



## ONLINE JOURNALS: THEIR IMPACT ON DOCUMENT DELIVERY



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## INTRODUCTION

There is a common concern amongst academia librarians of interlibrary services about the influence of the growth of electronic journals (e-journals) on document delivery, in particular whether the increase in e-journals will result in a decline in document delivery services. This study examines how full-text articles are reducing the traditional level of requests at a university library.



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## INSTITUTIONAL BACKGROUND

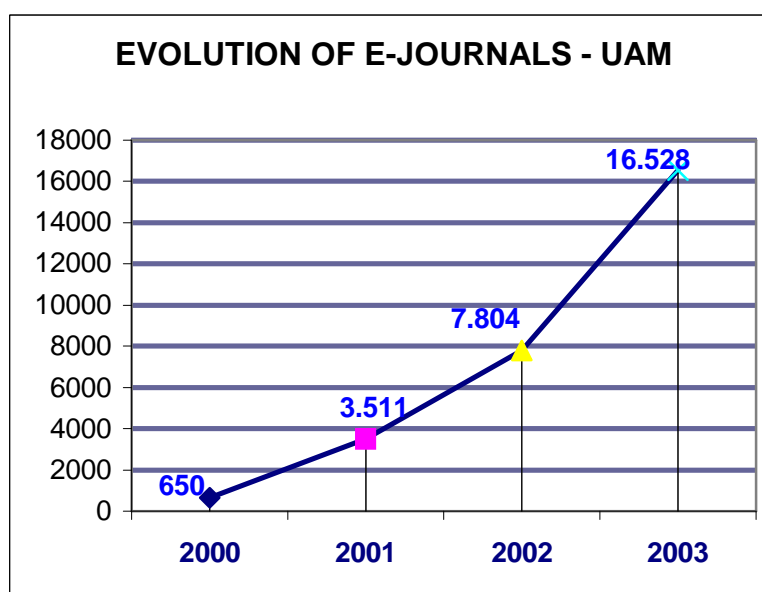
The Library of Medicine of University Autonoma of Madrid (UAM), Spain, serves 1,300 students and also serves the teaching and research needs of 600 PhD students, and 350 faculty members (lecturers and professors).

The productivity of publications of members in 2003 was: 310 articles, 177 dissertations and 72 research projects. The impact factor (IF) of publications was 16.7, on average, for the years 1990-2000, with an acceptable international visibility.

## E-JOURNAL COLLECTION

UAM libraries have experienced a huge growth in the number of e-journals in recent years as shown in Figure 1.

**Figure 1** Evolution of e-journals – UAM



The growth is largely due to cooperative participation in the Madroño Consortium, whose collection represents 58 per cent of e-journals. With 9,556 titles in 2003.

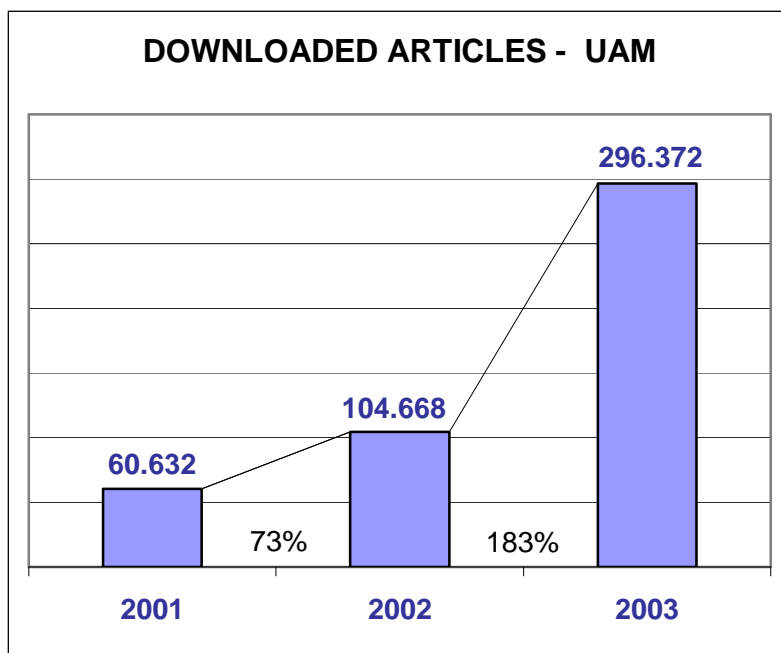
It is notable that 2,200 of those titles are biochemical journals and currently we hold 29 per cent of journals indexed on Medicine in electronic format. In addition, 38 per cent of the total of these titles are included in *Journal Citation Reports* (ISI).

