Approaches to the storage of low use and last copy research materials

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ABSTRACT: *This paper draws together the issues regarding the retention of print collections for academic libraries in a digital environment. The discussion focuses on a fundamental mission of academic libraries – ensuring ongoing access to older research material; leaving the discussion of the other key mission, providing current and relevant publications, to be discussed in other forums.*

The paper incorporates a review of approaches from the literature and from the authors' own experiences. Issues discussed include selecting material, development and management of print repositories, pros and cons of institutional or cooperative facilities and economic aspects. Although the focus is international particular references are made to the Australian experience

The authors suggest that a network of national, and ideally international, print repositories will provide the most reliable and cost-effective solution.

Academic Libraries face dual problems in dealing with the bulk of their print collections.

Firstly, they have to combat the popular imagination which suggests that all material is accessible through the internet. This argument goes that if all the books are or will shortly be available in digital form then why keep the hard copies. Indeed many libraries have discarded much material but primarily because of a lack of space. The primary driver has not been the advent of the digital book replacement but new directions for library physical space.

Secondly, libraries have great difficulty seeking funds to expand their physical buildings to house these print collections. The difficulty is compounded by university administrators who either do not believe that expanded library buildings for these collections are necessary, or believe that the material should just be digitised. These administrators are more responsive to renovations for re-designed purposes. Most medium to small academic libraries are not recipients of repository space for their own collections.

The certainties of the past as to the role of the library have disappeared for many. The very large libraries continue to collect and to build significant collections on their own but the vast majority of libraries find it increasingly difficult to relate to the metric of bigger and bigger collections. There is also a growing awareness of the importance of using a range of library metrics which incorporate qualitative measures[1]. This is put into sharp relief by the changing role of their own academic communities and the shifting emphases on research and/or teaching. The emphases on research are quite confined and narrow; emphases on science and less emphasis on the social sciences and humanities. So we have two types of academic

library emerging: firstly, we have the large libraries with growing print collections and secondly we have libraries which are scaling back their print collection because of lack of space or uncertainty of the value of these vast tracts of material. In a sense, both types of libraries have much in common. There is a dependency by the small organisations on the large without any overt agreements as to their new 'expected' custodial/ preservation roles. Not only are the roles unclear but the nature of collecting is being redefined and the economics of collecting needs serious examination.

The shape of the debate

There has been a lot of attention given to this issue of storage over recent years. The study by O'Connor, Wells and Collier into collaborative storage of library resources[2] in 2002 was commissioned by the British Library and the Higher Education Task Force to commence a debate in the United Kingdom academic library circles of the need to develop more effective library storage facilities. This paper highlighted that there were five different models of storage. These are Institutional storage, Cooperative Storage, Collaborative storage, Regional Library centres and Repository Libraries. [3] The article examples the CARM Centre in Victoria, Australia and the National Repository Library of Finland as leading examples of the collaborative approach to storage. The collaborative approach eliminates the duplication of items in the collection and develops a single set of collection management practices to drive the growth of a shared collection. Some of these practices in the CARM Centre are articulated within the context of consortium activity in the Victorian academic libraries.[4]

"Most advanced of the newer [collaborative] models is the CARM Centre in Australia"[5]

One of the impacts of declining purchases of materials in academic libraries, particularly in Australia, is the lower availability of a broad range of published materials. Research suggests that through the 1990's around 70% of English-language published materials were held somewhere in Australia. However this percentage has declined in the early part of this century to less than 50% and the indications are that the trend is continuing. This is directly linked not only to a declining purchase power but also to a narrowing of collecting focus across academic libraries. Fewer and fewer titles are being purchased through approval schemes and firm order purchases. Explorations to address this narrowing of the spread of titles were discussed by Pugh and O'Connor with proposals for collaborative purchasing.[6]

