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The electronic journal service at CERN, a first evaluation:

User access interfaces and user awareness

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Introduction

CERN is the European Laboratory for Particle Physics located in Geneva. It provides scientific research facilities to some 3000 permanent staff and 6500 visiting scientists, engineers or technicians from all over the world, who come to explore and study the atom.

These scientists exchange theories and participate in large experiments. The development of their work and the results are regularly described in scientific articles. These are submitted as preprints to our server and subsequently to the now famous Los Alamos preprints electronic archives. In 1997, some 1800 CERN articles were published in journals or conference proceedings.

Towards a journal desktop service

Preprints and printed journal articles are complementary publishing outlets for authors. But while in a preprint archive it takes a matter of hours from submitting an article to its publication on the Web, publishing the same article in a printed journal may take months. These delays are less with electronic publishing. And every day new readers, well used to online technologies, discover the advantages of a digital library environment, working with full-text preprints and journal collections available on their desktop. Users value the reliability and stability of an integrated service and the time saving.

But there is still the problem for users that journals put on the Internet are spread over different publishers' web sites. The library at CERN has recognised the need to provide effortless access to our electronic journals collection. This meant that we need to develop, integrate and adapt specific online interfaces for these documents.

Present collections

Presently, besides the paper collection which includes some 480 scientific titles, we offer access to 260 full-text online journals. Due to repeated acquisition budget reductions and regular subscription price increases, we have had to limit our online journal acquisitions within the printed subscriptions allocation. (see also: Bulletin des bibliothèques de France; 44(2), 1999, pp. 27-32)

As a consequence, titles have been selected when they are:
- available at the same or lower price than the paper version ;
- accessible without charge as part of the paper subscription ;
- acquired through a license between a publisher, Springer, and a consortium of Swiss academic and research libraries ;
- available free of charge on the Internet and considered of scientific interest for our community.
We also point to some 200 online tables of contents which are available free of charge to us.

For each new title, we always test the service and the access reliability. We have a strong preference for IP-based access control for the whole site. Titles that require personal ID and passwords access are ignored.

The resulting collection can be retrieved from our OPAC catalogue or from dedicated electronic journals web screens described below.

Expectations

The main benefits for the library expected from electronic journals are the savings on processing time and of storage space, and hopefully in the future reduced or stabilised costs. We like to cite as an interesting model, a new journal in our field: « *JHEP, Journal of high energy physics* », produced at SISSA (Trieste), and published by the Italian Physical Society. This title is primarily an electronic journal, peer-reviewed, and accessible without charge on the Internet. Articles are added as they become available and later a 'printed archive' volume is published on paper and distributed on subscription at a reasonable cost. Physicists support and encourage this new publication, as much for its quality as for the distribution speed of the full text published articles.

Towards a better access

At present, we feel that we are providing a useful service, and we have the support of our community, but as explained further in this article, we need a better understanding of readers' attitude towards electronic resources.

The future should bring improvements. Currently there are a large variety of publication and distribution patterns for electronic journals. And the management and distribution methods of electronic journals are cumbersome, but we hope that in the future publishers will harmonise their services as they have done with printed editions. We also hope for the organisation of electronic archives by national or international institutions. We believe these two developments should enable libraries to provide a more satisfactory integrated service for electronic resources.

Cataloguing

At the present time the CERN Library runs Aleph 330 documentary software with its in-house developed MARC format. The cataloguing rules are based on ISBD. By the year 2000 the Library will have installed the new Aleph 500 version and will convert its data into the USMARC format. The anglo-american cataloguing rules (AACR2) will then be adopted, along with the ISBD(ER) for the electronic resources. OCLC responded to the need for a focused cataloguing treatment of electronic resources by integrating discussion of Anglo-American Cataloguing Rules, 2d ed. (AACR2), the USMARC fields, and the International Standard Bibliographic Description (ISBD(ER))[1].

