
*A Study of Collaborative
Storage of Library Resources*

*: Sponsored under the Research
Support Libraries Programme
for the British Library/Higher
Education Task Force*



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June 2001

A STUDY OF COLLABORATIVE STORAGE OF LIBRARY RESOURCES

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1. INTRODUCTION

“The British Library (BL) was keen to explore collaborative arrangements in relation to little used materials, whereas the issue proved not to be a current priority for HEI librarians, mainly because present conditions are not sufficiently turbulent or uncertain to generate bottom-up change, and they tend to assume the BL will continue to supply these services.”

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This quotation from the recently released report from the British Library and UK Higher Education Task Force titled Long term future of the legacy collections of the British Library's Document Supply Centre highlights the constant tension between the problems of managing the present and creating a future. This important study reminds us that we are all part of the whole when it says:

“.. it is essential to understand that little used materials are inescapably part of the larger agenda of collaboration and joint management of resources to achieve and implement an effective national strategy for library and information resources.”

The words ‘cooperation’ and ‘collaboration’ are sometimes used interchangeably. They should not. Cooperation in a library situation implies that the larger cooperate with other libraries recognising that the small will be unable to contribute to the same extent. ‘Collaboration’ recognises that all libraries, large and small, are under pressure and that each can contribute to the solution in different but ultimately useful ways for the benefit of the whole. So it is with the issue of library storage. Cooperative storage is essentially the sharing of a space within a facility while collaborative storage implies a shared approach to the collection in terms of growth, shape, management and access. Collaborative storage provides a more efficient use of resources.

This study is an investigation of the physical options, rather than of digital storage. However, the study does reflect on the prospective relationship between these two responses. The tension is an emerging issue and one which is not yet placed in the policy context of a local, regional or national perspective.

The study has an international scope with a strong input from the United Kingdom, the United States and Australia. Andrew Wells has had a major role to play in the preparation of this report. His understanding of library issues and his wide perspective has enabled the study to readily synthesise the contribution of our literature. A further acknowledgement must be made of the thought and work of Lizanne Payne of the Washington Research Library Consortium.

The UK context

For at least a quarter of a century it has been recognized that libraries, particularly university libraries, cannot expand their collections indefinitely, nor obtain all their information needs from their own collections. An early report to deal with this issue in brutal practical terms was the Atkinson report in the 1970's, which introduced the concept of the "self – renewing library". This proposed that for many university libraries, including research libraries, an optimal storage capacity should be identified, within which the library acquired material and disposed of it in equal measure. This proposition could be supported in the unique context of the UK where the BLDSC was available as a disposal destination and retention facility of last resort.

However the proposition did not hold altogether. Collections continued to grow and successive new buildings, extensions and stores were created. All of the pre-1992 new universities (those created in the late 60's and early 70's) aspired to research excellence for which research collections are a necessity. The post 1992 new universities, whilst much more comfortable with the self-renewing concept, and emphasis on teaching collections, aspire also to research excellence, albeit much more selectively. Storage requirements have therefore steadily increased. As with other funding challenges, librarians have in their very professional way, looked towards collaboration to assist in solving these problems, encouraged of course by funding bodies.

The imperative for collaboration between universities was not however as strong as it might have been because of the benign presence of BLDSC. The BLDSC has acted as the *de facto* collaborative national store, keeping at least one copy of items deemed worthy of retention relegated from universities. In latter years, as storage costs rose, retention became progressively more selective, but BLDSC remains as a last resort.

In 1993 the Joint Funding Councils published the report of their Libraries Review Group, which must rank as one of the most influential policy documents ever in the university library world in UK, with influence also far beyond UK. A root and branch report, it contained, in recommendations 24-27, a fairly gentle exhortation, combined with cash inducements, towards strategic collaboration in support of research. Key phrases are:

- "it is not feasible to expect every institution to be able to provide for all the research related needs of those working within it" (para. 23)
- "there are opportunities for the development of a more strategic approach to promote cooperation and more sharing of resources...."(para. 24)

Apart from special funding for the humanities and for access to the legal deposit collections of Oxford and Cambridge, the main recommendation was for a group to be set up to develop these proposals. (para. 27) The Anderson committee was commissioned in due course.