The development of SCURL's CASS (Collaborative Academic Library Store for Scotland) evidenced a wide search for organisational models on which to base the local development. This jointly-owned facility indicated: "Collaborative stores are already well established in the USA and a successful model with a similar stakeholder profile to that of the SCURL proposal is the CARM Centre in Bundoora, Australia."[7] The paper by Connaway[8] sought to establish a methodology in order to determine the extent of last copy materials which were seriously at risk of being lost forever. "Preservation of intellectual heritage for future scholars is an important contribution libraries make to a society." The paper goes on: "The last copy of a book placed on open shelves and circulated like general materials could suffer from possible wear and tear. Also, it is possible that any library may unwittingly discard the last copy of a publication. Edward T. O'Neill and Wesley L. Boomgaarden conducted a study on book deterioration and loss, based on a sample of 1,935 books in Ohio libraries published between 1851 and 1939 and representing 872 distinct titles. In the sample, 12 percent of the books

were unavailable for physical examination because they were lost, missing, or weeded from the collections"[9] The study identified that despite extensive library automation systems the capability of identifying last copy or materials at risk was not possible at this time. Still the identification of last copies in a library collection is no guarantee that the items will be preserved for future generations, especially in open stack environments. What is needed is a guarantee that the materials will be retained in perpetuity in proper environmental conditions. This is rarely the case.

Indeed, the rate of discard of materials from academic libraries in recent years has become a fast growing statistic. Over the ten year period 1996 to 2006 there were 3,928,934 non-serial items withdrawn from academic libraries in Australia. In addition over the same period 420,521 serial volumes were reported as being withdrawn.[10] In this process of withdrawal there is no safeguard that these items are being preserved elsewhere. At the same time some 9,475,068 non-serial volumes were added to the Australian collections. This is not a 'steady-state' library situation. If the serial volumes were included in this equation, put simply for every two volumes which were added to the collections, one was withdrawn. This is in itself unremarkable, except that the process is lacking safeguards. Library A, in withdrawing an item, almost always relies on Library B holding the same item as the justification for the withdrawal. A process of determining that another library holds the item is no guarantee that they are indeed not carrying out the same rationale, perhaps even at the same time. There are few if any legally binding agreements amongst libraries to protect the national corpus of material. The loss of so much material in a largely uncoordinated, unrecorded fashion is a matter of considerable long-term concern.[11]

The terminology used to describe library storage facilities varies. Many authors use 'print repository' to describe a facility that brings together low use items from a number of libraries in a secure environment where they may be held indefinitely. This collaborative element which distinguishes the repository from 'stores' owned by individual institutions, whether local or remote, is the crucial factor to achieving the economies of scale that are essential to reducing the cost of long-term storage[12].

The recent study by Lizanne Payne[13] indicates that library storage is clearly now a key component of the collection management strategies of major academic libraries. Her recommendations highlight the further acceleration of space reclaiming need in the libraries located on campuses. The rise and the rise of the storage facilities, especially in individual institutions is highlighted. The need to identify and retain last copy materials, according to Payne is paramount: "Just as LOCKSS (Lots of Copies Keeps Stuff Safe) initiative provides a voluntary distributed system among libraries to preserve electronic resources, a voluntary print repository network could provide a distributed solution to the challenges of print preservation." [14] The report is understandably US-centric, reflecting the geographic emphasis of the publisher of the report. Nonetheless, it is an excellent report highlighting the trend for large libraries to still work alone in their own repositories and the urgent need to establish programs which provide guarantees and aids to planned retention of materials not only across the United States but elsewhere. Indeed a global program to link repositories was proposed at the Second International Conference on Repository Libraries which was held in Kuopio in 2004 under the auspices of the National Repository Library of Finland. This conference established a vision for the 'Universal Repository Library'[15] as being:

- Digital Delivery 24/7 directly to end-user
- Information for free (supported or minimal charges
- Performance and retention public agreements
- Strong local support of regional repositories in close partnerships
- Repositories focussing on existing strengths with multi-lingual approaches
- Virtual Union Catalogue linking repository catalogues.[16]

The URL of Repositories was an attempt to look at achieving a bibliographic connection between major repositories across the globe. It was an attempt to imagine a future and then to work strategically toward that goal. The imagined future would be truly international but would, at the same time, be virtual with an underlying set of service conditions. This was seen as establishing agreed lending conditions and federated-type searches to create an enormously powerful collection of resources. For instance, the strengths of the CARM Centre in English language materials naturally complimented the strengths of the National Repository Library of Finland (Director Pentti Vattulainen) with its strengths in the Slavic languages and poor representation of English language resources. This would create a total resource which was unplanned in collection development terms but powerful in its composite strengths. It also has the advantage of being comprised of collections which are designed for retention and never to be discarded. As such they can be relied upon for access.