## USE OF ELECTRONIC RESOURCES

It has been difficult and complex to obtain reliable data from publishers. This has created problems in obtaining accurate use statistics for our medical journals.

However, we have used statistics of the general use of the collection of UAM's e-journals, as indicating meaningful data for the current trends of full-text usage. A summary is shown in Figure 2.

**Figure 2** Downloaded articles – UAM



Full-text downloaded articles during 2001-2002 rose by 73 per cent and 2002-2003 by 183 per cent, which indicates an enormous increase in the last three years.

These data show a significantly high acceptance of e-journals and can be used to measure how familiar the researchers are with current journals, which surpasses all our expectations.

## METHODOLOGY

The Library of Medicine has conducted this study using both quantitative and qualitative data.

The qualitative data were gathered through a questionnaire about the impact of electronic resources and the use of ILL.

## SUMMARY OF THE QUESTIONNAIRE RESULTS

A total of 86 users completed the questionnaire, comprising academia staff, post-doctoral students, professors, and postgraduate research students.

We were interested in some variables about user behaviour, points of view and opinions concerning databases and e-journals:

- The first question focussed on which databases were consulted. The results confirmed that Medline is the most important database for researchers, followed by Web of Science – ISI, Current Contents and Cochrane.
- We asked users about the access to Medline via the Ebsco Interface, which provides links using SFX to articles available in e-journals subscribed to by the Library of UAM: The results indicated that 65 per cent of users chose PubMed rather than Ebsco/Medline.
- The users were asked about the greatest advantages of e-journals. First came the time saved in access to e-journals followed by the direct accessibility and up-to-date information that e-journals provide over print versions, and the possibilities of downloading and filing.
- Of respondents, 81 per cent preferred the online version to the print, which is interpreted as an overwhelming acceptance of e-journals in terms of availability.
- The advantages of new technological possibilities in e-journals (animation, multimedia, integration of video) were provided by only a few users as advantageous. This may indicate that only a few of the researchers were using e-journals which incorporate multimedia or other new technologies. We were interested in the importance of quality information and whether or not this was sacrificed for convenience. The answers of the questionnaire indicated that faculty members and researchers comprise quality for convenience in selection “just some times”. These responses are consistent with a study by Joswick and Stierman (1997), who found that information use by researchers working in specialized disciplines is quite different to undergraduate students; the latter preferring the immediate gratification of using full text than any other criteria.

