

The READS Project

resource sharing using e-commerce service strategies

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Abstract:

The READS (Regional Electronic Access and Delivery of Serials) Project is a resource sharing project jointly funded by the Libraries of the University of Melbourne, La Trobe University and Monash University, as a tool for managing the extensive cancellation of serials which all three university libraries had to make in 1998, as a result of the unexpected fall in the value of the Australian dollar and the inexorable increase in the cost of serials in the science and technology disciplines.

The project makes use of Web-based and e-commerce technologies to deliver a "virtual" collection of physics and chemistry serials (held by at least one of the three university libraries) to academic staff and researchers who no longer have easy physical access to those serials due to cancellations.

INTRODUCTION AND RATIONALE

In 1998 a survey of serials cancellations by Australian university libraries conducted by the Australian National University Library showed that the average cancellation for that year was 12.3%. The cancellations ranged from a low 2% to a high 25%, and the dollar amounts ranged from \$43,000 to over \$900,000 (Australian National University Library, 3 September 1998). In 1999, Ray Choate, University Librarian of the University of Adelaide, surveyed the Group of Eight university libraries and discovered that the majority anticipated that they would need to cancel serial titles to the value of about \$500,000 each for the year 2000 (Choate, 26 May 1999).

This phenomenon is obviously not unique in Australia. In most of the developed world, the problem of a large increase in the quantity and cost of scholarly publications has been observed for over a decade now. The result has been a reduction in the ability of research libraries to support the research enterprise of their parent institutions by building comprehensive research collections. A paper co-sponsored by the Association of Research Libraries, the Association of American University and the Pew Higher Education Roundtable points out that there is

a seemingly permanent imbalance between the funds accorded to research libraries and the volume of scholarly output these libraries are expected to purchase and manage. Research libraries that once sought to support an array of specialties within and among academic disciplines now find it necessary to ration their purchases of monographs and subscriptions to journals. While a university library could once build a powerful collection to support its faculty's research and teaching, most must now settle for inadequate assemblages that exist at the intersection of what scholars deem critical and librarians judge they can afford. ("To publish or perish", March 1998).

Within Australia, the Group of Eight libraries together with Macquarie University and the CSIRO have established a Coalition for Innovation in Scholarly Communication "to foster widespread ownership of the agenda for change in scholarly communications through the development of a series of promotional and collaborative strategies" (Coalition for Innovation in Scholarly Communication, 26 August 1999). Many of the strategies are long term ones and will require a considerable time to gestate and produce a useful outcome. In the meantime, a few university libraries have begun to look at shorter term strategies to help tide over the crisis at least for the next five years or so. One of these is READS (Regional Electronic Access and Delivery of Serials) which is based on the MEADS model developed by Monash University Library to manage its serials cancellations.

A snapshot case-study of serials collections in physics and chemistry at La Trobe University, The University of Melbourne, and Monash University in 1998 -1999 highlights the need for a more collaborative approach to collection maintenance and a more effective means of fulfilling the information needs of researchers which have been so severely reduced as a consequence of such cancellations. In 1998, the number of unique journal titles in physics and chemistry subscribed to by at least one of the three universities was 690. By 1999, 312 of these had been cancelled.

As these journals holdings cease to be owned, the information infrastructure underpinning Australia's research endeavours becomes more vulnerable and tenuous. Reliance on external document suppliers means that Australia's innovative approach to standardised charges

become a thing of the past. Furthermore, using local institutions for document supply has the distinct advantage of allowing Australian dollars to be recycled within the country.

READS is basically a resource sharing project jointly funded by the libraries of the University of Melbourne, La Trobe University and Monash University, as a mechanism for managing the extensive cancellation of serials which all three university libraries had to make in 1998, as a result of the unexpected fall in the value of the Australian dollar and the inexorable increase in the cost of serials in the science and technology disciplines. The project aims to provide virtual access to a collection of journals in chemistry and physics via table of contents information and fast-track article delivery of the cancelled serials to academic staff and postgraduates of the three universities concerned.

The project which was started in March 1999 with the appointment of a Project Officer is managed by a Steering Committee comprising representatives from the three university libraries involved. The project is intended to last 12 months, and was launched as a trial for end users in mid October 1999. The Project will be run as a pilot for six months, after which it will be evaluated. Evaluation will include acceptance of READS as a substitute for actual access to hard copies of journals, costs, turnaround times and the like. If the system is found to be popular and cost effective, the partners intend to include titles in other disciplines, e.g. the health and biomedical sciences.

ISSUES AND PROBLEMS

READS is a far more complex project than MEADS on which it is modelled. The partner institutions spent a considerable length of time dealing with a whole host of issues and problems, and these had to be resolved before the project could proceed. A summary of the major issues and problems together with the decisions taken by the partners is provided in the table below.