The Anderson report is also an important, wide ranging document, making a number of far-reaching recommendations. It lays particular emphasis on the provision of information strategies by institutions. We restrict ourselves here to the recommendations specifically relevant to collaborative storage.

- “The Funding Councils should require that institutions’ information strategies provide detail on how the institutions intend to secure adequate access to library material for research in the various subject areas in which they claim to be active”(53)
- “Institutions’ information strategies ought also to provide details of their acquisition and retention policies, their policies on library collaboration...”(54)
- “The Group advocates the formal establishment of a national library retentions policy...” (56)
- “The Funding Councils should open negotiation with the British Library and the National Libraries on the possible devolution of some collection responsibilities to higher education...”(59)
- “Considerable benefits can arise from collaborative arrangements between libraries in a particular locality...”(62)
- “The Funding Councils should require... an account of the collaborative library arrangements in which they are participating” (63)

These are strong recommendations, or rather, if implemented to the full extent, would be quite vigorously intrusive into institutional management and policy. Given the robustness of these recommendations it is noticeable that relatively little tangible progress seems to have been made in collaborative storage and related issues. We have discussed this situation informally with a number of senior UK university librarians and possible reasons for the lack of take-up are explored in section 2 below.

One other contextual point could be noted. The Anderson report mentions that one of the key players in future discussions should be the Library and Information Commission (LIC). The LIC has now been superseded by Resource: the Council for Museums, Libraries and Archives, which has a rather different remit. Whilst the LIC would have placed the issue of library collaboration high on its agenda, it is not clear that Resource will give it such priority. However it has not been possible within the resources of this review to explore that interesting question.

2. RESEARCH REVIEW

2.1 OVERVIEW

This review of the research literature concentrates on management and service issues related to collaborative storage of library resources. The main areas of interest are:

- Arguments for and against remote, cooperative or collaborative storage
- Useful examples of cooperative and collaborative storage facilities
- Management of storage facilities
- Costs and benefits
- Collection management, including issues of ownership and retention of duplicate copies
- Intellectual access
- Physical access

The report has examined published literature published since 1980, although there are references to influential works published before this date. It is probably the case that there are further reports of interest which have never been made publicly available. The nature of these reports would be of a business nature and would be especially interesting in the development of business plans and construction briefs. They have nonetheless been excluded from the scope of this project.

Further, this review has not addressed practical issues in establishing storage facilities. Therefore, issues such as site selection and preparation, architecture, climate control and security have not been directly reported on, except where they have some bearing on the chief areas of interest. For example, inventory control is essential for efficient physical access and delivery. The web site addresses of many storage facilities are provided in the bibliography. These sites frequently contain practical information and contact names.

Space problems and the reduction of capital building costs are the chief reasons for libraries to consider forms of storage. The literature on space utilisation has not been closely examined, although considering other ways to use space is an alternative to collaborative storage. Reformatting of resources through microfilming and retrospective digitisation has not been reviewed, either, because these strategies have substantial costs and are unlikely to relieve space pressures significantly. While retrospective digitisation has been described as a 'panacea' for space problems, discussion of this has been accompanied by a considerable amount of construction of institutional storage facilities: at the end of the 1990s, digitisation was not seen as a cost-effective solution (Chesepiuk 1999). In contrast, the use of compact storage is addressed in this review, because the literature on this topic does consider issues in remote storage, whether cooperative or collaborative. For further information on space utilisation, Fraley provides a comprehensive treatment (Fraley 1990). The application of automated storage and retrieval systems (AS/RS) promises to improve the operational efficiency of library storage facilities. Quinn surveys the use of AS/RS techniques in library storage and provides a literature review (Quinn 1998)

The literature review has not revealed as much on collaborative storage as might have been expected. It is interesting to note Fuhlrott's remarks from 1980, who comments that "progress has not been as great as it could be. This is certainly due to the fact that many librarians – contrary to their own statements – are basically individualists whose primary concern is their own institution. The library needs of their city, state or nation are only of secondary importance to them " (Fuhlrott 1980). This observation tends to be confirmed by most approaches to off-campus storage adopted since 1980. It is useful to introduce the literature by identifying the types of storage revealed in the literature, and what types are most commonly adopted.

2.2 TYPES OF STORAGE

Five types of library storage appear in the literature: institutional; cooperative; collaborative; regional library centre; and, repository libraries.

