

The impact of the JISC-funded eLib document delivery-related projects

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Abstract

The UK Electronic Libraries Programme (eLib) was a major research and development programme funded by the Joint Information Systems Committee (JISC) of the UK higher education funding councils. One part of its work was concerned with document delivery, and several projects had this topic either as an explicit focus or as a necessary component. Reviews these projects, assessing the contribution of each one to UK document delivery services in academic libraries.

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Introduction

The UK electronic libraries programme (eLib) was a research and development initiative established as a result of the recommendations of the Follett Report (Joint Funding Council's Libraries Review Group, 1993) into the future of academic library services. These recommendations were wide-ranging and included some specifically focused on document delivery:

- The establishment of subject-based consortia to collaborate in developing electronic document delivery routes.
- The establishment of metropolitan and regional consortia to collaborate in similar document delivery services.
- The development of the necessary technical tools which might be used by libraries to send and receive electronically transmitted articles (Joint Funding Council's Libraries Review Group, 1993, Ch. 7).

In addition, the Follett Review Group noted that:

... the details of these proposals will need further development, and will need to take account, for instance, of work by the British Library, which is also developing electronic document and article delivery systems. The Review Group envisage a variety of models, which may include partnerships with commercial publishers or with learned societies (Joint Funding Council's Libraries Review Group, 1993, Ch. 7).

In a document summarising the responses of the funding councils to the Follett recommendations, it was noted that:

... there was strong support for the proposals on electronic document delivery, with some preference for subject-rather than regional-based consortia (JISC, 1994).

As a result, the Follett Implementation Group on Information Technology (FIGIT) decided as a priority:

... to consider the funding of a number of document delivery services with a networked electronic component, particularly subject-based and geographical consortia; the development of technical tools and standards; and funding, costing and copyright issues (JISC, 1994).

A number of the projects were subsequently funded, and it is their impact, particularly on UK document delivery services in academic libraries, that is the focus of this article. Each of the relevant eLib projects is discussed in turn, making use of a variety of sources including project documents, eLib synthesis

and evaluation reports, and the views of academic librarians as expressed via a brief survey on the e-mail discussion list “LIS-ILL”. An attempt is then made to draw some general conclusions assessing the overall impact of the eLib projects on UK document delivery services.

The eLib programme was divided broadly into two periods. A set of projects was established during eLib phases one and two that aimed directly to address the FIGIT priorities. At the completion of most of these (around 1997), eLib phase three was launched, which consisted principally of two sets of projects, one focusing on “hybrid libraries”, the other on resource discovery “clumps”. The projects most relevant to document delivery, and covered in this review, were:

- Electronic document delivery: EDDIS, Seren, JEDDS, LAMDA, and Infobike.
- Supporting studies: FIDDO and MA/HEM.
- Hybrid libraries: AGORA, BUILDER, HEADLINE, HYLIFE, and MALIBU.
- Large-scale resource discovery (“clumps”): CAIRNS, RIDING, and M25link.

The last of these are only tangentially relevant, and therefore are only briefly discussed. However, two other relevant projects outside eLib are also mentioned, these being EASY (a joint JISC/Publishers Association initiative) and Docusend (a feature of the DNER, or “Portfolio” infrastructure). These two projects are not included in the impact evaluation (since neither have been completed), but are noted as following on from some of the eLib projects.

EDDIS

The objectives of EDDIS (Electronic Document Delivery – the Integrated Solution) were the:

Production of [a] holdings discovery, ordering and electronic supply system driven by end users. [It aimed] to offer links to other document supply services and range of databases. [It also aimed to address] copyright and payments system and accounts procedures (Tavistock Institute, 1996).

It was expected to result in a demonstrator system, rather than a scaled product.

In achieving its objectives, EDDIS forged alliances with other projects (for example, merging with the EU project DALI) and developers (principally Fretwell Downing). The main advantage of these alliances was that complex software development was enabled, but at the cost of tensions between the business priorities of the education and the commercial parts of the project (Tavistock Institute, 1997).

EDDIS, together with MODELS (<http://www.ukoln.ac.uk/dllis/models/>), could perhaps claim to have been the project that had the most influence on eLib phase three. The demonstrator model that was produced was one of the first UK implementations of the ISO ILL protocol for ordering and delivery management, and also made use of the Z39.50 protocol for resource discovery. This standards-based approach meant that, although EDDIS was not rolled out as a document delivery management system, it has served both as one basis for the request and delivery aspects of the “hybrid library” projects, and relatedly as a spur to the development of extensive Z39.50 targets via the “clumps” projects.