Cataloguing developments of the electronic journals

When the Library catalogued its first electronic journals in 1996, few guidelines or standards were available. Our initial choices have been confirmed or have evolved according to the recommendations of the main bibliographic institutions, namely the Library of Congress and OCLC.

The Library decided to allocate a proper bibliographic record to each electronic journal. CONSER suggests either one record with mention of the existence of the online format in the paper journal bibliographic record, or two bibliographic records, referring respectively to the printed and electronic editions. The Library has chosen the second method, which presents various advantages.

Having a bibliographic record specific to each format means that in addition to the bibliographic data, some useful hypertext links can be put on the Web OPAC, enabling navigation between both versions. Having a separate record makes it possible to create lists for the Web automatically. Also, the printed and online electronic collection catalogues can be easily differentiated when produced.
Furthermore in our integrated system the existence of separate records for e-versions allows us to manage e-journal subscriptions separately and easily.

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[1]

Olson, Nancy B., Ed. Cataloging Internet Resources: A Manual and Practical Guide. 2d ed. Dublin, OH: OCLC Online Computer Library Center, Inc., 1997 [http://www.purl.org/oclc/cataloging-internet]

Location and electronic access

Four new fields have been introduced in our library catalogue record in order to describe the characteristics of the electronic resources available on the Internet.

The first added field is a sort of semaphore signal that indicates either that access is restricted to the CERN Intranet or that the full text is freely available on the Internet. A second added field is dedicated to the Uniform Resource Locator (URL), together with a standardised note that qualifies the resource type: i.e. online version of a printed journals, or an electronic only journal. A third field links both versions of a periodical with their system number.
Finally a fourth new field defines the electronic services the publisher offers free of charge: tables of contents, abstracts, selected articles. The field is structured to contain the URL, to describe the service type, to give it a code for retrieval purposes, as well as to indicate its time span.

Mining for data, and maintaining its validity, is time-consuming but is proving worthwhile for the users.

A medium level of cataloguing is carried out by our library. The journal bibliographic record provides the electronic format availability, the holding information, or a bibliographic change. Each of these data achieves the complete description of the electronic resource and supports the user interfaces features.

Interface to electronic journals' collection

Readers can access full text articles or online tables of contents in different ways.

One point of access is through the OPAC, i.e. the GUI to the catalogue. This interface has been designed in-house, with bibliographic records offering links to the electronic documents. The OPAC mostly serves the needs for searching.

For browsing, we have developed two lists. In the first the titles are ordered alphabetically, with clear mention of documents with restricted access. For each title with a corresponding paper version, a link to the local holdings is indicated. The titles with full text availability have been graphically distinguished from the titles with tables of content access. What is special about the alphabetical list is its automated production. The list is generated via a program that queries the catalogue and retrieves all titles with online features. It produces and formats the html files, which are then put online. This development has considerably reduced the time needed to maintain the list, which was previously done manually. The sine qua non to its production is correct cataloguing.

The list by subject allows the reader to choose a specific subject category and to browse the journals' list under that heading. The links lead to the bibliographic records in the OPAC, from where access to the document is possible.

Another interface to electronic journals, called GO DIRECT, is a Web form that retrieves requested articles on the fly if the reader has the precise reference (i.e. title, year, volume and page number). The engine avoids unnecessary navigation through publishers' web pages. It was invented and launched by a physicist at our institute. He felt it was necessary to have a search tool that could speed up the access to full text articles. The facility offered by GO DIRECT corresponds well to our users' needs: because in fact they usually do have precise references. The Go Direct

script constructs a URL from the citation the user supplies. Because the publishers use URLs based on citations it is possible for the script to reliably predict the correct URL from the citation.

This understanding of the logical construction of URLs is also widely used to insert a link in the OPAC for preprints to the electronically published version of a scientific article. The method permits immediate access to both the preprint and the published versions of the article.

Promotion and evaluation of the service

One of the main goals of the library service is to circulate information on the availability of new services and products to readers.