- **Institutional storage.** This is by far the most common approach, achieved through constructing new buildings on or off campus, usually with compact storage. This approach dominates the literature and real world examples of storage facilities. O'Connor provides a thorough review of institutional storage (O'Connor 1994)
- **Cooperative storage.** In this approach, two or more libraries share a facility, but do not collaborate on what is placed in the store. In other words, it is a more efficient type of institutional storage, through sharing of costs.
- **Collaborative storage.** In this approach, libraries agree on collection management policies for stored materials. This covers policies on duplicates, conditions and ownership of material, subject and format collections, and services to other libraries and users.
- **Regional library centre.** This is characterised as the storage facility which also takes on an active collection development role: the unique example is the Center for Research Libraries (CRL), which began as a collaborative storage facility (it is worth noting that the British Library Document Supply Centre has similar origins but has developed into a different type of service). CRL is now more like a highly specialised collection available by subscription, although it does permit relegation to storage of some classes of materials from its member libraries. The material here is highly specialised while much of the collection has been microfilmed to minimise storage costs.
- **Repository libraries.** IFLA has revived the concept of repository libraries, although a 17 year gap separates conferences on them (1982 and 1999). This initiative is best viewed in the light of IFLA's Universal Availability of Publications program, and has a strong focus on national libraries and legal deposit. There are however some interesting approaches in Europe, particularly Finland, Norway and France.

Fuhlrott adopts the first four levels of this classification, but interestingly describes institutional solutions as 'makeshift' implying that this could only be a temporary solution (Fuhlrott 1980). Lor adopts a slightly different classification, including centres for the redistribution of resources no longer required by libraries (Lor 2000). Redistribution centres are not discussed in this review, although the BookNet service

in the United Kingdom has been one alternative approach to dealing with space pressures and surplus materials in libraries (Smith 1999).

2.3 REASONS FOR AND AGAINST

A 1982 survey of shared repositories by Capital Planning Information showed that while the idea was old, implementations were rare (IFLA International Office for UAP 1982). Both the Follett and Anderson reports recommended that research libraries in the United Kingdom adopt these approaches. In recommendations 24-27. The Follett report made a case for strategic collaboration and sharing of resources to support research (Joint Funding Councils' Libraries Review Group 1993) Two years later, the Anderson report argued for the establishment of a more formal national retention framework, believing this would be more economical and efficient (Joint Funding Councils' Libraries Review Group 1995). If the case for collaborative storage appeared so compelling to Follett and Anderson, it is useful to consider why there has not been more progress in establishing cooperative storage facilities in more countries.

In the United States, there were influential advocates for institutional solutions to space and storage problems throughout the 1960s. The economic pressures of relegating materials to storage comes at the cost to users of removing direct access to research materials. Through keeping materials on or near the campus, inconvenience to users would be offset to some degree. Regional or collaborative approaches were implemented in very few places during this period. Harrar studied the effectiveness of several types of storage, including cooperative and collaborative approaches, but concluded that local availability of materials was most effective (Harrar 1962). Fussler was a strong advocate of maintaining institutional collections through use of compact storage (Fussler 1969). Nearly twenty years later, Gorman supported this approach and remarked that "remote storage is the ugly stepchild of modern librarianship. Not even those who practice it can be said to be proponents" (Gorman 1987). Block surveys the current reasons for antipathy to remote storage: they revolve around problems in deciding which materials to relegate and diminution of access (who decides what?), despite benefits in cost savings, releasing of space and improved environments for the preservation of older, vulnerable material (Block 2000).

Arguments for collaborative solutions to space problems appeared in the literature on collection management and resource sharing. Buckland noted that the collection development and resource sharing literatures paid most attention to acquisition, but needed to also address relegation: "[t]he chronic and massive shortage of library space argues for collaborative approaches to relegation as well as to acquisition" (Buckland 1990). Payne takes up this theme, and suggests that libraries will maintain an optimum size for local collections, while relegating older materials to various forms of storage. "The time is coming when libraries will provide explicit staff and budget support for ongoing storage transfers and weeding just as routinely as they support new acquisitions. By relying on their own facilities for secondary storage, plus an evolving network of cooperating storage facilities, libraries can make the most productive use of their resources and provide the best local collections to their clients." (Payne 2000) However, this debate is unresolved in three areas: how to balance economic issues against service to users; deciding on what materials to relegate; and, forms of cooperation and collaboration (Block 2000).