According to those who worked on it, a significant contribution of EDDIS was to provide:

... a major departure from traditional interlibrary lending systems in so far as it integrates discovery, location, request and receipt of documents incorporating degrees of automated management and the possibility of end-users taking responsibility for direct access to remote documents with no or minimal library mediation (Larbey, 1999).

Of course, this is not strictly accurate, since the library mediation would be extensive – in configuring the system – but invisible to end-users. Just how much work this invisible mediation would involve became apparent during the work of FIDDO and, subsequently, that of the hybrid libraries projects such as HEADLINE. Hence, although Larbey is claiming that EDDIS implemented the four MODELS verbs describing the information access process (discover, locate, request and deliver – or receive), the implementation was far from complete. However, at least some level of continuity between EDDIS and several of the hybrid libraries projects was provided by the involvement of Fretwell Downing Informatics.

The principal claimed achievement of EDDIS, therefore, was that it developed a new vision of document delivery, backed up by a working demonstrator system that provided the basis for future developments by eLib and Fretwell Downing. It could be argued, however, that systems other than EDDIS were developed during this time that could claim to have achieved a very similar result. For example, SilverPlatter's "SilverLinker" system (Walker, 1999; reviewed in Jacobs *et al.*, 2000), by which users could cross-search a combination of SilverPlatter databases and then order paper or electronic full text from any supplier authorised by the user's institution, would appear to share many of the advantages of EDDIS. Indeed, it would appear to have anticipated much of the functionality of the hybrid library management systems developed by AGORA and similar projects. The necessity of linking the development of EDDIS (and, indeed, AGORA – see below) to one particular commercial system – Fretwell Downing's VDX – is not therefore obvious. A formal evaluation of eLib phase three (Whitelaw and Joy, 2001) also questions the wisdom of this exclusive link with VDX, given that VDX is not currently marketed to UK academic libraries. This point is taken further below.

Seren

The objective of the Seren (Sharing of Educational Resources in an Electronic Network in Wales) project was to:

... develop system infrastructure for resource sharing across Welsh higher education institutions [and] to deliver requested documents identified by users from searches on [the] project database via e-mail as well as printed text and loaned volumes (Tavistock Institute, 1996).

The intention was to pilot a shared resource system across disparate institutions, that included the scanning and transmission of documents as e-mail attachments.

Although not without technical achievements, the main emphasis of the Seren project turned out to be on organisational and institutional matters concerning the building of a resource-sharing community in Wales. One notable and rare achievement in such projects has been Seren's development of a

dual-language interface to the system, reflecting its user base. The software system that was developed enabled the automation of the discovery, request, scanning and electronic transmission of documents. However, perhaps just as importantly, the project was instrumental in the development of a consortium of Welsh higher education libraries within which the software supported interlending. As the formal evaluation of phases one and two notes:

... this area of project work has ... been very successful in developing formal co-operation between major library groups. Hitherto, such co-operation has been very difficult to achieve on a large scale (Whitelaw and Joy, 2000).

In contrast with the development focus of EDDIS, Seren (<http://seren.newi.ac.uk/user/seren/>) has become the basis for much interlending in Wales and, indeed, beyond (<http://www.iris.ie/index.htm>). It has developed a two-stage process of identifying resources using a Z39.50 client, then requesting it either via participating libraries or via a backup option such as the BLDSC. However, the system as a whole is viewed as being in price competition with BLDSC (Tavistock Institute, 1998; Lovecy, 1996). Electronic document supply is achieved through a local/Web solution rather than using Ariel software. Hence, the contributions of Seren are in providing participating libraries first with an alternative or a supplement to document supply via the BLDSC and, second, with an alternative model of electronic document transfer to Ariel.

Providing alternatives to BLDSC may be worthwhile for a number of reasons. It may be possible to supply articles more cheaply (and Seren did aim to be price-competitive), or it may be that there are other advantages from utilising local resources more effectively. For example, the organisational work undertaken by Seren in further developing the Welsh library community has certainly had many positive effects, and these should not be downplayed. Nevertheless, positioning BLDSC as a "backstop" supplier, or supplier of last resort, has its consequences for BLDSC and therefore for the wider library community and, indeed, for the very services (such as Seren) that rely on it. Simply put, BLDSC relies on volume traffic to maintain its current price structure. It may not be able to maintain or improve on current charges or

service levels, if it only receives the 20 per cent or so of requests that are more “difficult”. This point will arise again in respect of LAMDA and the EASY Project.

