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### Deposited in DRO:

10 August 2011

### Version of attached file:

Accepted Version

### Peer-review status of attached file:

Peer-reviewed

### Citation for published item:

Walton, Judith (2008) 'The changing use of electronic document delivery in the inter-library loan service : a survey.', *Interlending and document supply.*, 36 (1). pp. 43-56.

### Further information on publisher's website:

<https://doi.org/10.1108/02641610810856381>

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## **The changing use of electronic document delivery in the inter-library loan service: a survey.**

*Judith Walton*

Document Delivery Service Supervisor, Durham University Library, UK

### **Abstract**

**Purpose** – The purpose of this article is to outline findings of a recent MSc study into electronic article provision in interlending and document supply presented to the Robert Gordon University in June 2007.

**Design/methodology/approach** – The article is primarily based on data from questionnaires circulated to UK ILL departments (in academic, public, industrial, health and special libraries), recent users of ILL in a UK academic library and library managers within UK academic HE and public libraries.

**Findings** – Electronic document delivery was found to be used by half of libraries who responded: widespread in academic libraries, but seldom used in public libraries where demand for articles is comparatively low. Academic users appreciate the move to desktop delivery and the trend towards electronic delivery of articles in ILL is expected to grow in future.

**Research limitations/implications** – The article is based on a survey data of libraries and users (in an academic environment) in the UK and Ireland. As such it provides a snapshot of the situation and represents the views of the participants at that time.

**Practical implications** – The user survey shows that, in an academic context, users welcome the move to desktop delivery.

**Originality/value** – This article provides a snapshot of the prevalence of, and attitudes to electronic article delivery within the UK and Ireland.

**Keywords** electronic document delivery, EDD, secure electronic delivery, SED, desktop delivery, user preferences,

**Paper type:** Research

### **Introduction**

Working in an ILL department in a UK academic institution it is very easy to make the assumption that most libraries today use some form of electronic document delivery (EDD) when acquiring articles through ILL. When asked to select a topic for study for my MSc in Information and Library Studies (Walton, 2007) I decided to challenge this assumption and find out whether this really was the case in the UK. I wanted to discover who uses EDD, what form of EDD first tempted them to try it, what they use today and how libraries predict their usage of EDD methods will change in the future. To gain a more complete picture I also approached library managers within UK and Irish public and academic libraries to see whether their views coincided or conflicted with those of ILL staff. Library users in my own institution were also contacted to see what they wanted from ILL and what they thought of the advantages and disadvantages of EDD.

## **Background**

Fax, the original “electronic” method of article delivery, was first used in an ILL context in the UK in the mid 1980s to send urgent requests between libraries. Initially the machines were costly, delivery of pages was slow; ((Rindfuss,1990) described how the group 3 fax machine, the first truly digital fax machine, managed one page per minute), scanning resolution was poor (100x100 or 100x200dpi) and early thermo-paper faded with time, so could not be retained for long-term use, (Jackson 1993). As technology improved fax machines came down in price, speed and the scanning resolution increased; however they were still primarily used for urgent requests. Writing in 1993 Senecal urged that faxes be used as the standard ILL delivery method to improve delivery time, arguing that if the library had already incurred the fixed costs of the fax machine the additional cost of sending the article via fax was negligible: the variable costs of transmitting via fax were only 4.3 cents per page higher than first class post, (Senecal, 1993). However (Braid,1993) rather more realistically reported that at peak times in the UK an average 10 page document, taking 10 minutes to transmit, would cost £2.00 to fax compared to 20p to post. While cheaper faxing could be achieved outside peak times, cost (telecommunications costs and staff time) appears to have been the main barrier to switching to fax as a standard method of article delivery at that time.

Libraries experimented with alternatives to fax such as satellite transmission; unfortunately technology was still in the early stages of development when the European Commission moved its funding elsewhere,(Braid,1993) and the experiments into satellite transmission, as far as libraries were concerned, ceased. The linking of local area networks (LANs) of computers to form the JANET network connected computers and allowed delivery of files between them, initially using email. As time progressed the handling capacities of the network increased and the cost of the hardware decreased to affordable levels. As the internet expanded more libraries connected to it and the scope to send articles electronically improved, although access was restricted initially to academic HE institutions whose own LANs formed the backbone of the internet. It became cheaper for academic HE libraries to use email rather than fax which incurred added costs. The British Library still offers the option to supply via fax, however staff report that its use is declining (Anon, personal communication 16 March 2007).

## **Methodology**

Several surveys were conducted as part of the MSc work: the main survey was a questionnaire directed to ILL departments within the UK and Ireland, and subsidiary surveys consulted library managers and library users for their views. The ILL contact database from my own department at Durham University, as well as British Library’s Directory of Library Codes and an email from UnityUK to all its contacts provided an extensive (but by no means exhaustive) list of UK and Irish ILL departments. A trial questionnaire was sent to local libraries and after minor amendments the final questionnaire was distributed via email or post. A reminder was emailed to those who had not responded a week before the end of the survey and this doubled the response rate. The survey eventually achieved a 42.2% response rate (305/723 questionnaires delivered) and included responses from a wide range of UK and Irish libraries.