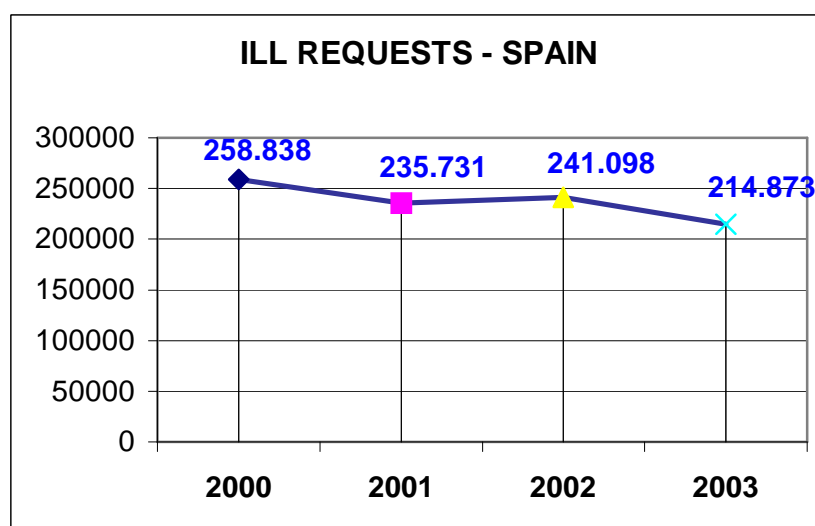
## DOCUMENT DELIVERY TRENDS

### Statistical data for document delivery in Spanish University Libraries

The statistical analysis of document delivery shows a significant decrease since the introduction of online journals over the last four years as shown in Figure 3. The percentage decline from 2000-2003 was 17 per cent and from 2002-2003 was 10.8 per cent.

The figures are based on an annual survey that is distributed to academic libraries. These gather statistical information on their budgets, staff, collections and the services.

**Figure 3** ILL Requests – SPAIN

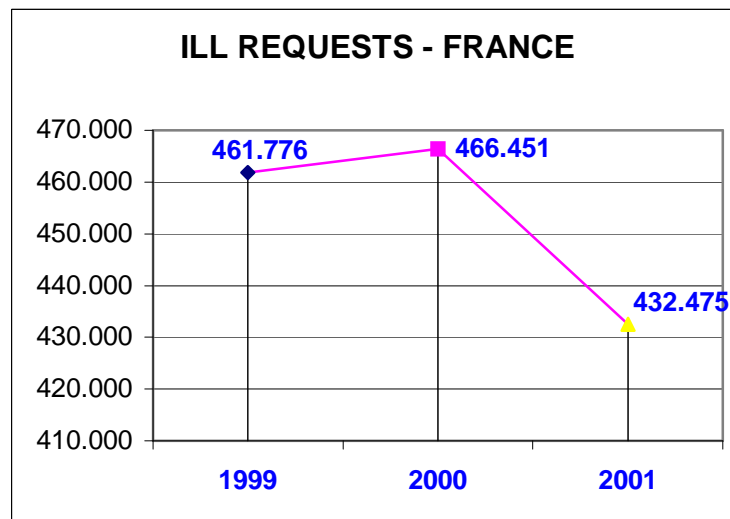


**Source:** <http://www.crue.org/web-rebiun/informeEstadistico.html>

### Statistical data of document delivery in French university libraries

The trend of document delivery in French university libraries also fell by 6.3 per cent in the period of time 1999-2001 as shown in Figure 4. The percentage decline from 2000-2002 was 27.37 per cent and from 2001-2002 was 15.23 per cent.

**Figure 4** ILL requests – France

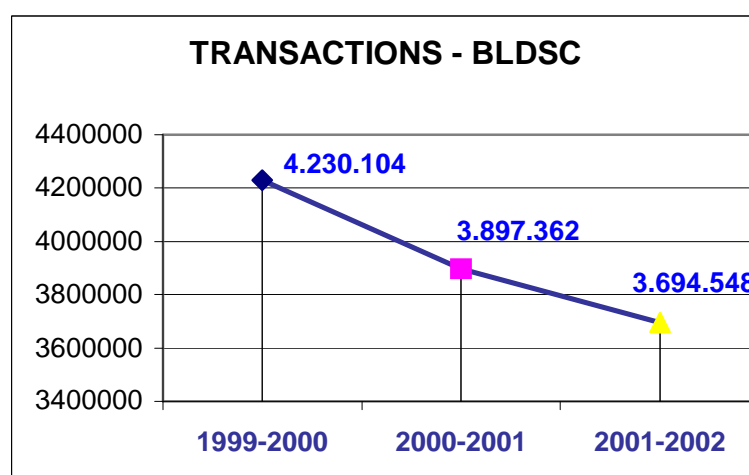


**Source:** <http://www.sup.adc.education.fr/asibu>

### Statistical data of document delivery at the British Library Document Supply Centre (BLDSC)

It is notable that the library, which makes the most transactions individually in the world, has experienced a decline of 12.6 per cent over three years as shown in Figure 5 (more up to date figures are not available).