Will the hybrid print/digital library affect this debate? There is little in the literature so far but some forecasting is merited. Vattulainen suggests that incorporating infrastructure for digital information resources will not relieve space pressures and increase the need for remote storage of print collections (Vattulainen 2000). Quinsee provides evidence that the introduction of information and communications technologies in libraries has increased the amount of space required for each reader (Quinsee 1995). The experience in Australian university libraries supports this, as further space is cleared for more workstations and students require more support for use of information technology by which they will access increasing amounts of digital resources. While some publishers insist that digital access to the serial literature is provided on condition that print subscriptions are maintained, then space pressures will continue (unless, of course, libraries discard the print). This condition may also just be a transitional effect as libraries move more to purely digital acquisition and/or access. Indeed, the provision of one full set of print subscriptions as part of national digital license deals is evidence of the transition. In the United States, the Center for Research Libraries has embarked on a project to acquire a complete file of the paper copies of journals available digitally via JSTOR (Center for Research Libraries 2001). It also highlights that the resolution of the digital archive process is finding a lateral solution in collaborative storage.

However, it is curious that the literature does not address yet what the effect of increasing availability of digital information will be on libraries. Block observes that library planners appear to assume ever increasing print collections and continuing requirements to build storage facilities, but "how long buildings will remain the principal repository of information is no trivial question" (Block 2000).

2.4 EXAMPLES AND CASE STUDIES

This survey covers cooperative and collaborative examples, including some noteworthy national approaches, usually described as 'repository' libraries.

- **Australia**

The *CARM* (Caval for Archival and Research Materials) Centre is a collaborative storage facility operated by CAVAL, a company owned by the Victorian Vice-Chancellors. The operating environment is described on the CAVAL web site (<http://www.caval.edu.au>). Awcock describes proposals in the university environment for Research Resources Australia (RRA) as a national collaborative framework for academic storage repositories around Australia. In its planning stages, RRA is developing guidelines for collection development, retention and relegation of last copies, efficient intellectual and physical access, together with effective governance mechanisms. Awcock provides a thorough survey of storage facilities in Australia (Awcock 2000).

- **Canada**

A cooperative facility is the *TUG Annex*, operated by the TriUniversity Group of Libraries in southwestern Ontario (University of Guelph, University of Waterloo and Wilfrid Laurier University)

- **Finland**

The *National Repository Library* is collaborative and funded by government. It is an important node in Finnish Library system, servicing public and research libraries (Jylha-Pyykonen 1999)

- **France**

The *Centre Technique du Livre de l'enseignement superieur* has been established to relieve space pressure in university libraries and preserve vulnerable materials. It has yet to develop collection development or collaborative approaches (Sanz 1999). It is more a cooperative facility at this stage of its development.

United States

Two surveys during the 1990s show that the majority of storage facilities to be institutional (Association for Research Libraries 1990; Merrill-Odlham 1999). Information on range of storage facilities in US available from Duke University at <http://www.lib.duke.edu/lsc/othersites.htm>. Noteworthy cooperative or collaborative examples are:

- **California.** The *Northern Regional Library Facility* and the *Southern Regional Library Facility* serve the University of California system. The Southern facility invites participation by other public and private libraries, who are charged on a cost recovery basis. Ownership is retained by the depositing library for both facilities. The Northern facility will not accept duplicates.
- **Colorado.** Plans for *PASCAL* (Preservation and Access Service Center for Colorado Academic Libraries) were announced in 2000. This cooperative facility will serve four libraries: the University of Colorado at Boulder; University of Colorado Denver Auraria Library; University of Colorado Health Sciences Center Denison Library; and, the University of Denver's Penrose Library and Law Library. *PASCAL* is implementing innovative approaches to inventory control (Fry 2000)
- **District of Columbia.** The Washington Research Library Consortium is examining moving from a cooperative model to a collaborative one (Payne 2001; Washington Research Library Consortium 2001).
- **Massachusetts.** The *Harvard Depository* is significant due to its influence on institutional storage and the complexity of the libraries at Harvard University. Graham's account of its establishment is useful for any institution establishing a storage facility (Graham 1991)
- **Minnesota.** The *Minnesota Library Access Center* is a collaborative facility for university libraries.