Contact details for Library managers were located by searching libraries' websites using (Harden and Harden,2006) as a basis for locating public libraries and (Burden, 2006) for locating academic libraries. Libraries were contacted on an individual basis either directly to an identified Deputy Librarian, or via a general contact email address or web-form asking for the survey to be forwarded. The email sent consisted of a range of questions designed to provide a framework for discussion rather than restrict respondents to a fixed set of responses. This survey achieved a 35% response rate from academic libraries (37/106) and 18% for public libraries (35/193 libraries contacted).

For the user survey a very brief questionnaire was designed to encourage responses and this was sent to readers who had some previous experience of ILL requesting and who had requested copies of articles over a six week period immediately prior to the survey in mid November. These users would have some experience of ILL and would therefore be in a position to make informed comments. The response rate for this survey was 37% (83/222 questionnaires distributed) with the lowest response rate from full-time undergraduates (22%) and the highest from staff (47%).

### **Growth of EDD**

The responses from ILL departments regarding their first experiments with EDD are shown in figures 1 and 2. Early uptake of EDD was mainly by academic HE libraries beginning in 1994 and they had had more trials of EDD per year than any other group (figure 1). This was probably due to a number of factors including: easy access to the internet, large demand for articles and a willingness to experiment with new delivery methods driven by more and more demanding users with specific deadlines for material. (McGrath,1998) considered the factors driving changes taking place in libraries being the :

- 1) increase in quantity of information available,
- 2) increase in prices of monographs and serials,
- 3) reduced library budgets and
- 4) increased demand for information caused by increase in student numbers and growth of current awareness tools.

This was certainly the case once bibliographic databases became available electronically, allowing users an improved awareness of the scope of material available. This precipitated an increase in ILL requesting generally as users discovered more material at a time when budgets were being stretched and libraries were able to purchase a diminishing proportion of the information available. ILL requesting finally peaked at just over 4 million requests a year at British Library in 1998-1999 (Brindley 2005). To cope with increased demand libraries had to find more efficient ways of handling ILL requests and one of the solutions was to streamline procedures and automate as much as possible. British Library partly achieved this by introducing EDD and automating it by linking ESTAR (the database hosting their electronic journals) to their Inside service in 1999 (Braid, 2003). (Brindley,2005) reported that demand at British Library had fallen to 2.4 million documents by 2004. (McGrath,2006) put 60% of the decline down to the impact of e-journal packages which, while they are very costly for libraries, allowed users access to a wider range of journals than previously possible.

Figure 1 –Date of first use of EDD for article receipt (subdivided by library type)

Figure 2 – Date of first use of EDD for article receipt (subdivided by first method used).

The Follett report (Dean, 1995), a major influence on EDD development in the UK, had anticipated a need for improvements in article delivery and facilitated funding for the eLib projects in 1995, five of which concerned EDD. Whilst most of the projects failed to make the transition to services, LAMDA was successful and the survey of ILL departments shows a peak around 1997 as libraries first tried LAMDA (figure 2). There was a similar peak in libraries using Ariel around this time, however since LAMDA used Ariel as its delivery method it is unclear whether libraries selecting Ariel for the questionnaire were using Ariel to obtain articles from other libraries (such as British Library) or from a LAMDA library. It is possible that some replies are mis-categorised. Libraries reporting trying LAMDA for the first time trailed off by 2000 and the service ceased in 2005.

Figure 2 shows that early take-up of EDD was slow until 2003-2005 when there was a rapid uptake of EDD (primarily British Library's Secure Electronic Delivery (SED)) by libraries of all types. Unfortunately the graph also illustrates the fallibility of memory as 5 libraries claimed to use SED before its launch in 2003. The figure shows the success of SED and the confidence that UK libraries have in the British Library's services. Unlike previous EDD services available in the UK SED's advantages included:

- ◆ it did not demand any expensive, specialist software,
- ◆ it could be integrated with British Library's existing ADD Address functionality to enable direct to end-user delivery,
- ◆ it allowed access to a sufficiently large journal collection to make experimentation worthwhile,
- ◆ and it had the backing of a reliable (and familiar) customer services team.

Perhaps most importantly British Library (who saw the potential for streamlining processes using EDD) encouraged its use by making SED and Ariel requests cheaper than those delivered by post or fax.

The success of past methods of EDD can be gauged by considering which ones are still in use. In response to the survey of ILL departments 80% of those who used EDD said that they still used the method they first tried, however figure 2 shows that the majority first experimented with SED only a few years ago, so this is perhaps hardly surprising. In general the services which incurred no extra delivery cost, specialist hardware or software have fared best. This is shown by the failure of fax and the slow decline of Ariel compared to the rapid rise of SED. The nine libraries who abandoned EDD after the initial trial complained of technical difficulties and insufficient usage (which would give them little incentive to expend effort overcoming their technical difficulties).