JEDDS

The objective of the international project JEDDS (Joint Electronic Document Delivery) was:

... to develop MIME based electronic delivery systems for e-mailing documents, interfaced with document request management systems (Tavistock Institute, 1996).

The project is usually counted as a part of eLib, although it included partners from Australia and New Zealand. Because of its focus on the development of MIME-compliant document delivery, it had strong links with EDDIS from the start, and developed links with other eLib projects through the life of the project. Its principal partner, however, was probably the US research libraries group (RLG) inasmuch as it was instrumental in developing a MIME-compliant version of the document transmission software, Ariel, created by the RLG (<http://www.rlg.org/ariel/>). Much of the UK work of the JEDDS project concentrated on document delivery standards and on Ariel during the early stages of eLib and, as such, it provided technical support or advice for several other projects such as EDDIS, LAMDA and HEADLINE. The JEDDS banner still covers a Web information resource for Ariel users (<http://jedds.mcc.ac.uk/>), although UK Ariel support is provided by the LAMDA office. The impact of the JEDDS project in the UK, then, was always anticipated to be “behind the scenes”.

LAMDA

What is now the LAMDA document delivery service (<http://lamdaweb.mcc.ac.uk/>) began life as an eLib project linking London and Manchester libraries in an interlending consortium that used the RLG’s Ariel software. Its original objective was the:

... establishment of [a] shared document supply service intended to locate and retrieve requested documents from partner libraries before requesting from BLDSC (Tavistock Institute, 1996).

It was always intended that the service should become self-funding. LAMDA (Taylor, 1999) developed a union catalogue of the supplying libraries in the consortium, which now number ten (the University of Birmingham Library being the latest addition in March 2001). The use of the “off-the-shelf” document transfer software Ariel enabled quick (though not entirely trouble-free) service implementation. The project became a service at the end of its eLib life, and now operates on a cost-recovery basis, although it is still underwritten by the JISC (JISC Committee on Electronic Information, 1999).

The aim of LAMDA was similar to that of Seren; to provide an alternative to BLDSC. In this it has been successful, with perhaps a third of the HE sector now receiving documents via the LAMDA service (Taylor, 2000). The formal evaluation of eLib phases one and two notes that:

LAMDA has proved that library co-operation can work – there have been many discussions and debates but the outcomes have been positive. eLib has proved that co-operation can be effective, but that is not cost-free (Whitelaw and Joy, 2000).

This has been a major achievement of LAMDA (as it was with Seren).

The financial side of library co-operation in interlending is worth noting. The evaluation report also notes that:

... time costs are a major issue – if staff were costed at full rate, the project would probably not be viable (Whitelaw and Joy, 2000).

One relevant comment from a LIS-ILL respondent was that “we can save money but it takes more staff time”, supporting the view of the evaluators that LAMDA benefits from hidden subsidies in terms of staff time, at least in requesting libraries. Nevertheless, it is widely assumed that it was principally the influence of LAMDA that encouraged changes in the BLDSC’s charging structure as it relates to UK higher education. Again though, this raises the question of whether BLDSC is sustainable as a “backstop” supplier, handling only the requests that others cannot satisfy.

The LAMDA project, now service, is certainly the most high-profile of the eLib document delivery projects, and has done much to change interlibrary loan provision in the UK. It was certainly the project most cited by LIS-ILL respondents. It has competed

with BLDSC, has encouraged library co-operation and demonstrated its possibility, and has spread both knowledge of, and interest in, electronic document delivery. One respondent from the LIS-ILL discussion list noted that the major achievement of eLib in this area was “electronic delivery becoming mainstream”. Like EDDIS, LAMDA has also influenced current research and development in this area, in LAMDA’s case by being a key player in the JISC Docusend project (see below).

Infobike

The objectives of the Infobike project were to:

... provide [a] search and ordering service from bibliographic databases developed from BIDS [and to] extend [the] service to include Web access to [a] wider range of lists and ordering facilities (Tavistock Institute, 1996).