- **Ohio.** Five cooperative facilities for 14 university libraries have been established in Ohio by the Ohio Board of Regents (Ohio Depository Program 1997). A useful site is the *Northeastern Ohio Cooperative Regional Depository*. All libraries are members of OhioLINK, and resources are shared across the state. Each facility has developed autonomously, and there is duplication of materials within and across the repositories (Scalf 2001)

- **United Kingdom**

In British academic libraries, most focus on collaboration since Follett appears to have been on provision of digital information. However we are aware from our informal contacts with senior librarians of the following initiatives:

- **SCURL** (Scottish Conference of University and Research Libraries) is developing a proposal to the Carnegie Trust for a study for a collaborative store in Scotland. It is hoped the eventual funding will come from SHEFC. Participants would be all Scottish Universities, the National Library and Glasgow and Edinburgh City Libraries.
- In the **East Midlands Universities Association** discussions have highlighted major storage problems for Warwick and Nottingham Universities and some minor ones for De Montfort. There was insufficient scale of interest to take the idea further and for the two interested universities it was decided to follow up local initiatives (See below)
- **Nottingham.** A cross-sectoral group (Nottingham University, Nottingham Trent University, Nottingham City Libraries and Nottinghamshire County) hope to acquire a store soon. They would then apply a retrospective review towards collaborative storage.
- **Leicester University** already has a store in which De Montfort currently takes space, but this is a pure rental arrangement, not collaborative. The two University Librarians would be interested in collaboration, but the political and practical issues have yet to be broached more widely within the two universities.
- On a related point, the five **East Midlands Universities** (Leicester, De Montfort, Loughborough, Nottingham, Nottingham Trent) have recently revisited an earlier study entitled COPEMAL which looked at the possible cost benefits of local collaboration on collection management and inter-library loan. The COPEMAL report concluded that it was still more effective and efficient to use BLDS as the supplier of choice. We are told that the recent re-visitation (not yet seen) has again reached the same conclusion. [This would assume of course no major withdrawal of services by BLDS]
- **University of London.** This institution's experience with its Depository Library reveals the value in developing collection development policies for storage facilities. Robinson describes its unusual history (Robinson 1999)

It might reasonably be expected that one or more of the long-standing regional cooperation groups would have developed some schemes. However the **M25 Consortium** (Universities in inner and outer London) has discussed collaborative storage from time to time but it is not currently on the agenda. It is seen primarily as an issue for the traditional research libraries, and not a priority for the others. LSE has just commissioned a new library with capacity for eight years at today's growth rates, and Kings College is also awaiting a facility which is in preparation. The experience with the University of London store at Egham may well have a dampening effect on future initiatives in that region.

CALIM, the Manchester Consortium might also be expected to be discussing collaborative storage, but again it is not on the agenda, although storage is an issue for at least one of the libraries there.

2.5 INHIBITING FACTORS ON COLLABORATIVE STORAGE INITIATIVES IN UK

In informal discussions with senior librarians the following factors have emerged as being possible inhibitors on collaborative storage since Follett and Anderson

- Collaborative storage is mainly an issue for the more traditional research libraries, which makes it difficult to promote in a local region where libraries have different missions
- Paradoxically, although collaboration on research support is encouraged as a matter of national policy, fierce competition in the RAE (another important policy instrument) discourages it
- In internal university politics, collaborative storage is not a vote winner, however much the Librarian as a professional may support it in principle
- Business and economic models are still not proven, particularly in the UK context with good services from BLDSC
- There has been a pre-occupation over the last years with digital library developments which have absorbed much of the energy and enthusiasm for innovations
- The possibility (still unproven but widely predicted) that digital storage may supplant paper storage for some (many?) institutions inhibits investment in stores

2.6 ISSUES

- **Management**

The key decision to be made is whether libraries are merely sharing a facility or sharing or managing the collection within it (Payne 2000). Cooperative or collaborative facilities usually have some form of governing board, with representatives from each participating library. Examples include the CARM Centre, the Washington Research Library Consortium and the University of California's facilities.