**Figure 5** Transactions BLDSC



**Source** <http://www.lboro.ac.uk/departments/dils/lisu/list00/bldsc00.html>

## Statistical data for document delivery by ARL – USA

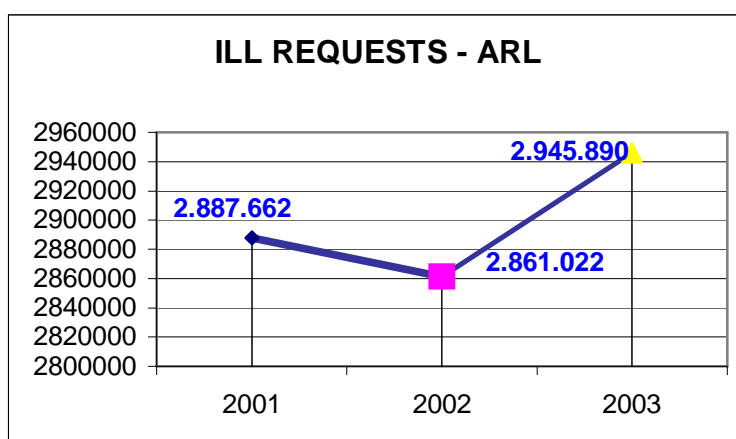
ILL requests in Association of Research Libraries (ARL) show an increase of 2.9 per cent as shown in Figure 6.

However, it is necessary to indicate that ARL recorded an increase of 190 per cent in borrowing from 1986-2000. Thus these results may be interpreted as a deceleration of interlibraries services of their member institutions.

As Mary Jackson says: “We can also speculate about when the availability of consortial or state purchase of full-text aggregated journal articles will reduce the number of photocopy requests. We will see that shift at some point but is unclear when, as data from OhioLINK confirm the explosion in the use of full-text resources but no corresponding decrease in ILL requesting photocopies” (Line *et al.*, 2002).

In summary, statistical data provided evidence that academic libraries are tending to reduce document delivery since they acquired significant numbers of e-journals since 2000. In addition, users are changing the ways in which they access full-text journals.

**Figure 6** ILL requests – ARL



**Source:** <http://www.arl.org/stats>

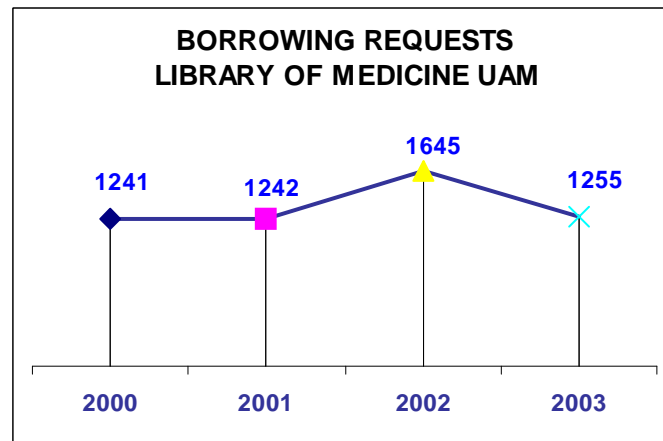


## The evolution of document delivery requests in the Library of Medicine at UAM

Document delivery between 1998-1999 grew by 12 per cent. The reason for this growth was the computerization of services with the program SOD.

The document delivery trend has varied significantly within the period 2000-2003 but has varied little over the whole period as shown in Figure 7.