A similar concept was developed by ASERL (Association of South East Research Libraries) a virtual storage collection to again assist with the identification of last copies and the wider availability of low-use materials. “The concept is to create a national system of virtual

storage collections by developing inventories of current monographic storage collections, to discover the level of duplication in existing collections, so that libraries can make informed decisions about whether or not to move their copies of monographs to storage or discard them" [17] The proof of concept investigations revealed that 80% of all storage items amongst nine ASERL library storage facilities were unique. There was a low level of duplication of the titles between these collections. The concept is yet to find reality.

The earlier report by CHEMS Consulting[18] was conducted for CURL and the British Library. This report reflected a significant move by the academic libraries in CURL and the British Library to deal with the issue of library space, or rather the lack of it and also the inability of the British Library to continue to be the library of first resort for the whole of the United Kingdom. Again the emphasis of the report is that achieving a national approach is paramount. The report highlights five options: Shared Regional stores; Collaboratively Managed stores; a fully collaborative store; a scheme based on the holdings of the British Library and finally, No central solution but with greater local dependence. Option 4 which was the option to centre a solution around the already extensive collections of the British Library was recommended. This process is on-going, and will see the creation of the National Research Reserve (NRR).

Australian Librarians spent a considerable effort developing the concept of *Research Resources Australia*[19]. RRA would have been initially based on CARM in Melbourne and the then Joint Library Store (now URRSA – Universities' Research Repository of South Australia) in Adelaide[20]. Sadly, the well developed RRA proposal did not finally attract enough support across the breadth of CAUL (Council of Australian University Librarians). Further

clarification on this initiative is spelt out by Genoni,[21] while the Business case can be found at the CAUL web-site.[22] The characteristics were described by Whitehead as:

- The collection is collaboratively owned and all universities belong – RRA also works in partnership with the National Library and state libraries.
- One copy of each item is stored – last copy, unique copy – for everyone; the store will hold at least 2.1 million unique items.
- Capital costs are centrally funded as infrastructure funding and built on an existing infrastructure base – recurrent costs are funded by use
- There is a simple and sustainable financial model (see below) which maximises cost efficiency through economies of scale.
- The store works to international best practice in terms of turnaround time, charges, costs, archival quality space, security.
- RRA is multi-site but consolidated virtually.
- The store focuses on print materials which are relegated locally, but have a value for higher education and research nationally.[23]

Correctly, Genoni identifies that the need for a "unified policy framework is critical. The potential benefits of a national print repository will only be fully realised if there is agreement by participants on a number of key issues that have an impact on the management systems and technologies that can be put in place for discovery and delivery of items, and on the confidence with which libraries can commit items to store or discard them from their collections." [24] The framework developed by Genoni is useful for further discussion here

1. Relationship between existing repositories and a new national service
2. The issue of ownership of deposited materials.

There are common threads between these experiences over the past ten years or so.

Firstly, the *rush to the digital* has been totally captivating and comprehensive. It is not the case that this is unimportant but rather that the traditional roles of libraries to preserve materials has been ignored.

Paradoxically, the convenience of the delivery of digital items to the desktop has masked any debate about ownership whereas making the same case for the print in digital form. In the digital environment access rather than ownership will be both a necessary and achievable goal for research libraries.

Secondly, there is little discussion about which *materials should be collected, retained or discarded*. Collection development is not very much in vogue. Indeed documented collection maintenance policies are not strong on the issue of coordinated discard.