It was anticipated that this would involve extensive negotiations with publishers in terms of subscription arrangements, permissions and standards, and this indeed turned out to be the case. The project quickly outgrew its boundaries as an eLib project and became the JournalsOnline service of BIDS, linked to the “pilot site licence initiative” (Morrow, 1998), subsequently “NESLI”. JournalsOnline in turn:

... provided the core of the spin-off company ingenta, now a £100 million publicly quoted company (Rusbridge, 2001).

The director of the eLib programme has called Infobike “an extremely successful project” (Rusbridge, 2001), albeit one that was perhaps lost to eLib. Having been reconfigured as a “technology feed” (Morrow, 1997) for other projects and services, Infobike quickly ceased to exist as an eLib project as such. It is difficult therefore to make claims for its impact on UK document delivery services, except to note that its successors, JournalsOnline and ingenta, are perhaps as concerned with subscription products as individual article supply (IAS, or “pay-as-you-go”, see Jacobs *et al.*, 2000, p. 126). As such they would be beyond the scope of this review, although ingenta has reappeared as a player in UK document delivery with the EASY project, discussed briefly below.

FIDDO

FIDDO (Focused Investigation of Document Delivery Options) (<http://www.lboro.ac.uk/departments/dis/fiddo/fiddo.html>) was an eLib supporting study rather than a development project. Its objective was to “investigate the options, methods and management of document delivery” (Tavistock Institute, 1996). FIDDO ended in 1999. Its work was divided between a commitment during its life to provide accurate, impartial and up-to-date information to interlibrary loan librarians, and a recognition that a lasting approach was necessary if such librarians were to be able to operate effectively within what became known as the “hybrid library”. A comprehensive review of document delivery options was published in 1996 (Morris *et al.*, 1996), a corresponding Web directory was maintained by FIDDO until the end of the project and then passed to Aslib (<http://www.aslib.co.uk/fiddo/>), a major international conference was hosted (Morris *et al.*, 1999), and a book documenting FIDDO’s methodological toolkit and findings was published (Jacobs *et al.*, 2000).

The FIDDO project claimed to offer to library managers two levels of support:

The first level of support, for the duration of the project, was the making available of up-to-date information on document supply ... [The second level consisted of] attempts to identify the critical document access issues for libraries that are supporting academic research (Jacobs *et al.*, 2000, pp. 194-5).

The first level of support was difficult because the dominance of the BLDSC, at least during FIDDO’s early stages, meant that few interlibrary loan librarians were actively pursuing alternative sources for anything other than highly specific requests. However, the project can claim to have been reasonably successful, with very positive feedback relating to the various dissemination activities described above. As far as the second level of support is concerned, more questions can perhaps be asked. Certainly, a comprehensive approach was developed by which researchers could assess the various request and deliver services that might be included in a hybrid library management system. However, although useful as a research resource, this methodology toolkit was perhaps too complex to be useful to library managers. More

importantly, perhaps, the principles embedded in FIDDO's "key findings" (Jacobs *et al.*, 2000) remain basic to any decision on implementing, administering and managing full-text access (Line, 2001). Indeed, while hybrid library management systems, such as those built by the eLib phase three projects, might claim to support the administration of document access, FIDDO's "key findings" make clear that their management potential is still not established.

MA/HEM

The small MA/HEM (Methodology for Access/Holdings Economic Modelling) project is included in this review because of its relevance to managing, rather than merely administering, document access, as discussed above. Its objective was:

... to develop an economic decision-making tool for selecting between available means of information provision (Taskforce on Methodology for Access/Holdings Economic Modelling, 1998).

The tool developed was a spreadsheet model that required a large number of input costs and other figures in order to calculate whether access (that is, IAS) or holdings (that is, subscription) was the best option for any particular case. Brief surveys conducted by both the MA/HEM team (Taskforce on Methodology for Access/Holdings Economic Modelling, 1998) and, later, by FIDDO (Jacobs *et al.*, 2000, p. 157) suggested that MA/HEM was too complex and/or time-consuming to be a practical help for many library managers. Nevertheless, in focusing on a key management decision relevant to both print and electronic worlds, the project can claim to have addressed an important issue.

eLib phase three

As noted above, the relevant parts of post-1997 eLib were under the headings "hybrid library" and "clumps". None of these was solely a document delivery project, but all were designed (in different ways) to be first steps in integrating the work done during phases one and two. The "hybrid library" projects (AGORA, BUILDER, HEADLINE, HYLIFE, MALIBU) were all based on the

"models information architecture" (MODELS, 1999), in which "delivery" was integrated with "discover", "locate" and "request" into a seamless service for users. It is not clear whether the main "hybridity" of libraries lay principally in this integration or in the integration of both print and electronic resources within one hybrid library management system. The "clumps" projects (CAIRNS, RIDING, M25link, Music Libraries Online) developed either regional or subject-based Z39.50-compliant virtual catalogues that could act as discovery/location targets for the hybrid library management systems that were being developed by AGORA and similar projects. Because of this focus, the emphasis of this paper is on the hybrid library projects.

