Electronic Journal Collections: Cataloguing to Improve Access

by John Banbury & Ian Brown
Flinders University Library

Paper Presented to the Australian Library and Information Association 5th Biennial Conference, Adelaide, 27th October, 1998

Abstract:

Traditionally, the way a library user would expect to find a journal is through the use of a title search in the library catalogue. Electronic journals should be no exception. One would expect to find a catalogue record for electronic journals, just as we do for traditional print journals. Integrated citation/journal collections and electronic journal collections produced by IAC, Academic Press and Johns Hopkins Press and other vendors complicate this issue. Such collections, although a very good product for many libraries, are difficult to catalogue at the journal level. It is a simple task to create a catalogue record for "Expanded Academic Index" or "Project Muse" at the collection level, but doing only this would diminish the usefulness and value of the collection. In the end, all a journal user wants is to read it. This is a principal service that libraries offer to their users. However, the way that an electronic journal is catalogued plays a significant role in the quality of the service the user receives, and the likelihood that the user will effectively find the journal he or she needs. It is obvious that few libraries would have the staff resources to manually catalogue these journal collections at the title level. This paper outlines the approach and system that Flinders University Library has devised to "semi-automatically" add catalogue records to maximise user benefit from the integrated citation/journal collections and electronic journal collections to which it subscribes.

Introduction

In May 1997 the Flinders University Library had access to over 14,000 electronic journals, most available through compendia, the largest being Lexis-Nexis. This rich source of full text material was only accessible from within the database provider's online service and most catalogue users were completely unaware that quick and easy access was potentially a click away. Although Document Delivery staff were aware that this material existed, it was time consuming to check each database provider's source.

The prospect of manually cataloguing and maintaining this huge source of material was daunting, but if the process could be automated in some way, the use of the catalogue as a finding tool would be greatly enhanced for both users and Document Delivery staff. Systems staff therefore started looking at ways we could make use of the journal lists available on provider's web pages as a source of brief MARC records.

Electronic Journal Collections

The collections chosen for this project included Expanded Academic ASAP and Computer ASAP from the Information Access Company (IAC) using SearchBank search software, Academic Press journals from the International Digital Electronic Access Library (IDEAL),

the Johns Hopkins Press journals available from Project Muse and Lexis-Nexis. We started with the smaller collections because of their size and also because their web page sources were much easier to manipulate than the large and complex Lexis-Nexis pages.

Dynix System

Flinders has been using the Dynix library system since 1991 and is fortunate enough to have made a partnership agreement with Dynix Australia, now Ameritech, which gives us access to the source code for customised programming. Although this allows us to make minor amendments to the main code to enhance functionality or suit local preferences, in the main part, most customisations are add-ons that interface with the Dynix system. This cooperative agreement has allowed us to automatically create and index Dynix MARC records from a simple text file.

Issues

Cataloguing

Manual vs Automated Cataloguing

Having decided that we should improve access to those electronic journals for which we pay subscriptions, we needed to decide how we would catalogue them. Ideally, they should be catalogued to the same degree that hard copy serial subscriptions are catalogued, ie. full MARC cataloguing on ABN. However, in a non-ideal world, it was impractical to manually catalogue and maintain many thousands of electronic journals, especially the 14,000 from Lexis Nexis, not only in time but also in cost. We therefore considered ways in which we could automate the cataloguing process to not only speed up the process and save money, but also to facilitate easy maintenance to ensure the records were kept up to date.

Full MARC vs Brief MARC

While full MARC records, complete with subject headings, would be preferable, there was no ready source for this data, that we were aware of, that matched our collections. We might be able to get individual records from ABN, but we could not request them as distinct collections. However, we could find lists of titles in each collection via the web that we could use to build brief cataloguing records. Until a ready source of full MARC records became available, perhaps from the supplier or ABN, we decided that brief records would at least give title access to this important source of full text data.

Separate vs Combined Entries

The next question to consider was whether to create separate entries for the brief MARC records, or, to append the electronic access information to an existing serials record in cases where we already had a subscription in another format. The Library's Committee on Electronic Journals recommended in its 1996 report that only one catalogue record should be created to cover all formats. It was thought that this approach would avoid confusion for users who are presented with multiple entries for the same title. Deidre Lowe (1998) reported a similar preference for the "one record approach" in her description of the Virtual Shelf Project at Monash University Library and policies being developed by the National Library of Australia's "Electronic Unit". However, for this exercise, we decided to create a separate catalogue entry for each electronic journal belonging to the consortium collections for the following reasons:

- easier to program
- no complex matching algorithm required
- not all titles had ISSNs to facilitate matching
- easier to identify and maintain as a group

- easier to delete as a group
- does not compromise integrity of normal MARC records