The development of the concepts of a Universal set of repository libraries and ASERL's virtual storage concept allows for broader thinking and action on the part of the national and international communities. What is needed is a lead body to harness the concept and turn it into a reality. The cost of the technological solutions is not unrealistic. These concepts do

not address the issue of which material should be retained but do highlight that which has been retained. Work still has to be done on addressing not only English language materials but the wider world stock which is estimated in 2003 to be between 74 million books and 175 million books (the lower figure if the United States represents 35% of the world's published books, the upper figure if the United States is closer to 15%).[25] With a total corpus of material in this scale, urgent actions are needed to ensure that the benefit for the greatest number is achieved by the least effort.

Thirdly, the debate over *individual institutional storage facilities versus cooperative or even collaborative repositories* has been addressed by a number of conferences but the message has not been heard.[26]

Payne [27]identifies a number of areas of research and importantly highlights the issue of how much redundancy is seen as adequate, even in the United States.

The costs of storage in institutionally owned facilities is likely to be similar to that of collaboratively owned facilities. The costs of operating Cooperative Stores (where a number of institutions share a common infrastructure but maintain individual ownership and space within such a repository) will provide additional advantages.[28] However the real difference in costs comes when collaborative storage facilities such as the CARM Centre are analysed. The experience in the CARM Centre has been that for every volume which a library intends to add to the collaborative, jointly owned collection, one quarter of those titles are already in the collection. This means that for every 100 titles which are added to the CARM collection

125 titles are withdrawn from the individual library. Further, because the total CARM collection is collectively owned by 12 universities across three Australian states, there is a very significant multiplier effect across each of those collections. Titles which might have been previously owned by all 12 libraries can now rely on one title being collectively owned and retained in perpetuity in the CARM collection. The unrealisable capital savings are very, very significant.[29] The benefits to the libraries are in space saved in their libraries and guaranteed access for their users to significantly greater collections than they had previous access to or ownership of.

Fourthly, the *economics of the retention of print in a digital age* remains uninvestigated.

There is much debate about the impact of Google Print and the Open Access models which resonate with long-term collecting aspirations. The relative merits of each approach as well as their costs can be long debated. The critical issue is that copyright will prevent most of the digitized items being accessed in full-text format.

Fifthly, the *costs of conventional library storage* remain a real concern to university administrators.

The cost of space for the storage of library materials generally remains very high. Added to this cost is the unpredictability of which materials will be used into the future and which will not be used. The turnover of academic libraries' collections is very significantly lower than

the collections within public libraries. But then the purpose of collecting is quite different. Good small to medium collections will achieve a 100% turnover of their collections each year. In other words, the loans will equal the total number of volumes in the collection. But as the size of the collection grows and the purpose of the collection tends more toward research then its turnover will fall very significantly. Ironically the cost of shelving individual books in a conventional academic library will increase quite significantly as the range of library space is re-purposed for learning commons or group individual discussion spaces. The cost of conventional library space as opposed to repository spaces will now widen even more dramatically. A major academic library in the United States is reported to indicate that the cost of one book in a conventional library is 13 times more expensive than storing that same volume in a repository located off-campus. The CARM Centre experience is that the ratio would be at least seven times more expensive. The experience in Hong Kong is still incomplete but this ratio is very likely to be easily exceeded. Obviously the nature of this ratio will weigh very heavily on the analyses by Administrators as they weigh up the costs of open conventional library space versus repository space.

In assessing the lessons for the future, it is clear that there is an abundance of experience and positive will to achieve much. It is worthwhile attempting to gather some of this practical knowledge here as a basis on which to grow.

Sixthly, the issue of *ownership of materials* assigned to storage becomes a thorny issue.

It is ironic that the materials purchased by most libraries are funded through public purses. In the United States, there are notable exceptions with many of the large collections in private hands. The issue of ownership usually is raised in terms of commitments to the guaranteed retention of collections of materials. Unless guarantees are given for the permanent retention of materials, the execution of effective collection management policies across a wide range of libraries will not be effective at all. The two repositories at the CARM Centre and the National Repository Library (NRL) of Finland are good examples of shared ownership models. The NRL operates as part of the government run and funded set of libraries across Finland. This includes, school, public university libraries and the supporting National Repository library. The materials were and are being owned by the State and guaranteed for future retention to support the libraries across Finland.