### **Current use of EDD in the UK**

The survey of ILL departments showed that 49.8% of respondents currently use some method of EDD for article receipt. Usage varied across different library types and roughly 70% of academic HE, governmental, industrial and learned societies use EDD compared to 93% of medical libraries and 15% of public libraries (figure 3). In

general, libraries who use EDD, request more articles per year than non-users; around 1,000-5,000 articles a year compared to 10-100. The most frequently used methods of EDD were SED (46%), scanned articles from another library (21%) and Ariel (10%). 42% of libraries reported using two or more methods (generally SED and scanned articles) and when a third method was introduced it was usually Ariel or purchase direct from the publisher. Assuming an even proportion of use of the different delivery methods across all library types; academic HE libraries appeared to purchase less articles direct from the publisher than average, industrial libraries made higher use of scanned items and medical libraries used less SED, but more scanned items and "other" (usually the article delivery service offered by the British Medical Association) than average. EDD usage fell into two categories those libraries who used it for the bulk of their requests (EDD: hardcopy ratio of 90:10) and those who used it infrequently (10:90). This was not linked to the number of articles requested by these libraries as there was an equal distribution of the annual number of requests made, with no significant difference between the two groups.

So what do libraries see as the benefits of using EDD? Given as a percentage of the replies to the question 95% agreed that speed was an advantage of EDD and 65% agreed that EDD was cheaper than a paper copy (this is generally the case for items supplied by the British Library which is encouraging use of electronic delivery methods by charging less than for photocopies). The ability to forward electronic versions (45%), save staff time (43%), save paper (35%) and the quality of the copies (39%) were of medium importance, while the ability to help a department's Performance Indicators (6%) and allow unmediated requesting (3%) were seen as an advantage by only a few respondents. When offered a similar range of potential disadvantages no single disadvantage received over 50% agreement. The most commonly expressed disadvantage was that EDD raised user expectations (41%) while 33% said that users now expect all their articles via EDD. The amount of extra time required by EDD was a common concern: 23% reported that EDD was generally time consuming, 35% complained that it required staff training and 36% reported an increase in the number of IT or EDD queries received. Happily when current EDD users were asked if the advantages outweighed the disadvantages 92% agreed.

Of course, as the survey showed, not everyone uses EDD. 50.2% of the responding libraries (primarily public libraries) said that they did not use EDD, giving insufficient usage as well as practical and technical problems as their main reasons. As mentioned above their users' demand for articles is in the range of 10-100 per year making it hardly worth their while investing time and staff effort investigating alternate delivery methods. They were content to continue using existing methods of delivery and only 7% mentioned that they might consider trying EDD in future. It was interesting to note that 11% of these libraries reported using the British Library's ADD Address function to have articles posted directly to their end-users, showing a small but genuine competitor to EDD which provides the benefits of end-user delivery to those who prefer their articles in hardcopy.

Figure 3 Proportions of current EDD use for article receipt (subdivided by library type).

### **Current ability to supply**

So far I have talked about requesting material to be delivered in electronic format and this is fine as long as the libraries approached are able to supply in this format. We are lucky in the UK that the British Library, our largest supplier, is championing EDD and that the majority of the former LAMDA suppliers are still offering this service. The survey of ILL departments found that currently 24% of libraries had the capacity to supply articles electronically (see figure 4). Assuming that the proportion of libraries with the ability to supply electronically was the same across all library types; more governmental, learned society and medical libraries were found to have the ability and fewer public libraries had the ability than expected. Whilst distribution of academic HE libraries' ability to supply electronically matched the proportion expected (assuming an even distribution across all library types) they have the greatest number of members able to supply electronically than any other group and access to a wide range of journals which makes them an important potential source of articles. That said, the majority of libraries barely use their ability to deliver electronically and of those that have the ability 43% reported that they use it to supply less than 10% of their articles and only 21% used it to supply more than 80% of their articles. I did wonder whether this might have been because it is more difficult to supply electronically, however when asked the replies were mixed, showing no significant difference as far as ILL practitioners were concerned. It is likely that unfamiliarity with the procedures initially makes EDD appear complicated and increased usage would make it less daunting.

Figure 4 Proportions of current EDD use for article supply (subdivided by library type).