After the successful development of working services such as LAMDA and Seren during phases one and two of eLib, it was natural that there were expectations of similar progress in phase three. This was understandable, given that these successes were achieved despite the fact that the electronic document delivery projects were:

... among the most ambitious of the eLib projects, both technically and in terms of service and organisation (Tavistock Institute, 1997).

However, it is argued that the hybrid library projects were only ever anticipated to result in prototypes or demonstrator systems, leaving product development to commercial companies. As the summative evaluation report notes:

There were some expectations from outside eLib that this domain could provide working systems for hybrid libraries. This was unrealistic, given the size of the budgets and relatively short timescales (Whitelaw and Joy, 2001).

This is not clear, though, from (for example) the first AGORA evaluation report, which notes that:

... the "hybrid library" strand of eLib is intended to be integrative and to contribute significantly to the development of libraries which offer a seamless approach to multi-format resource access. AGORA is designed to provide the systems needed to enable this objective to be achieved by enabling multiple local and remote resources to be managed and accessed from a single, robust user interface (Brophy and Butters, 1999).

It would not be surprising if statements such as this raised expectations that the projects would be delivering practical systems, and these expectations have coloured the

reception of phase three developments. As the phase three evaluation report noted with respect to Malibu: "Some care is needed to avoid alienating users by overselling early prototypes" (Whitelaw and Joy, 2001).

AGORA

An article by those working on AGORA (<http://hosted.ukoln.ac.uk/agora/>) has described the project as:

... developing a hybrid library management system (HLMS) to provide integrated access to distributed information services. In parallel with this it is also developing library skills and experience in the management of hybrid resources. AGORA aims to increase awareness and understanding of the benefits of a standards-based management framework; and therefore dissemination activities are an important part of the project (Palmer *et al.*, 2000).

In terms of the tangible deliverables, AGORA has resulted in two major resources. The first is a public domain document specifying in some detail the requirements for an HLMS (Newton-Ingham *et al.*, 1999). The second is a working demonstrator of an HLMS, and the focus of this review is on that system.

Both the AGORA demonstrator HLMS and the requirements document were produced in collaboration with one of the project partners, Fretwell Downing Informatics. Unfortunately, while Fretwell Downing has undoubtedly been an "honourable partner" (quoted in Tavistock Institute, 1998), its status as a commercial company has meant that the software running the HLMS demonstrator is (now that AGORA has ended) only maintained as a part of Fretwell Downing's VDX software. The summative evaluation report of eLib phase three notes that:

... at the time of the project proposal it was clear that few LMS [Library Management System] suppliers were prepared to commit resources to R&D in this area, particularly through involvement in eLib. Many claimed they were not moving into this area yet and from AGORA's point of view their systems were not suitable for integration work (Whitelaw and Joy, 2001).

On the other hand, the report also notes that both ExLibris and OCLC have released "hybrid products". It may be that the requirements document produced by the AGORA team influenced the development of

the ExLibris and OCLC products. However, the presence of key personnel on the ExLibris team (see Shaw, 2001), who were also involved in developing the SilverLinker system (see EDDIS, above) (Walker, 1999), suggests that there have been strands of HLMS development outside the eLib Programme.

The AGORA project team carried out a case study at the University of East Anglia of the implementation of interlending and document supply under the AGORA demonstrator system. This was viewed as:

... a change of focus from the previous work of the project, moving away from a technology focus and towards a process and policy focus – a human approach designed to inform the wider community of the reality of the hybrid library (Palmer and Robinson, 2001).