The CARM collection is comprised of materials which have had ownership ceded to it by the Members of the Consortium which is the parent body Caval Limited. In other words, the resources are now owned by a company which in turn is owned collectively by the Members. Other models such as JURA (Joint Universities Research Archive), a proposal currently under close examination in Hong Kong, will not cede ownership but will guarantee retention in a centrally funded store. Further the materials will be stored in running number to maximize the use of space and to emphasise that the materials are intended for permanent retention.

Paradoxically, much of the difficulty with the issue of ownership does not come as an emotional debate but as an accounting debate. Items acquired for any library have a value which then forms a portion of the parent institution's assets as recorded on its balance sheet.

The books will be 'written off' over an agreed period of time. If it is a period for five years then the book at the end of that time will have no economic or accounting value and can therefore be removed from the institution's asset list more easily. Depreciating a book over 40 years will leave it on the balance sheet for a long time and make it difficult to avoid a significant effect on the bottom line of the balance sheet if a significant number of items are withdrawn.

A survey of existing members of CAVAL plus one potential member in late 2006 indicated that there is a large unmet demand for shelving space over the next 20 years[30]. Interestingly, though, the highest demand is for space for collections for which the depositing library retains ownership. The reasons for this are complex, being of mix of economics (contributing to the collaborative collection is more costly due to the necessity of adjusting the catalogues of both the contributing library and CARM), practicalities (the quickest way to move material and create space on campus for non-library usage) and university politics (academics resistance to relinquishing institutional ownership along with retaining the asset value). As space within the existing CARM facility is almost all committed, the CARM2 Feasibility Study showed that there is a clear economic case for expansion.

Clearly libraries need to do further work to make the case demonstrating the advantages of shared ownership and stressing discovery, access and fast delivery of documents to the desktop. In the digital environment ownership is shared, this is likely also to be the most beneficial model for the print environment. This is a significant change from the traditional ownership model.

A further report commissioned by the CAVAL Board in 2007 [31] examined the costs for a range of options including a Base Case of 'do nothing', digitizing and discarding all low use materials, options to build on-campus storage facilities and for contracting a commercial storage provider. The review concluded that the CAVAL model of a collaboratively owned and operated storage facility is the only 'low risk' option available to universities for the storage of low-use research materials based on both financial and service level measures.

The challenges faced by libraries in this regard are manifold. What options are available for the future storage of existing print collections? What items should be preserved for the short-term, and what should be preserved in perpetuity? Who should take responsibility for the long-term storage of print? What should be stored at a regional, national or international level? And indeed, in a world facing the potential of massive 'google-isation' of existing print materials, will even the role of libraries in the collection and storage of print be called into question?

The future

The establishment of a national repository in Australia would not obviate the need for disposal. Indeed its effect would be the opposite, in that libraries would be encouraged to dispose of little used items once they were assured that safe copies were retained in the repository. The benefits would flow from the far more planned and orderly approach to disposal that would result when libraries had a consistent and predictable national policy and procedure frameworks from which to manage their local collections.

The failure to achieve national models or indeed planned distributed models will inevitably lead to a far greater reliance on the existing established repositories where it has been already agreed that retention on a permanent basis is a natural mode of operation. Building on these centres it will be important to build a national and ideally international network of repositories to ensure the long-term preservation and access to lesser used research resources.

In such an environment access rather than ownership will be both a necessary and achievable goal for research libraries. For library users, especially students, new types of collaborative experiences with learning systems and ways of using internet learning resources, will be of greater importance than large print collections. For researchers however the richness of the retention of the printed record is a necessary obligation of library planners.

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[28] It is publicly acknowledged that at the URRSA Store in Adelaide Australia, there is an overlap between the collections of the University of Adelaide and Flinders University in this facility of 15%. The capital costs of this overlap are obviously very significant but clearly politically less important.
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