### **But what do our users want?**

As part of my studies a survey of current ILL users was conducted to discover their attitudes towards EDD. It is all very well libraries making new technologies available to our customers, but do they actually want what we have to offer? The end-users' survey asked a varied group of academic HE users to rate the importance of various aspects of ILL. Speed of delivery was rated as the highest importance by all types of users, averaging 4.3 on a scale of 1 (unimportant) to 5 (very important): this supports reports from ILL practitioners which suggested that they thought speed was important for their users. Science faculty members rated speed more important than Social Science or Arts members. Online request forms were rated as medium importance overall, but given greater importance by part-time students. This is certainly an area which is expected to change in future because of the time that can be saved for both ILL departments and users. Online forms offer almost instantaneous transmission of legible requests direct to ILL requiring only minimal processing before being forward to a supply library, cutting out request delivery time as well as time spent deciphering and keying requests. Of course to get the full benefit of online request forms requires the use of electronic signatures and online payment methods, both of which still require more software development for most UK ILL departments but (Titley, 2007) gives a description of a working system at the University of Plymouth.

Postgraduates and staff rated the ability to receive articles in electronic format as medium to high importance (3.6 and 3.7) and undergraduates' replies showed no clear preference. This might be related to the user's access to free printing (which in my own institution is more likely for postgraduates and staff than undergraduates), or

could relate to the users' preference for reading material online, potentially taking advantage of cut and paste options or keyword searching; however without further investigation this is purely speculative. Interestingly 76% of respondents wanted articles available electronically for long-term use, however only half of those (35%) would consider paying the extra copyright fee to achieve this. This shows a gap between what users ideally would want and what libraries are able to offer with their limited budgets.

Whilst it is possible using ADD Address (where available) for libraries to ask the British Library to deliver SED requests directly to end-users, it was unclear whether users actually wanted this. "User resistance" was a potential problem highlighted in the survey of ILL departments; however, when asked, 78% of the respondents to the end user survey said that the advantages of SED outweighed the disadvantages. Postgraduates and staff particularly agreed (greater than 80%) but undergraduates gave a 50:50 response. Again this is likely to be because undergraduates pay for printing and it is cheaper for them to wait an extra day and receive the article through the standard ILL service where the printing is done by the library at no extra charge. At Durham, we are in the process of launching SED as a delivery option to our users and it will be interesting to see what the actual uptake will be when the service goes live.

### **Current tensions between the major players**

The development and shape of the future growth of EDD will reflect compromises made in response to the pressures brought to bear by the main groups with vested interests; librarians, publishers and library users. Currently the main tensions between libraries and publishers regard use of journals in ILL. Ideally publishers would prefer libraries to subscribe to all the material they require and not obtain any of it via ILL. Unfortunately due to the escalating costs of journals (generally several times above inflation) libraries are not able to do this. Although access to improved bibliographies pushed up ILL requesting in the late 1990s this has declined since then, primarily because of better access to material through more flexible e-journal packages on offer from publishers. Whilst discussions can become heated from time to time relations with publishers are slowly improving and consortia agreements such as the NESLi2 license have improved libraries' ability to supply material through ILL without infringing license agreements, see in particular, (Bradford and Brine, 2006). SED was initially developed by the British Library to provide the security required by publishers before they would agree to electronic supply, (Ceeney, 2003) and the British Library remains in continuing negotiations with publishers regarding SED supply. Publishers are also in contention with libraries because ILL takes away potential customers from their own pay-per-view services and my survey of academic HE users supports this point showing that less than 10% had tried pay-per-view (although it has to be admitted that my survey approached ILL users rather than everyone, so may be biased towards those who prefer the less expensive options.

There are a few tensions between British Library and ILL practitioners since ILL practitioners form the bulk of British Library's customer base. The BL is government funded but the ILL service operates on a cost recovery basis, so they work as efficiently as possible and encourage their customers to use methods (such as EDD) which have efficiency benefits for both partners. British Library is involved in



negotiations with publishers on behalf of libraries to enable development of innovative services such as SED. British Library's Inside service could potentially be competitive with ILL, encouraging users to bypass ILL and approach British Library directly. Some public libraries look at this positively and actively encourage users to use Inside instead of ILL for articles and see benefits to both the user and ILL. As shown in the end-user survey academic HE users would rather request material via ILL than pay the extra copyright fees required if they used Inside.

When the project was planned library managers were included in the list of players to contact to see whether ILL staff and their managers have different ideas and priorities. A comparison of the results from the surveys of library managers and ILL practitioners showed that their views of the future are complementary and generally in line with the goals of their users. Potentially library managers and ILL practitioners could be in conflict if either side ever lost touch with users' requirements from the service.