In terms of functionality, the system has proved itself capable of automatically routing requests via a rota of potential suppliers, including BLDSC. It communicated with BLDSC via the ART protocol, although trials based on the ISO-ILL protocol were not possible, because the BLDSC ISO gateway was incomplete. Copyright declarations could be generated and, although this was not assessed in the case study, the financial accounting functionality appeared viable. Altogether then, the AGORA demonstrator system could administer mediated or unmediated document delivery, and provide certain management information needs. However, because the system is powerful it is complex to configure. More importantly perhaps, and as noted above, it was not planned to be, and is unlikely ever to become, available as a scaled and supported system outside the Fretwell Downing VDX software.

In terms of the ostensible focus of the interlending case study, the human and management issues, AGORA offers the potential to integrate IAS into the library's overall acquisition policies and practices. However, the system does require libraries to re-evaluate the extent to which these policies and practices (for example, in relation to mediation, or to devolved budgets) are appropriate. Such re-evaluation is not always comfortable or, to the extent that it involves changing roles for library staff, always easy.

The value of the AGORA project and the interlending case study, should not be underestimated, because, from publicly available documents, it appears that AGORA

has been more advanced in this respect than other eLib hybrid library projects. If viewed as a system pilot, then the case study clearly shows that the technical and standards-based issues are more tractable than the human and management issues. This being the case, though, one has to ask why the latter were not more central to begin with.

BUILDER

In the words of the project's impact evaluation report:

... [the BUILDER project's] task was to develop a model of the hybrid library within a specific institutional context, i.e. University of Birmingham. The project involved the research and development of practical demonstrators and pilots of hybrid library services in action. It also had a remit to disseminate widely about the developing model of the hybrid library and to contribute to cultural change within the higher education (HE) sector at institutional and national level (Dalton and Thebridge, 2000).

The objectives of the BUILDER project (<http://builder.bham.ac.uk/>) were, like those of the AGORA project, divided between technical development, on the one hand, and human, management and cultural issues, on the other.

Like AGORA and other hybrid library projects, BUILDER also produced a number of demonstrator systems to illustrate the principles of the hybrid library, including a metadata index and a Z39.50 cross-searching client. It should be noted that the latter was developed in collaboration with Fretwell Downing (FDI), and that:

... now that the project has finished, the software is being returned to FDI in order to meet the stipulations of the license agreement (BUILDER, 2001).

Again, then, the sustainability of eLib work is called into question by its collaboration with a commercial organisation that, although a source of considerable technical expertise, has priorities outside the eLib programme.

Despite listing electronic document delivery as one of its successes in the final report, it appears that this term in BUILDER refers mainly to the transmission of examination papers within the University of Birmingham, rather than to document delivery as conventionally understood, that is, individual article supply. The impact of the BUILDER project on the latter is, therefore, minimal.

HEADLINE

HEADLINE (<http://www.headline.ac.uk/>)

aimed to design and implement a working model of the hybrid library in the subject areas of business studies and economics, providing seamless access to a wide range of library resources regardless of physical form via a common Web based interface (Whitelaw and Joy, 2001).

This objective was similar to that of MALIBU (see below), although, whereas the latter focused on organisational issues, HEADLINE's unique contributions have related to transferability and to authentication issues. Regarding the former, the project has used freeware rather than developing bespoke solutions. Regarding the latter, the project has developed the "information landscape" concept from the MODELS workshops into the "PIE", or personal information environment. This is a configurable, digital space that provides the user with a personal information landscape and the system with an authorised set of authentication profiles for particular resources.

One element of the PIE was the EEDD (End-user Electronic Document Delivery) pilot service. This acts as a user interface to document transfer using Ariel (such as that offered by LAMDA), by setting up an EEDD server, to which scanned documents are sent and from which they are read/printed by an end-user. The server also provides the facility for copyright declarations to be made (Paschoud, 1999):

Following a trial service to users from a single library, EEDD was piloted between three LAMDA Consortium members, and was cited as an essential element of a proposed new national document access service which has been granted JISC funding (Gambles and Paschoud, 2001).

This service is DocuSend, discussed briefly below. The impact of HEADLINE on UK document delivery, therefore, may be considerable, depending on the outcome of DocuSend.

It should be noted that, in common with AGORA, there was a gap in expectations between the HEADLINE project team and system users (both library staff and end-users). It has been noted that:

... there is still a need to help bridge the gap between the project team and operational staff in the library, a common theme expressed by all the projects (Whitelaw and Joy, 2001).

Again, then, it is possible to argue that technical development may have taken undue precedence over human and organisational issues.