- **Costs**

It appears intuitively true to state that “storing in a national or regional repository reduces the storage unit costs on a national level, e.g. in rationalising the storage, storing ... one copy, and savings in staff” (Vattulainen 2000). However, it is difficult to uncover any cost/benefit analyses of cooperative or collaborative storage. Recent surveys of institutional storage do not reveal much either. The 1999 survey of ARL libraries showed a very small number had analysed costs, with 4 aiming for various levels of cost recovery (Merrill-Oldham 1999).

Two articles by Cooper may have been influential in the preference libraries have shown for local and institutional approaches to storage. Cooper developed a cost methodology to assist libraries make decisions about institutional storage. Several options were addressed: location (on or off campus); type of access (open or closed stacks); and, type of shelving (regular or compact). Costs were broken down into construction, selection of materials, processing costs at both the local library and at the storage facility, transportation and circulation. Cooper also notionally costed the time users faced in delays of access to information resources. He concluded that circulation costs from offsite storage showed on-campus compact shelving to be more cost-effective. Costs in selecting material for regional storage were higher because selectors were conscious of the expense in reversing decisions to send materials to offsite storage. This article contains a very good review of cost literature from the 1970s and 1980s (Cooper 1989)

In his 1991 article, Cooper recommended libraries adopting a hierarchy of storage facilities, and concluded that the cheapest option for items which (almost) never circulate was to place them in a closed stack remote facility. The key theme is that potential circulation should influence where to store an item (Cooper 1991)

In Australia, the construction costs for the CARM Centre were funded by a government grant with a matching grant from the member libraries of CAVAL. In this example of collaborative storage, CAVAL is developing a business model which “expresses the construction and operational costs in the form of subscriptions – the ‘pay as you use’ principle. Operational costs are made as accurate as possible – covering selection, transportation, recataloguing, processing and location in the facility. This approach is designed to encourage libraries to take full and early advantage of their subscription capability. They can contract for, say, a 100,000 volume capability over ten years with the subscription period matching.” (Awcock 2000)

- **Collaborative Collection Management**

The literature is dominated by many discussions of criteria for relegation, but they chiefly address institutional storage. Clark is a good example, covering storage, preservation and deselection criteria (Clark 1991). However, Buckland notes that “[t]he decision-making is more complicated in cooperative situations when two or more libraries are depositing copies of little-used material” (Buckland 1990). Hazen covers selection issues thoroughly (Hazen 2000). Gorman pessimistically remarks that any decision to relegate will be wrong because future use is unpredictable (Gorman 1987)

The key distinction made in this report is that cooperative facilities share a space, while collaborative facilities share a space and a collection. Collaborative approaches collide with issues of ownership, when policies on duplicates and last copies are formulated. Libraries can be reluctant to discard an item intended for

storage if the storage facility already holds the item. Payne notes that storage facilities often accept duplicates due to the immediate pressures of saving space (Payne 2000).

Collection size has been a traditional performance measure for libraries, but Buckland suggests "libraries should be judged by whether they provide good library service rather than by the amount of shelving occupied or volumes owned". While ownership issues are politically charged, Buckland suggests that developments in bibliographic control, union catalogues and library system interoperability make collections visible, so that where materials are stored becomes less important. For material predicted to have little future use, Buckland acknowledges that librarians are dealing with probabilities, and the cost of an occasional loan from a storage facility more than outweighs the space savings (Buckland 1990)

The Center for Research Libraries has a collection development policy and actively collects research materials for its members. CRL members can also deposit materials they wish to relegate to storage, but within strict guidelines and the collection development policy of the center. "Since the basic purpose of the Center is to augment the research resources of the member libraries, there is no value in its holding what is commonly available within the member libraries themselves, nor is there value in its keeping what would be worthless in a member library's own collection." (Center for Research Libraries 2000)

Research Resources Australia is intended to be a geographically disparate collection but holding one copy only, in the interests of efficiency (Awcock 2000)

Payne sees opportunities for a collaborative approach among libraries which would support resource sharing. "As shared storage facilities reach maturity, and the initial space pressure in the libraries is reduced, it becomes reasonable for participating libraries to plan their storage transfers collaboratively and to use the jointly operated storage facility as the first source for providing articles from already-owned journal volumes to their clients" (Payne 2000) Lor suggests that large storage facilities will gain identities in their own right, being regarded as collections of first or last resort (Lor 2000)

2.7 INTELLECTUAL ACCESS

The literature emphasises the need for access through local and union catalogues. Use of electronic records and library database management systems decrease processing costs as materials move from the library to the store.