Lastly, the main tensions between librarians and users centre on user expectations and ILL's ability to fulfil those expectations. The user survey confirmed anecdotal evidence from ILL librarians that academic HE users regard delivery speed as important. Whilst the surveys show that ILL librarians have a good idea of what users want and try their best to achieve it, conflict arises between the two groups because users have a poor understanding of the restrictions under which ILL librarians work. Users often do not comprehend copyright restrictions and, for example, maybe displeased when asked to pay copyright fees when requesting more than a single article from a journal issue. Nor do they truly understand the costs involved: ILL is often heavily subsidised by libraries and users regard any charge as excessive, expecting that all material should be available free of charge. Users often have unrealistic expectations about how long it takes ILL documents to arrive. One of the disadvantages of EDD highlighted by the ILL practitioner survey was that EDD raised user expectations of delivery speed and strengthened the false idea that everything was available in electronic format. The advent of online bibliographies and the internet made grey literature increasingly visible to users, but not necessarily any easier for librarians to locate. Users regularly fail to understand that material visible in library catalogues, such as that held in special collections, are not automatically available through the UK's ILL scheme. There has to be a balance made between what libraries can deliver and what users want. The question and answer session at FIL@BLDSC<sup>1</sup> open day (16<sup>th</sup> March 2007) discussed rising user expectations and how this could be handled by librarians. Many present concluded that improved user education was required give users a more realistic idea of what they can expect from the ILL service and to reinforce the importance of early literature searching (to reverse the trend of users leaving literature searching until the last minute and then making do with whatever material was instantly available) which might be achieved in academic institutions by working more closely with lecturers, e.g. by including library skills as a compulsory course element.

### **Predicted change in EDD usage**

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<sup>1</sup> FIL represents the interests of ILL librarians in the UK and organises open days with the British Library at Boston Spa in order to discuss matters of mutual concern.

Whilst conducting the surveys on the usage of EDD the opportunity was taken to ask ILL librarians and their managers about their views of the future usage of EDD. The library manager survey showed that 97% of academic HE and 59% of public library respondents reported that their institutions would be using EDD in future (an increase from the current usage of 72% and 15% respectively). This was supported by the ILL practitioner survey where 64% of respondents thought that they would be making more use of EDD in future (mainly public libraries) and 35% thought usage would remain constant (mainly academic HE libraries). Libraries that do not currently use EDD were more likely to expect usage to remain the same as at present.

While the users' survey showed that 76% of academic HE users wanted articles in electronic format for long-term use, responses from public library managers suggested that their users would continue to require paper copies (only 28% thought that demand for hardcopy would decrease compared to 64% of academic HE respondents). The ILL practitioner survey confirmed that public libraries showed a greater preference for hardcopy over electronic and academic HE showed a smaller preference for hardcopy. Most libraries thought that there would be a mixture of electronic and hardcopy in future, although libraries that currently do not use EDD have a greater preference for hardcopy. It is likely in future that libraries will opt for a mixture of electronic and hardcopy delivery and take-up of EDD will depend on the nature of the library's clientele: public libraries will retain a greater requirement for hardcopy and academic HE will have a higher requirement for EDD.

### **End-user delivery**

The majority of ILL librarians who responded said they wanted end-user delivery in future (71%). Whilst not directly asked if they wanted end-user delivery 76% of the academic HE users who responded to the user survey said that they wanted electronic articles for long-term use (generally only available via desktop delivery) and more than 80% of postgraduates and staff agreed that SED's advantages outweighed its disadvantages. It is likely that libraries will increasingly offer end-user delivery: those users who prefer EDD will have the option for direct-to-desktop delivery and for those who prefer hardcopy there is the option (currently used by 11% of the libraries who do not use EDD) for articles to be delivered direct to the user's home address using British Library's ADD Address facility. The survey of ILL departments suggested that technological problems are likely to be the biggest hindrance to end-user delivery, followed by user resistance, although as has been shown with electronic journals these are problems which will lessen with time.

### **Future EDD supply**

As mentioned earlier our ability to supply articles electronically is lagging behind our ability to receive them: only 24% of respondents had the capacity to supply articles electronically compared to 49.8% who have received articles electronically. At present libraries hardly use this ability (supplying less than 10% of their articles via EDD) however when asked 88% of respondents to the survey of ILL departments said that they were willing "in principle" to supply articles electronically in future. Libraries that currently use EDD to receive articles were statistically more likely to anticipate supplying electronically than non-users. It can be concluded that in general libraries anticipate the increasing use of EDD for article supply. However public

libraries, who hold few journals and who receive few article requests, are unlikely to need to make the change to EDD (since EDD requires specialist hardware which is not justified by the number of requests they receive).

Currently ILL supply is complicated by the need to check e-journal licenses to see whether supply is possible, however Electronic Resource Management software is being introduced to track the complexities of journal licenses and this can be used to indicate whether ILL is permitted in the terms of the license. This software is likely to become more widespread and can be used to simplify ILL checking.

### **Future influences of the players**

End-user demands will continue to have a large influence on the services libraries provide: as has been demonstrated through the end user survey where users rated speed of delivery as important and this was confirmed by ILL practitioners. Movement of end users away from ILL, such as changes in their research behaviour (e.g. taking the easily available material rather than ordering the best) will impact on ILL. Increased availability of articles through open access could result in a reduction in ILL requests, but could also precipitate a change in the role of ILL staff from article provision to teaching resource discovery. Any changes made at the British Library would have a large influence on future ILL in the UK but are impossible to predict. I suspect that the influence of publishers will continue much the same as at present, although a legal fight to reduce “Library Privilege” copying cannot be ruled out. As commercial enterprises they seek to control their journals and therefore their profit margins. If they can encourage a move to the author pays model of open access then they are likely to do so rather than risk losing out entirely. In future librarians in the UK (both ILL practitioners and their managers) will continue to fight to preserve their right to “Library Privilege” copies and try to provide services in line with users’ expectations whilst balancing the needs of the other players and elements such as copyright and cost.