HYLIFE

HYLIFE (<http://hylife.unn.ac.uk/>) set out to “establish, test, evaluate and disseminate across UK HE a knowledge of operating practices for the hybrid library”. The project concentrated on cultural and organisational issues rather than technological issues (Whitelaw and Joy, 2001).

Despite this focus, HYLIFE did develop hybrid library technology as a basis from which to research the “softer” issues. This technology included the “HYLIFE for health” system, which featured an electronic interlibrary loan form. In common with others who have used this approach, they found that:

... the main problem which was encountered was with the use of the electronic interlibrary loan form which could not be sent in electronic form due to copyright restrictions. This was only resolved by asking students to print off the form, fill it out, and post it to the library (HYLIFE, 2000a).

HYLIFE also included a “generic strand” of secondary research, which made reference to the EC PRIDE project concerning document delivery. The PRIDE report merely notes that the ISO-ILL protocol is the open standard and that:

US libraries are following the development of the British Library’s ILL interface, as this may encourage them and others to follow suit and expand on the number of implementation sites (Smith, 1999).

Drawing general conclusions, HYLIFE summarised the potential of HLMS, noting that “the hybrid library will need to maintain an efficient and effective ILL service for as long as users need access to physical books and journals. However, technology can greatly enhance the service in a variety of ways:

- When a user’s search in the local library catalogue fails because the item is not in stock, ILL may be offered immediately (though perhaps only to certain groups of users) as a menu option, with the user’s bibliographic request data pasted into an ILL “form”.
- With rather more sophistication, a failed local search may be run against other

library catalogues to check locations before the ILL option is offered. In some cases, for example, in large metropolitan areas, users may prefer a visit to another library to ILL.

- Users may be able to check the progress of their ILL requests for themselves.
- Sophisticated management and monitoring, including complex quota restrictions and charging, are made possible” (HYLIFE, 2000b).

In addition, of course, any request can be run against a number of suppliers, each being assessed against an institutional or even a personal set of criteria, before it is made active.

While it is hard to argue with any of HYLIFE’s findings, this may be because they do not add significantly to our knowledge of the cultural and organisational factors involved in document delivery in a hybrid library.

MALIBU

The MALIBU project (<http://www.kcl.ac.uk/humanities/cch/malibu/>) has as its main goal to develop examples of hybrid libraries, focusing specifically on the humanities, at each of three major partner institutions (Cave *et al.*, 2001).

Of the phase three projects, MALIBU perhaps addressed interlibrary loan and document delivery the least, being more focused on examining resource discovery methods, both Z39.50-based and others.

Large-scale resource discovery (“clumps”) projects

Having successfully produced a number of virtual union catalogues, the obvious next step for several of the clumps projects was to move from resource discovery to document access. This has been achieved in various ways and to various extents. The RIDING project developed a Windows administration client to support a mediated ILL service between member libraries (Ariadne, 2000). M25link investigated the feasibility of a similar service, and has been involved in the Docusend project (see below). CAIRNS has made similar moves, having been one basis for the GAELS Glasgow-Strathclyde document

delivery service (Nicholson *et al.*, 2000). Regardless of their future in unmediated document delivery services, the clumps have already proved their value for mediated services:

ILL librarians reported an increase in the use and usefulness of CAIRNS to their work, as a result of recent changes to charges by the British Library ILL service (Nicholson *et al.*, 2000).

Current initiatives

Two current JISC initiatives in the field of document delivery draw on eLib work to some degree. They are EASY and Docusend.

The EASY project is an initiative from the joint JISC/Publishers Association working group. Bids were invited:

... to develop a pilot electronic interlibrary loan document delivery service for UK universities and higher education institutions (BIDS, 2001).

The successful bid was from ingenta and Lancaster University, and aims to bring together Lancaster's ILLOS interlibrary loan management system with ingenta's electronic "ingentaJournals" service. The following description of the intended outcome is taken from the project's official documentation (Association of Learned and Professional Society Publishers, 2000):

The outcome of the project will be a system that will screen ILL requests for availability via the ingenta system. If an electronic version of the document is available from ingenta but the user does not have a subscription, then the request is checked to see if it is possible to purchase an electronic copy. If so, and the requester has the right privileges, an electronic copy may be purchased online at a standard charge of £4.20. Otherwise the request is referred for authorisation. Safeguards are built into the system to prevent unauthorised copying and redistribution of electronic copies of articles. If the request cannot be satisfied by the ingenta system, it is passed to ILLOS for normal ILL processing.