Separate records also allowed us to assign a pseudo GMD of [Electronic Journal] which allows global keyword retrieval for "electronic journal" and search limiting by GMD. The GMD also displays clearly in Dynix list displays so that users can easily distinguish the electronic format from hardcopy or microform formats, e.g.

```
Your Search: Advances in Mathematics

       TITLE   RESPONSIBILITY            CALL NUMBER    PUBLISHER  DATE
   1. Advances in mathematics.                          Serial
                                          510.5 A24      Academic P 1965-

   2. Advances in Mathematics                           [Electronic
Journal]
```

Subject Access

While subject access is desirable, there was no easy way to create subject headings from title lists without manually cataloguing each title. Adding entries to existing full MARC records would solve the problem for those titles already held, but this would only represent a small percentage of the records added. We therefore decided to forgo subject access and rely on title keyword and global keyword access to provide a quasi subject access. It was also believed that most searches for electronic journals would be for specific titles and while subject access is useful, it would not be a primary access mechanism. In particular, we wanted to assist Document Delivery staff in reducing the number of external requests for material held in electronic journal consortia collections of which we were previously unaware when checking the catalogue.

ISSN links

Although ISSNs were available for the 794 titles in the IAC ASAP collections, we originally decided not to include them in the MARC records. An ISSN search option was not available on the OPAC menu and it was unlikely that staff would search for these titles by ISSN. The main reason though, was to avoid an extra step in the serials checkin process. Serials checkin is normally done by ISSN and when only one match is found, it is not necessary for the operator to stop and decide which list entry is the subscription in hand.

Link to Holdings

The decision not to include ISSNs has now been reversed because of the local holdings options available in SilverPlatter's ERL 4 and OVID search software that rely on ISSN links to display local holdings information when searching ERL or OVID databases. Through the ISSN link, it will be possible to retrieve articles and immediately navigate to the full text via the URL that will be included in the local holdings field. In the mean time, ISSNs are now also available for the Academic Press collection that will assist this development.

Access

Electronic journal records are accessible through the following indexes: Title Alphabetical, Title Keyword, Global Keyword and Periodical Title. The ISSN index is only available on staff accounts and does not cover all records. However, ISSNs will be added to as many records as possible as time permits to facilitate the local holdings links described above.

Web OPACs

Electronic journal records were created not only to assist patrons to find the full text sources via the URL field, but also to make this access seamless via a Web OPAC interface. Unfortunately, Flinders is still awaiting funding for the implementation of a Web OPAC on its Dynix system and users must "cut and paste" the URL from the standard Dynix character based OPAC to their Web browser. We hope to install a Web interface over the 1998 Christmas break. In the mean time, Flinders is running a Z39.50 server so that it is possible for external web OPACs with Z39.50 search facilities to browse our catalogue and make use of the URLs.

Web Server

As part of the MARC record creation process, records are also exported through a template into HTML pages that are available on the Library's web server at http://www.lib.flinders.edu.au/resources/ej/a-z/index.html both in subject categories and in an A-Z alphabetical list. Links are also provided to the list of journals maintained at the database provider's site.

Direct Links vs Indirect Links

Unfortunately, not all URL links take the user directly to the full text of the electronic journal they may be seeking. In the case of the IAC titles from Expanded Academic ASAP and Computer ASAP, every electronic journal record carries the same URL http://www.searchbank.com/searchbank/flinders. This simply takes the user to the InfoTrac SearchBank service where they must choose the relevant collection (Expanded Academic ASAP, Computer ASAP or LegalTrac) and then conduct a general search of the entire journal collection. If the user wants to find a specific article, they must then enter sufficient bibliographic details to retrieve that article from a relatively small hit list. If they want to browse the contents of a specific journal title, they must choose the PowerTrac option, select the Journal Name List index and then enter the journal title. Articles are displayed in reverse chronological order, but it is not easy to navigate to a specific issue, especially if it is several years old.

The Academic Press titles available from IDEAL (International Digital Electronic Access Library) and the Project Muse titles provide specific URLs for each title that allow the user to navigate directly to the specific electronic journal from which they can choose a particular issue and article. A general search of all titles in the collection can also be done, which is the IAC default.

Viewers

While this direct access is preferable, output from IDEAL is only available in PDF format which can be quite slow to download, especially over modem lines at home. IAC offer a choice of 3 output formats which include reformatting for quick printing via the Web browser, the slower PDF version, and also an e-mail option to minimise online time.

IP Limiting vs Username/Password

Initially, IP limiting was the only method available to access these services that worked well for on-campus users, but was too limiting for external users not coming through a Flinders IP number, especially at a time when flexible delivery is being heavily promoted. Fortunately, IAC titles are now available through a password option. If the user's IP number falls within the Flinders IP range, access is seamless, but if it does not, the user is prompted for a password before they may proceed. The password mechanism involves searching a file of valid patron barcodes which is held on the Library's web server and refreshed each night

from the Dynix patron file. Password access for non Flinders IP numbers has also been introduced for the IDEAL Academic Press journals.