### **Conclusion**

The surveys showed that institutions are likely to increase their usage of EDD, although it has probably peaked in some academic HE institutions and will never form a large part of the service for public libraries that have a small requirement for articles and whose customers still require hardcopy. Libraries expect a move to online requesting which would require the widespread introduction of electronic signatures to shift libraries away from the paper trail of traditional ILL. In the UK this relies on persuading ILL software suppliers to fulfil the necessary requirements for e-signatures which are currently legal, but few ILL departments have software capable of fulfilling all the necessary criteria, although as noted above see (Titley, 2007). Both users and ILL practitioners want end-user delivery in future. Use of online request forms (probably linking from within databases), electronic signatures and end-user delivery would allow a seamless electronic service, whilst allowing libraries to continue offering the option of hardcopy (perhaps using British Library’s ADD Address for end-user paper delivery where possible) to cater for a wide range of user needs whilst streamlining the workflow for ILL staff. Take up of EDD will ultimately depend on the nature of the individual library’s clientele and at the moment some libraries have a

requirement for hardcopy, but this may slowly change in the long-term as use of technology widens.

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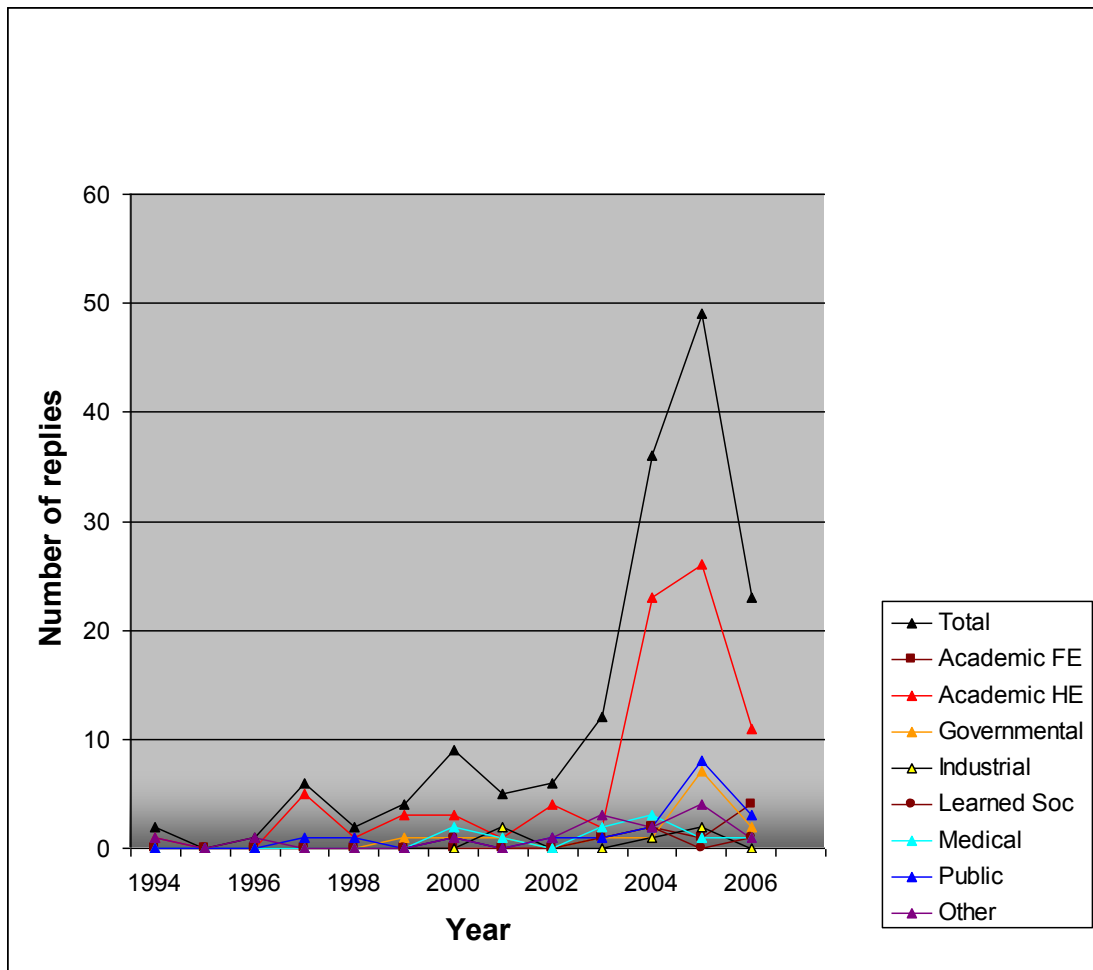


Figure 1 Date of first use of EDD for article receipt (subdivided by library type).

