronic documents, and a computer expert capable of programming the elements necessary for this labour to be fulfilled successfully.

Of course, it seems clear that, although traditional publishing will not disappear, it is obliged to coexist with digital publishing, because the latter combines the conditions of flexibility, economy, easy storage of great quantities of information of very diverse types, integration of the same and even of less impact on the environment. And, within electronic publishing, there is no doubt that, except for very specific uses (storage of digital information in physical libraries), on line publication is asserting itself over the physical support (CD-ROM fundamentally), and because of its much more rapid access, from any point, without the need for physical distribution, and its capacity for constant renovation.

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