Reliability

A common complaint about Web resources is their unreliability over time. URLs change or disappear and broken links compromise the integrity of the Library's service. For this project, we rely on the links maintained by the database provider and assume that they are kept reasonably up to date.

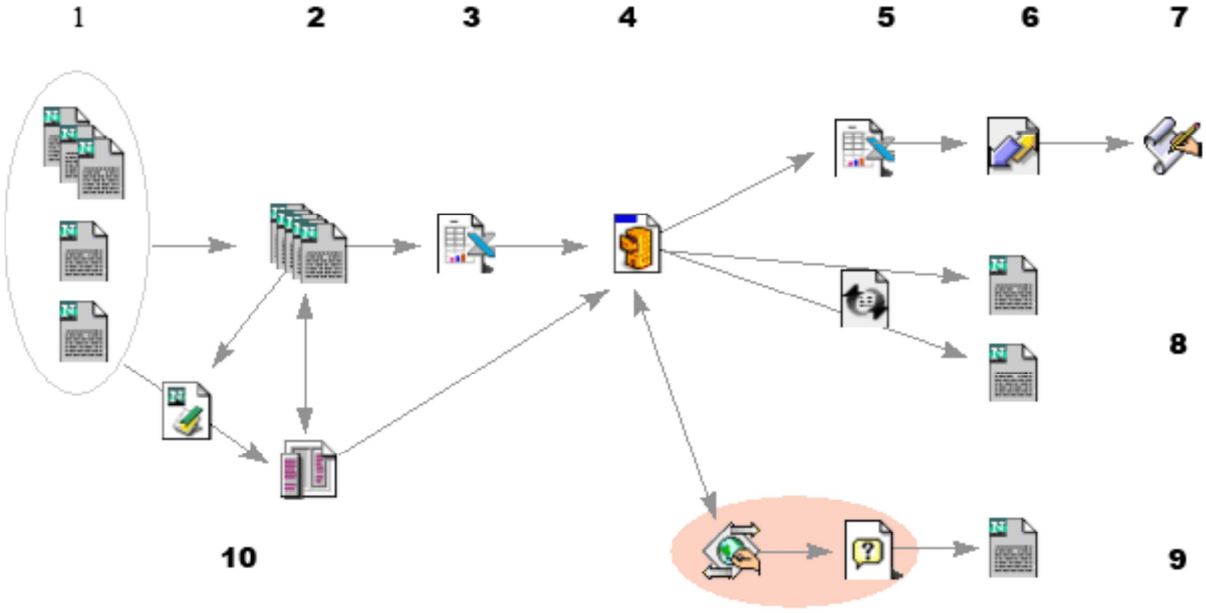
The original web pages are bookmarked in Netscape. On a quarterly basis the "What's New" function of Netscape is used to see if the supplier's web pages have been updated. If the pages have changed they are downloaded and compared with the page downloaded last time (usually Lexis/Nexis is the only source where this is necessary). Titles are checked for changes to full text coverage; such changes are extracted and input into the FileMaker database.

IAC have begun posting monthly changes to their databases on their website at the URL http://library.iacnet.com/searchbank/pubchanges/title_change_menu.html. These pages are checked monthly and updates made to the FileMaker database (average of 3-4 changes per month for our subscriptions).

The pages for Project Muse and IDEAL are not checked as frequently. Both of these sources are quite stable. Checks are made to see if the backfiles have been expanded and changes made to the FileMaker database as appropriate.

How We Did It

The following diagram illustrates the record creation process.



1 Holdings pages on supplier websites

2 Download, bookmark and store

3 Extract tab delimited fulltext holdings file

4	Import into local database
5	Export tab delimited holdings file
6	Import records into DYNIX system
7	DYNIX program converts records into MARC format
8	Export, through template into HTML pages (A-Z and subject based)
9	CGI interrogates database and produces HTML pages "on the fly" (Future enhancement)
10	Subsequent downloads - check bookmark - compare with original - extract changes - update database

Source of Data

Source data is taken from the database provider's home website. The following table shows the current URLs from which our source data is obtained.