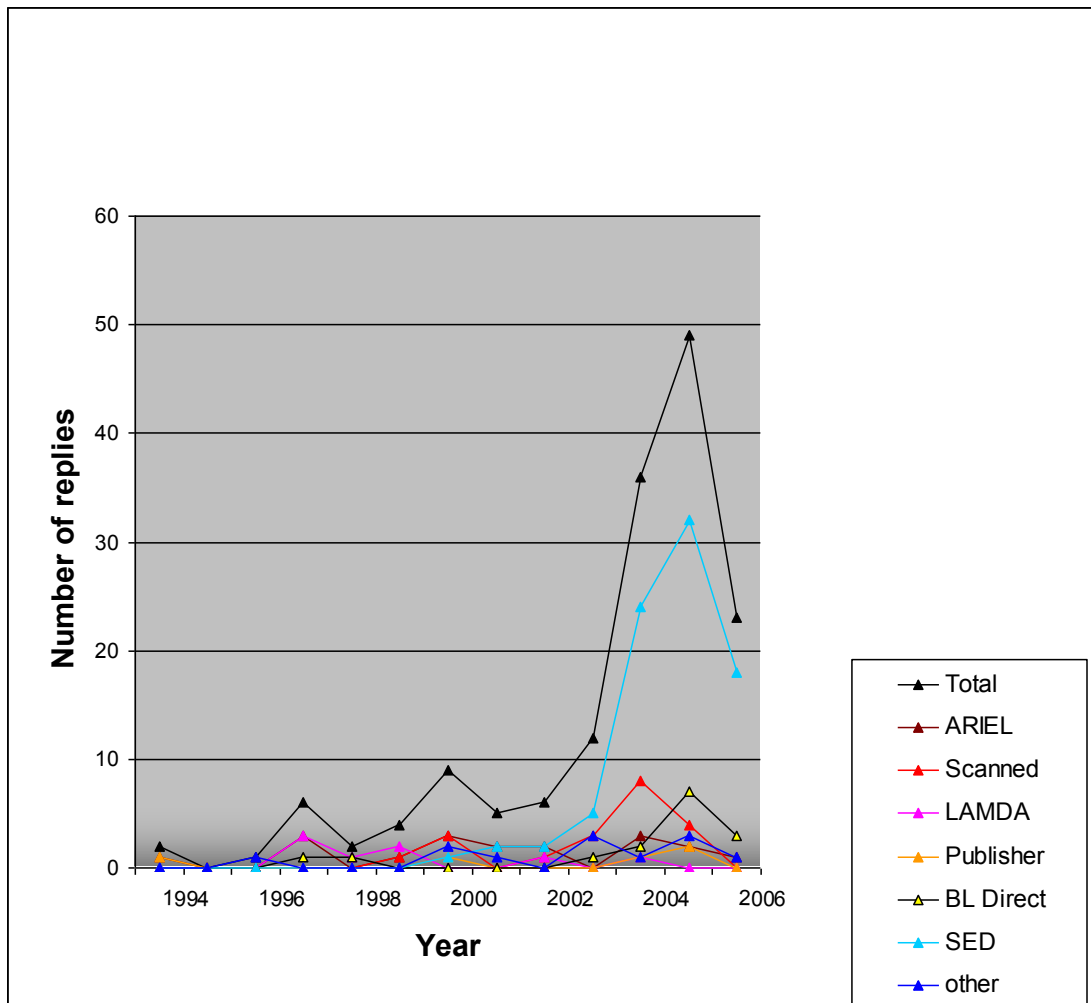


Figure 2 Date of first use of EDD for article receipt (subdivided by first method used).