ISSUE/PROBLEM	DECISION/SOLUTION	COMMENTS
<i>CONTENTS</i>		
How many titles should be included in the READS system?	at least 500 titles	In the end only about 400 titles were included in the system. Only those titles held by at least one but not all three libraries were included.
Should the Table of Contents be purchased from commercial suppliers?	Yes, if possible. However, if the Table of Contents information is not available from suppliers then they will be keyed in by the Project staff	Surprisingly, it was discovered that the contents of about 20% of the titles could not be sourced from our commercial suppliers.
Period of coverage	Articles from 1999 onwards	There was agreement that there would be no further cancellation of the READS titles in 1999
Should titles cancelled in 1998, and no longer owned by any of the three universities be included?	Not included	Software to be designed to allow for this at a later stage.
<i>SOFTWARE</i>		
What database software should be used	Oracle	All three universities have Oracle licences, and have staff with Oracle expertise. Oracle software has the capacity to efficiently handle and store large volumes of data. MS Access was also considered originally.
In what language should be programs be written?	Perl scripts	Originally, a number of different approaches were explored, e.g. using C, ColdFusion, Javascript, PAL, or Visual Basic. The decision to use Perl rested on its excellent support as a software product, its particular suitability for text-messaging, its cost and reliability. Furthermore, each library has systems staff with the requisite Perl experience to be able to help maintain READS software

ISSUE/PROBLEM	DECISION/SOLUTION	COMMENTS
<i>SERVICE ISSUES</i>		
Who are the client groups?	Each university should identify its own client groups	Initially, limited to academic staff and postgraduate students.
Should the participants charge each other?	During the pilot phase, no charges will be imposed	A decision regarding how the service should be funded would be made after the trial.
What should be an appropriate turnaround time?	A maximum of 2 working days.	A trial run showed that articles could be delivered within 48 hours, although most could be delivered in a shorter time period
Should clients be able to request articles from journal owned by their home library?	Generally this would not be permitted.	After the pilot, software will be designed to accommodate possible services such as "cross-campus" requesting.
Should clients have access to articles from journals, that were never owned by their home library?	Yes, during the pilot	Whether this would continue after the pilot would be a decision to be made locally
Should each library supply articles from duplicate journals located in their other campuses?	Melbourne will supply only from Physics and Chemistry branch libraries of Parkville Campus; Monash from the Hargrave Andrew Library at the Clayton Campus; and La Trobe from the Borchardt Library.	This decision would be reviewed after the pilot.
Should there be uniform service rules and guidelines for all participating libraries and their client groups?	No. Each participating library should have the option to tailor the service to their particular needs.	Software to be designed to accommodate customised conditions and constraints.
<i>THE FUTURE</i>		
Would the project be continued after the trial?	An evaluation to assess the acceptability of this model of service delivery would be undertaken. Cost effectiveness of the service would also be examined.	A final decision would be taken on the basis of the evaluation to be conducted.

E-COMMERCE TECHNOLOGIES

From the beginning it was decided that the READS project would utilise e-commerce technologies where these were feasible. Among the technologies available, the following were considered suitable:

- * *Portal technology.* The portal will provide a view of the information space within which users operate. Its importance lies in the fact that it makes use of push and pull technologies. Using pull technology, users, after authentication, can customise their Web access to only show those journal titles in which they have an interest. Using push technology, users can be kept up to date by email regarding the latest information and developments in their field of interest or specialisation (a kind of SDI service, except that the parameters and profiles are drawn up by users). The portal also has the capability of providing chat, email and conferencing facilities.
- * *Web delivery or "Greeting card" technology.* Those of us who have received greeting cards via the Internet will be familiar with this technology. Essentially, it informs the user by email of the availability of the requested document on a Web site and provides an access code (or PIN number) so that only the authorised user can access the document concerned. An example of the type of message that a user may encounter is the following:

Dear Edward
Your Document Delivery request has been supplied
Get document from <http://prospero.lib.monash.edu.au/>
Your PIN number is 3582 = PIN Number
edward.lim@lib.monash.edu.au = Email Address

Going to the URL of the Web site concerned, and entering the access code, the user can then gain access to the document or print the document out. The copy is stored temporarily on the Web site and users will be permitted up to three views before the document is deleted.

- * *Shopping cart engine.* This facility will allow users to select a range of articles that they wish to have, place them in a "shopping cart", review those selected, and then request to have the articles delivered to them. Those of us who have shopped for CD-ROMs or books on the Internet will be familiar with this technology.
- * *Secure payments.* Although the libraries will initially pay the costs of article document delivery, we foresee the day when quotas will be imposed and control of these quotas will be in the form of "virtual cash". Users will be given a certain amount of "virtual" cash by their home libraries, which they can use to pay for document supply. Once this virtual cash is exhausted, users will have to pay real money either from their personal funds or from their departmental or faculty accounts. Consequently, it was felt that there would be a need to develop a secure payments facility some time in the future.