Like the eLib projects LAMDA and Seren, then, this project seeks to provide an alternative to BLDSC. The model wherein a rota of suppliers is tried for any one request is clearly taken from the hybrid library projects and other, prior systems such as SilverLinker. The assumption that the system will not affect "normal ILL processing" is also inherited from previous work such as that on Seren and LAMDA.

Docusend is another, and perhaps more ambitious, JISC project. It is funded as a part of the Join-Up programme funded under the JISC 5/99 initiative and aims to make a contribution to the infrastructure of the distributed national electronic resource (DNER), or "portfolio", as it may become (JISC Committee on Electronic Information, 2001). The following description is taken from the EDINA Web site (<http://edina.ed.ac.uk/projects/joinup/seminardocs/annebell.html>):

The overall aim of the project is to create an accessible, easy to use one-stop integrated journal article delivery service. Docusend aims to bring together a wide variety of document delivery and related services in ways that appear transparent and seamless to the user.

Docusend, then, should act as a gateway to services such as EASY and LAMDA, acting in terms of journal article access as a national hybrid library management system. For example, a rota of suppliers would be tried in response to a request (see AGORA, above). Where more than one supplier is found for a particular article, the criteria used to decide between them would be held in a personal profile (see HEADLINE, above).

Like AGORA before it, Docusend will use Fretwell Downing's VDX as the software basis for the project. The consequent licensing requirements for a library wishing to use any future Docusend service are not yet clear.

Conclusions

It is clear that, taken as a whole, the eLib programme has had an impact on UK document delivery services in academic libraries. The overwhelming dominance of the BLDSC has been challenged, most notably by LAMDA, and BLDSC has had to respond by changing its pricing structure as it affects UK higher education. The long-term effects on BLDSC are hard to assess, but they need to be monitored, because they may be felt as strongly outside UK higher education as inside. The eLib programme can, therefore, be argued to have introduced competition into UK document delivery provision. However, it has also introduced collaboration between academic libraries themselves. New and sometimes surprising forms of inter-library co-operation have

emerged (Taylor, 2000). The technical developments have been substantial, but they have often been removed from practical service provision, at least so far. However, it would be hard to argue that eLib has played no part in raising awareness of the potential of electronic document delivery and of the integrated systems of which it can form a part. This cultural change was as much an eLib objective as the technical development, and in this it has surely been highly successful.

Despite much good work, it would be impossible to overstate the impact of the eLib projects. More than one respondent on LIS-ILL noted that "I've never heard of any of these projects". Research and development projects have a fine line to tread between developing visions for future work and building practical systems now. As far as some of the projects are concerned, as Breaks has said:

... the important next step is how do we take forward the substantial investment that has been made in these projects and use the lessons, concepts and tools in working services? (Breaks, 2001).

To the extent that the lessons, concepts and tools have been embedded in commercial software unavailable to most UK academic libraries, then the eLib projects surely have questions to answer. However, it must be acknowledged that Fretwell Downing made an "outstanding contribution" (Tavistock Institute, 1998) to the document delivery side of eLib, especially given that:

... the EDD projects [were] among the most ambitious of the eLib projects, both technically and in terms of service and organisation (Tavistock Institute, 1997).

Perhaps the hybrid library projects raised expectations too high. It is only now with the Docusend project that the diversity of supply initiated by phases one and two is beginning to be addressed as a challenge as well as an opportunity. The phase three evaluation report quotes a hybrid library project worker as saying:

... a reasonably wide range of things were brought together – issues like interlibrary loan or document delivery didn't get covered. We'd need another three years for this to come together (quoted in Whitelaw and Joy, 2001).

With JISC funding for Docusend, of course, the developers have their extension, and so expectations are again high.

Some of the eLib projects looked at the library management of document supply, whether mediated or unmediated (or, rather, without visible mediation). As Breaks notes:

... librarians are always sensibly cautious of new "toys" and are always concerned that any new initiative has to be capable of being supported, sustained and integrated into a service environment (Breaks, 2001).

Much valuable work has been done in this field, by FIDDO, AGORA and others. This work will perhaps have as lasting a value as the technical developments, since issues of institutional policy, organisational change and financial control and accountability are more enduring than pieces of software. It is perhaps in this work that the lasting impact of eLib's work will be felt, once the technical infrastructure is finally built.

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