**Figure 7** Borrowing requests – Library of Medicine UAM



## Reasons for change

We have tried to identify the reasons for this change and the characteristics of current ILL.

## Date of publication of articles

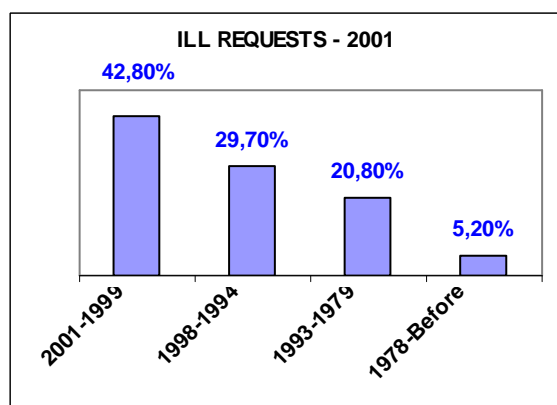
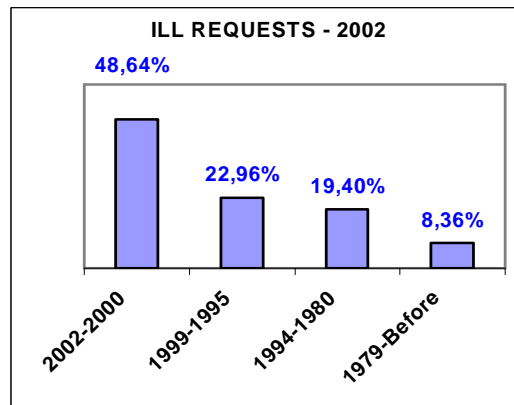
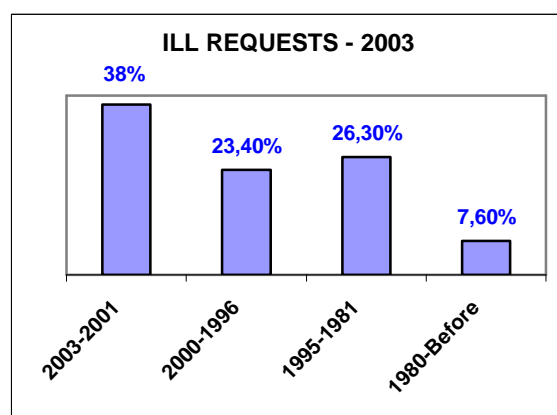
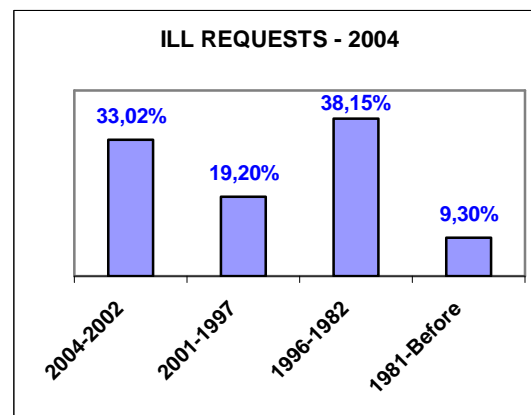
As the findings of a study (Maxfield and DiCarlo, 1995), demonstrated "after 17 months, 50 per cent of a journal's use has occurred. After five years, approximately 90 per cent of the use has occurred".

We have tried to determine if the introduction of online journals has made an impact on requests for current material. (The electronic format only covers recent years, usually the last seven years.)

We have also tried to determine whether online journals have had an impact on the publication dates of requests.

Because the electronic format covers approximately the last nine years, nowadays the most important nucleus of publication dates of document delivery requests has been moved to 1982-1986.

An analysis of the publication year of requests in document supply at UAM is indicated in Figures 8-11 and Table I.