- * *Rights management.* We think that in the not too distant future, it will be necessary to pay intellectual property owners royalties for document delivery services. Consequently, the availability of a rights management system would be important.
- * *Authentication.* It is important that only authorised users can have access to the system, and hence the need to develop an authentication system.

Many of the above technologies are under development. Preliminary analysis indicated that some of these developments would involve a considerable amount of work to bring to a robust level of implementation which would scale up reliably. During the pilot phase, we wanted to demonstrate the feasibility of the system, explore its acceptability to academic staff and postgraduates; and investigate the cost effectiveness of the system. Consequently, the pilot system made use of only a selected number of the above technologies.

After the READS pilot launch in October, a couple of enhancements will be implemented. They are the "MY.READS" feature - which is part of the portal development. This will allow READS users to personalise the service so that they can view article details for their favourite journals as they log in. Another customisation feature will be in the time-coverage of article details displayed at login time (e.g. the latest month, or week).

The second feature is the "shopping-cart" which will allow users to mark articles and add them to the shopping cart incrementally. At any stage, they can review the articles, review the charges for each (as determined by their library's client-group regulations), revise the items collected, view the credit available, and request the articles.

We will also further explore Web delivery of articles, and the "greeting card" alerting option. While the technology is already available for this to be implemented, copyright restrictions currently prevent the delivery of electronic copies of articles via the Web. The proposed Copyright Amendments (Digital Agenda) Bill 1999 may provide some flexibility in this area.

We also wish to explore connectivity between LIDDAS and READS, access of the READS service via the OPACs of participating institutions, automated user-authentication, and possibly exploitation of Z.50 software.

HOW THE SYSTEM WORKS

Essentially, the READS pilot service is a Web-based service providing access to a database of citation details for articles in 400 journals. It offers unmediated document delivery requesting and fast track document supply to registered clients. It also offers streamlined access to journal articles by providing keyword-searchable citation details for these journals. Users can request an article at a click of a button without having to key in the citation details or knowing which university will supply the articles requested.

Requests are automatically emailed to a pre-defined supplying library. Once the article has been despatched to the requestor, suppliers record this on the READS Web site. (This means that requestors can monitor the progress of their requests at any time, without needing to contact their Interlibrary Loans staff). An email is automatically generated to advise the requestor that their requested article has been despatched to them.

If the first supplying library is unable to supply within 2 working days, the first supplier records "non-supply" and reason(s) for non-supply. The request is then automatically forwarded to the next supplier, and the requestor (again by an automatically generated email) is advised of the delay.

The data gathered from tracking requests during the pilot will furnish us with performance statistics, as well as information about factors impacting on suppliers' fill rate.

The system is password protected. It is designed so that eligible users can submit their details electronically and are then authorised by their home library. This saves library staff the task of keying in a client's details. The design of the READS software requires each participating institution to establish user group profiles so that a person being authorised is then assigned to the relevant user group with appropriate quotas, charges and requesting rights. The READS software facilitates an automated filtering process which can be individually configured to meet the needs of each participating institution. Filtering can be implemented for:

- * journals to which they want to provide "unusual" access; and
- * people to whom they want to provide "unusual" access.

During the pilot, the definition of "unusual" access for all participating universities is unmediated requesting and fast-track document delivery.

The system can also

- * bar requests where participating universities have designated that this should occur. Currently the bar only applies where the user's own institution owns the journal title.
- * allow each library to set up preferred suppliers (including commercial suppliers) for a given journal. During the pilot, the preferred suppliers are limited to the participating institutions.
- * provide automatic reporting and usage statistics, e.g. no. of requests by participating institution, no. of articles from a specific journal title, no. of articles supplied to a given institution, etc.
- * check the client's rights on login.
- * automatically increment a user's requests. It is possible to bar document delivery requesting when a quota has been reached. This is not being used in the pilot phase.
- * tally the cost of each transaction, if required, and also impose a monetary limit for each client. This monetary limit could be topped up either by the client or the library. During the READS pilot phase this feature will not be used.

DATABASE STRUCTURE

The Oracle database software has been used to store the data. A number of tables have been constructed, and they include:

- * READS users' details
- * Journal articles citation details
- * Details of article suppliers
- * Journal details (e.g. ownership and supplier details, call number)
- * Requesting and supplying protocols for each journal for each participating institution

- * Request transaction details (including non-supply and reasons for non-supply)

Data is accessed using SQL queries generated by Perl programs. The data queries and output are via web pages created on-the-fly by Perl programs.