The Library is very keen to promote the use of electronic journals: for example by awareness raising advertisement campaigns. There are many reasons for this. One is our view of electronic journal access as a service, for everybody, and which has to be successful, i.e. used. The electronic journal gateways described above serve first the readers who are already familiar with online journals and then should persuade the others to access journals from their desktop. The whole community should experience the facilities offered by the electronic medium.

Another reason to develop this service relates to foreseen cost savings.

Finally, we believe that electronic journals are to be an important step towards the digital library, reducing the amount of paper that needs to be stored in the library, and making available diverse information sources.

After promotion the next step in the development of the service is proper evaluation. It is important for us to measure the acceptance of electronic journals by our readers and the usage of our collection.

At first, observation of attitudes towards electronic journals has been primarily informal at the information desk in the Library.

Then, we decided we needed a user survey. On the one hand, we have analysed the connections to the web pages dedicated to electronic journals. This quantitative data has informed us about the extent of the usage. More than 35% of the population on the site seem to have visited the pages within a period of 4 months. 30% of these connections are by regular readers.

On the other hand, an online questionnaire was launched, requiring the opinions of both users and non-users of electronic journals. We considered the data as qualitative, because of the low response rate. The analysis of the questionnaire's data has established the high degree of satisfaction of the users with electronic journals and the service provided by the Library as well as the willingness of the non-users to adopt new reading habits.

In the future, we hope that publishers will collaborate in the task of measuring the usage of electronic collections of journals. At the moment, we have only been able to collect data on the global usage of our collection and had to rely on in-house skilled methods used in our recent survey. But publishers, we think, are able to, and should provide detailed figures about the usage of individual titles.

When carrying out our survey, we contacted our publishers in order to obtain statistics. The result of our enquiry established that they are not yet organised to answer detailed questions. In the future we hope to get data in the form of log files in a standard format or at minimum, simply the willingness to collaborate in usage analysis.

Further reading

Chaney, E.; Bulliard, C.; Christiansen, C.; Cressent, J.-P. *Une bibliothèque de recherche face à l'édition électronique: l'exemple du CERN*, in: Bulletin des bibliothèques de France, 44(2), 1999, pp. 27-32.

Le Coadic, Y. F. Le besoin d'information: formulation, négociation, diagnostic. Paris: ADBS, 1998 (Collection Sciences de l'information, série Etudes et techniques).

Peterson Bishop, A. *Measuring access, use, and success in digital libraries*, in: The Journal of electronic publishing [Online], 4(2), 1998. http://www.press.umich.edu/jep/04-02/bishop.html

Pettenati, C. *What is a virtual library?*, in: ELAG, 17th Library System Seminar, Graz, 14-16 April 1993, pp. 145-163.

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URLs

CERN Scientific Information Service homepage
http://wwwas.cern.ch/library/

What is the APS link manager?
http://publish.aps.org/linkfaq.html

Figures

Fig.1 E-journals homepage:

http://wwwas.cern.ch/library/electronic_journals/ej.html

Fig.2 OPAC screens of the electronic and the printed editions of *Classical and quantum gravity:*

2.1

http://weblib.cern.ch/cgi-bin/showfull?uid=0571916_24074&base=CERCER&sysnb=0236052

2.2

http://weblib.cern.ch/cgi-bin/showfull?uid=0571916_24074&base=CERCER&sysnb=144241

Fig.3 GO Direct:

http://wwwas.cern.ch/library/electronic_journals/from_ref_to_text_AE.html

Please fill in the form with following example:
Electronic letters online, volume 35, 1999, page 1

Fig.4 OPAC information of a preprint with both access to the original full text document and to the published version:

ETHZ-IPP-PR-97-01 . (hep-ex/9705004) . **Towards a Precise Parton Luminosity Determination at the CERN LHC** . by Dittmar, M ; Pauss, F ; Zürcher, D ; (14 p) . 1997 . *Publ. Ref.: Phys. Rev., D : 56 (1997) 11 7284-7290* - Published version - Access to fulltext document

More information - Mark document