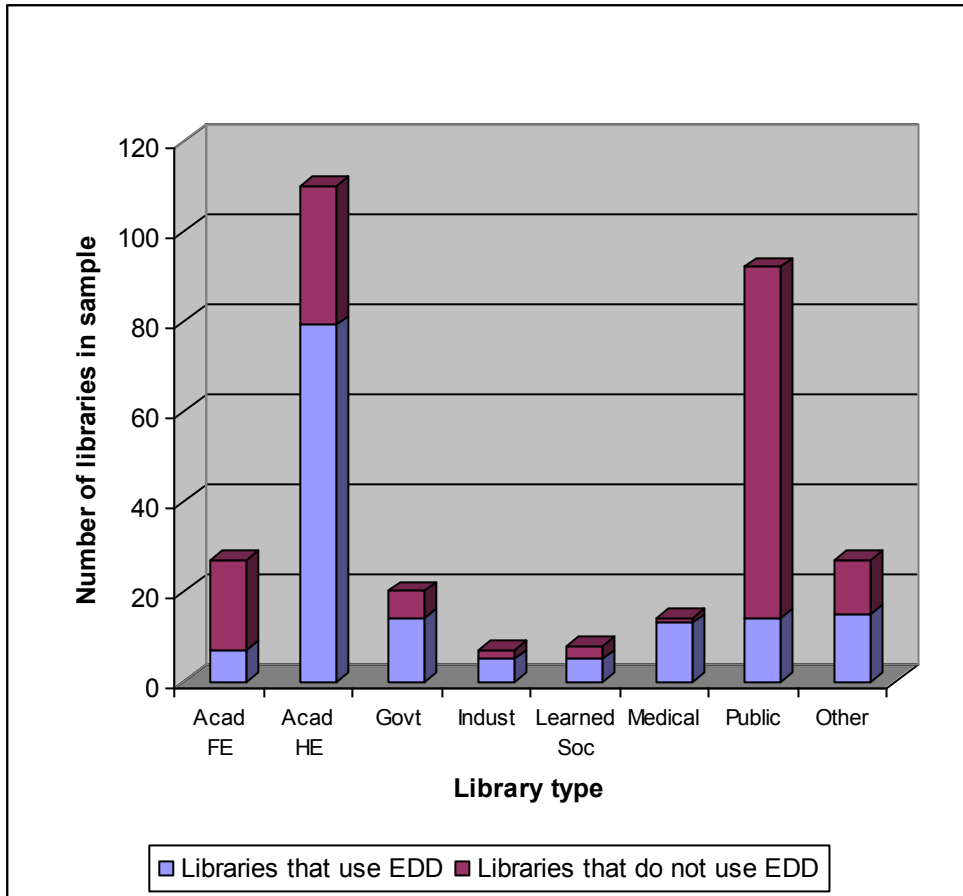


Figure 3 Proportions of current EDD use for article receipt (subdivided by library type).

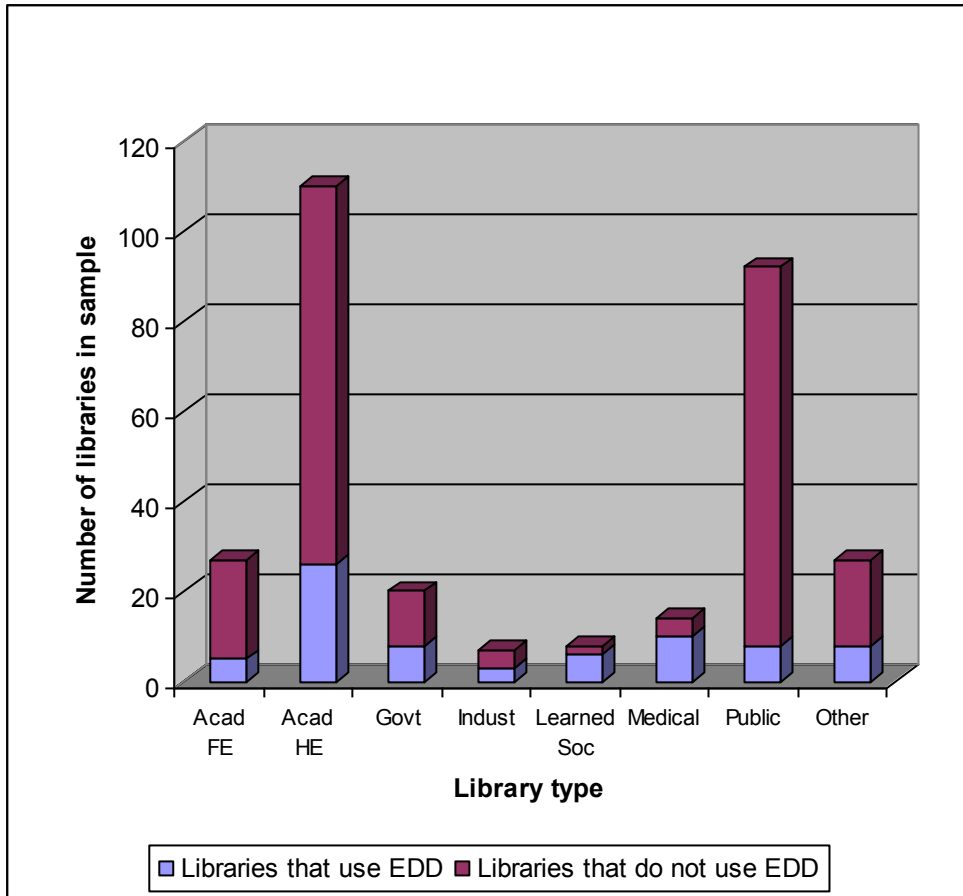


Figure 4 Proportions of current EDD use for article supply (subdivided by library type).