Removing materials to storage eliminates browsing: this is frequently noted as an impediment to relegation. It can be compensated to some degree by scanning tables of contents and linking them to catalogue records (Block 2000)

The regulations for most storage facilities show requirements for machine-readable records as the materials are processed into storage. In the British context, this means that retrospective conversion of catalogues must be completed, and it must be possible to search other library catalogues through virtual or physical union catalogues. Jenkins notes that retrospective conversion efforts are still required in the United Kingdom (Jenkins 2000)

2.8 PHYSICAL ACCESS

It is worth noting that influential articles on storage pre-date developments in the Internet and more efficient forms of document delivery. For example, the use of ARIEL for electronic document delivery has decreased costs for circulation of journal articles.

The web-sites of storage facilities reveal high service levels, with daily turn-around of physical materials common, and widespread use of electronic document delivery. Such services are essential for user acceptance. Many facilities offer reading rooms on-site at the facility, but direct access to the shelves is rare.



3. FINDINGS AND RECOMMENDATIONS

The literature survey has highlighted that there is a resurgence of interest in storage beyond the walls of the open access library. The literature however has not really addressed the issues faced in dealing with out-of-library storage in the context of the internet and the existence of digital resources. There is a real need for the development of comprehensive and connected policies establishing the place of the storage of the physical item in conjunction with the delivery of 'born-digital' resources. This may even suggest the co-existence of practices of storing the physical item with programs addressing 'born again digital' resources.

It is also worth noting that the published literature fails to bring forward reports considering current developments, business models and coherent service models in the digital environment.

There are a number of findings which this study brings forward:

Firstly, there is a consistent trail of construction of institutional storage facilities. These have tended to be for the larger libraries. The issue of continuing ownership is strongly present in these developments. The recommendations of Follett and Anderson have only found limited expression in local cooperative storage facilities in which in which the issues of collections for the nation have not been relevant.

Secondly, there is a clear lack of research into the extent of collection overlap or gap analysis in or between institutional repositories. The rationale for a commitment to collaborative storage lies in the recognition of the inability of local collections to deliver as much as researchers require and an acknowledgement that existing institutional storage facilities may be duplicating effort without addressing collection gaps. The question remains of collection local and regional shape and direction.

Thirdly, there have been powerful theoretical arguments for the development of collaborative storage facilities over the last decade along with a strong and developing practice toward the end of the last decade. The obstacle to a further extension of this practice has been the 'personalities' of the institutional players who retain collection size as an important performance indicator. It is also the case that there is a systemic failure to develop coherent, comprehensive and sustainable service models to which institutional libraries can opt to belong to or only obtain service from. In the UK the economics of local collaborative storage may not be proven. The issue is to deal with the recognised Performance indicators for the success of providers of information service, rather than the collectors of collections without limit.

Fourthly, the capital cost of the construction and sustainable operation of libraries and institutional repositories is a matter of significance. The absence of business models which combine the benefits of internet capability with local and storage facility is a matter of urgency. Business models for sustainable digital libraries are not available on a significant scale and have not had the opportunity to be tested. Sustainable business models are required to support and nourish service models which emphasise local delivery.

Finally, the connection between service models, collection development, storage decisions, repository models is vitally expressed as the Access and Delivery vehicle. There needs to be a recognition of the dual issues of access to and interoperability of devices for bibliographic control, and the ability of the researcher to directly and seamlessly gain delivery of a resource in 'born again' digital form or even physical form.

The literature challenges us to build on the more than adequate understanding of the conditions of storage to the creation of models which enable the library profession to address the conundrum of service and collection.

POSTSCRIPT

It is hoped that this Review encourages the kind of debate which the authors of this report have had as they proceeded through their preparation. It is obviously a much more complex and inter-connected debate than one which centres solely on storage facilities. It seems to us that collaborative storage is an enabler; enabling movement on a range of other issues which might have been previously stalled. It is also paradoxically the case that a physical storage facility can be so central to emerging digital access and delivery systems across the country. It goes without saying that the members of the British Library/Higher education Task Force are capably aware of the complexities of these issues. Suffice it to say that we have enjoyed this task and look forward to how the debate and actions will proceed.



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