TABLE OF CONTENTS ACQUISITION

The success or otherwise of the system obviously rested on the project's ability to acquire table of contents (TOC) information quickly, cheaply and easily. Of the 400 journals initially included in READS, TOC information was only available for purchase from four suppliers for 360 of those titles. Of the 40 titles for which we could not readily purchase TOC details, TOC are photocopied as the issues arrive in a designated supplying library, and these are then keyed in weekly by a staff member. Consideration was given to other TOC creation process such as OCR/scanning. However, this was deemed less efficient than keying in the data, since the arrangement of the scanned data would vary with each title thereby requiring additional work to reformat it appropriately before entering it into the database. Our experiment with keying in our own TOC will furnish us with the data to assess the cost per article of TOC creation.

Typically, the charges for purchasing the TOC are based on the number of institutions accessing the data, and the price for TOC for a year is the same regardless of whether that journal is a weekly or an annual. Clearly as more institutions join READS, it would become cost effective to create, rather than purchase, the TOC.

Because of concern about the TOC details being available before a supplying library has actually received the issue, a system has been developed so that as each issue arrives in a supplying library, library staff record this on READS by triggering the stored TOC so that it becomes accessible to READS client, and the date that occurs is recorded. The program to upload TOC also records the date that it was uploaded. This data will allow us to assess the general delay between acquisition of TOC and issues arriving in the library.

EVALUATION PHASE

As mentioned earlier, READS is a pilot project, established to explore a cost effective way of providing access to journals which a user's home institution has cancelled. It is a strategic way of providing access, but is this form of access acceptable to users? How cost effective is it? The project plans to carry out an evaluation survey at the end of the pilot - around March 2000. If it is found that users are happy with this method of providing access, and if it is cost effective, then the system will be extended to cover other disciplines in the STM (science, technology, and medicine) disciplines, more specifically in the health and medical sciences. As the system is easily scaleable, it would also be possible to increase the number of participating libraries.

CONCLUSION

While READS was originally designed to manage the problems caused by the cancellation of journal titles, it could conceivably be used as an instrument to facilitate cooperation acquisitions or collection building. The system has many advantages.

- * The service is targeted. It allows unmediated access only to those journals which the library would like to have but cannot afford to purchase.
- * It is cost effective, as it limits “unmediated” access only to those journals which are not held by the library.
- * The use of e-commerce technologies allows not only users to customise the service to fit their profile and interests, but also libraries to impose document delivery quotas and other service restrictions should these be necessary.
- * It can help to promote resource sharing. It could provide the foundation for a broad-based approach to regional collaboration in collection development and thus allows participating libraries to reduce the cost of their serial subscriptions without endangering their viability in supporting research.
- * It is particularly suitable in a multi-campus university environment where there may be a decision not to duplicate core journals, but to only acquire one title for sharing across all campuses.

There are some possible disadvantages in the implementation of a system like READS. In the first place, it seems like an “old fashioned” system because it is essentially a system for delivering print based information. Some librarians in fact are of the view that it cannot be considered an innovative system because it is still based on the delivery of print. It is not “sexy” like digital delivery. In response, one could argue that it makes use of Web-based technology to deliver contents page information and to order a document. It is in fact as innovative as any e-commerce system which is used to order and deliver goods and services. It is a very sophisticated system as it will allow the imposition of quotas, the use of "virtual cash" and is easily personalised to suit the profiles of individual users.

In the second place, it is said that the system ignores the fact that an increasing amount of print is migrating to electronic formats. The system in fact does not ignore this development. However, it recognises that the delivery of analogue articles remains the cornerstone of any document delivery system, at least in the near future . Even those publishers who permit their electronic journals to be used for document delivery purposes will only allow the supplying library to deliver the document in analogue form - by printing it, and then faxing or mailing it. Furthermore, it recognises that the present pricing models put forward by publishers of electronic journals are not conducive to resource sharing and are not sustainable.

A further disadvantage relates to the attitude of publishers with regard to the establishment of a system such as READS. They might object to the development of a document supply system *a la* the British Library Document Supply Centre, and may demand payment of royalties. One could of course argue that since the system is restricted to academic staff and students, the fair dealing provisions of the Copyright Act will apply.

There is no question that the scholarly information infrastructure within Australia is under threat, and is gradually being destroyed by the inexorable increase in the cost of serial subscriptions. Many long term strategies are being developed by the library community in the USA, Canada, UK, Europe and Australia. These strategies include trying to change the behaviour of scholars by persuading them not to surrender their intellectual property too readily to commercial publishers, trying to develop competing products, e.g. the SPARC and High Wire Press initiatives, and working in consortia to negotiate better deals with publishers. While these approaches may be successful in the longer term, it is still necessary to develop some short term strategies to deal with the immediate problems facing academic libraries. We believe that the READS system is such a strategy.

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