**Figure 8** ILL requests 2001**Figure 9** ILL requests 2002**Figure 10** ILL requests 2003**Figure 11** ILL requests 2004**Table I** The percentage of requests for articles published 2001-2004

| Request for year |       |
|------------------|-------|
| 2001             | 42.80 |
| 2002             | 48.64 |
| 2003             | 38    |
| 2004             | 33.02 |

### Articles published in the last three years

The percentage of requests for articles published during the last three years is going down year by year.

These results are in accordance with Mary Jackson's findings (Line *et al.*, 2002): "Analysis of OCLC ILL requests confirms that one-half of all photocopy requests are for materials older than ten years, materials unlikely to be found in electronic format".

### **Delivery time**

An important activity of the document supply service has been aimed at reducing delivery time. We believe that improving turn-around time through technology is an important factor providing a more efficient service for our users.

We have tried to reduce the delivery time of ILL requests as indicated in Table II.

Although in most cases the reduction of delivery time for requested articles has been received satisfactorily by users, in some cases it is deemed to be still a slow process.

**Table II Delivery time of ILL requests**

| <b>Year</b> | <b>Days</b> | <b>Per cent in five days</b> |
|-------------|-------------|------------------------------|
| <b>2001</b> | <b>13.8</b> | <b>22.5</b>                  |
| <b>2002</b> | <b>9.5</b>  | <b>30.16</b>                 |
| <b>2003</b> | <b>9.08</b> | <b>50.16</b>                 |
| <b>2004</b> | <b>9.49</b> | <b>46.18</b>                 |

### **Full-text retrieval**

We were interested in knowing the process that users follow to retrieve full-text articles. The results of the questionnaire showed that the e-journals are completely accepted by researchers and there is an unwillingness to return to print versions:

- The easiest way that researchers found to access full-text articles was directly from databases linked to e-journals. Nowadays the library has activated the PubMed' Linkout to access holdings to Madroño Consortium, but shortly the library will implement SFX linking to PubMed.
- Free repositories such as PubMed Central or databases linked to e-journals were most used. This result suggest that it would be interesting to implement PubMed'Linkout feature that provides links to articles available through Elsevier Science Direct and other biomedical titles to which the library subscribes.
- Meanwhile a high percentage of full-text retrieval by researchers was through lists e-journals subscribed to by UAM.
- The document delivery service to access full-text retrieval. This service received a high assessment by users in the questionnaire.

- Finally, there are some requests for articles to colleagues and authors via e.mail.

## Results

The survey shows that in general the usage of document delivery in the university libraries has decreased since the introduction of a critical mass of online journals from 2000 onwards.

In our library we have observed stagnation regardless of the improvements in our service which include reduction of delivery time and electronic format delivery.

As Milton (1998) remarks, "This is quite a staggering increase in full-text usage and represents the most significant factor that has contributed to the decline of ILL activity".

As a consequence of this evidence some academic libraries are tending to redeploy ILL staff resources elsewhere as the number of transactions decreases (Robertson, 2003)

As Leo Waaijers says: "Libraries, especially their document supply services, could better prepare for inescapable reorganizations in five or ten years' time" (Line *et al.*, 2002)

However, from other perspective Mary Jackson says: "Our job will change from one focussed on getting the requests processed the day arrive to one evaluation performance of suppliers, monitoring advances in technologies for managing and delivery, and providing data to collection development specialists on what is being requested, etc." (Line *et al.*, 2002).

## CONCLUSION

The impact of online journals on document supply needs to be studied for a longer period of time to achieve better understanding of emerging use patterns. It is too soon to evaluate document delivery in the near future because it is changing too fast. According to Line *et al.* (2002): "It seems (the future is) to be a combination of old-fashioned transfer of printed works from one library to another by loan or photocopy, online transmission of "born-digital", and online transmission of digitised works, whether through host or direct from producers". Finally, the electronic full-text is a yet unable to fully meet the needs of our researchers. Until full-text can approximate what is available in print both in journals and monographs, the need for document delivery services will remain.

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