Collection	No. of Titles	Source	IP Limit	Pwd	ISSN	Cover-age Note
Expanded Academic ASAP	700	http://library.iacnet.com/jl/sb5091.html	Y	Y	Y	Y
Computer ASAP	94	http://library.iacnet.com/jl/sb5087.html	Y	Y	Y	Y
Academic Press	224	http://www.idealibrary.com/cgi-bin/www.idealibrary.com_8011/iplogin	Y	Y	Y	N
Lexis Nexis	1842	http://www.lexis-nexis.com/lncc/sources/libcont/	N	Y	N	Y
Project Muse	44	http://muse.jhu.edu/journ_descrip/holdings.html	Y	N	Y	Y

These have changed over time and the IAC titles now provide a flat file source for easier incorporation into an Excel spreadsheet. The other collections require varying amounts of text manipulation to massage them into a useable tab-delimited format. In particular, Project Muse requires the most text manipulation, but fortunately only has 44 titles. Journals made available by journal publishers have proven to be quite stable. The only significant changes seem to be the growth of backfiles. Changes in this coverage information are entered in the FileMaker database as appropriate. The 1,842 Lexis Nexis titles are a preliminary sample taken from the NEWS and LAWREV libraries. More will be added as time permits. Sample data from each source appears below:

Expanded Academic ASAP (700 titles)

Journal	ISSN	Index Start	FT Start	FT End	Mag Col	Bus Col	BF Start	FTBF Start	Image Start	Image End
ABA Journal	0747-0088	1/95					1/91			
Adolescence	0001-8449	3/95	3/95				3/91	12/92	6/95	
Adult Learning Formerly: Lifelong Learning: An Omnibus of Practice and Research 9/89	1045-1595	1/95					1/91			
Advertising Age	0001-8899	1/95	11/97			B	1/84			
Affilia Journal of Women and Social Work	0886-1099	3/95	9/95							
Africa Report	0001-9836	1/95	1/95	6/95			1/91	1/93	1/95	6/95
African American Review	1062-4783	3/95	3/95				3/92	12/92	3/95	

```
 Formerly: Black American Literature
 Forum 3/92
Alcohol Health & Research World         0090-838X  1/95   1/95            M           1/92   1/92   3/95
```

Computer ASAP (94 titles)

Journal	ISSN	Index Start	FT Start	FT End	Mag Col	Bus Col	Image Start	Image End
ACM Computing Surveys	0360-0300	3/95	3/97					
ACM Transactions on Database Systems	0362-5915	3/95	3/97					
AI Expert	0888-3785	1/95	1/95	6/95				
Boardwatch Magazine	0894-5209	1/95						
Byte	0360-5280	1/95						
C/C++ Users Journal Formerly: C Users Journal 7/94	1075-2838	1/95	1/95					
CD-ROM World Incorporated into Multimedia World 2/95;Formerly: CD-ROM Librarian 1/93	1066-274X	1/95	1/95	1/95				
Communications News	0010-3632	1/95	1/95			B	1/95	

Academic Press (224 titles)

```
Advances in Applied Mathematics    0196-8858, 1 August 1998
Advances in Mathematics    0001-8708, 10 August 1998
Anaerobe    1075-9964, 1 April 1998
Analytical Biochemistry    0003-2697, 15 July 1998
Animal Behaviour    0003-3472, 1 June 1998
Annals of Botany    0305-7364, 1 July 1998
Annals of Physics    0003-4916, 10 August 1998
Appetite    0195-6663, 1 June 1998
```

Lexis Nexis (1842 titles)

```
Sample from Law Reviews (LAWREV) library
ADMLJ - Administrative Law Journal from Spring 1993
AIRFLR - Air Force Law Review from 1994
AKRONL - Akron Law Review from Summer 1994
ALALR - Alabama Law Review from 1993
ABIJ - American Bankruptcy Institute Journal from February 1994
AJCOMP - American Journal of Comparative Law from Winter 1996
AJCRIL - American Journal of Criminal Law from Spring 1995
```

Project Muse (44 titles)

```
American Imago
      Volume 55
            Number Two, Summer 1998
            Number One, Spring 1998
      Volume 54
            Number Four, Winter 1997
            Number Three, Fall 1997
            Number Two, Summer 1997
            Number One, Spring 1997
```

Each of these source pages was downloaded, bookmarked and stored for future comparison. After checking for page changes subsequent downloads are compared to the previous version to identify changes. The data was then imported into an Excel spreadsheet and cleaned up to ensure correct data appeared in each column. Sorting on the full text coverage column provided a simple way of deleting non full text titles. Common data such as the collection name and accessibility were added with fill down commands. IAC's provision of a flat file makes this task much easier now. The clean data was then imported into a File Maker Pro database that combines records for all electronic journal sources and contains the following fields:

TITLE	
ISSN	
URL	
PARENT	eg. Academic Press

USERNAME	if required
PASSWORD	if required
IPLIMIT	Yes if limited to Flinders IP range
FREE	No for paid subscriptions
TYPE	eg. PDF
COVERAGE	eg. 1994-
LIBRARY	Lexis-Nexis Library name
FILE	Lexis-Nexis File name
BACKFILE	eg. 1991-
SUBJECT	Faculty code for subject based web page

A Subject flag is entered for each record to indicate which subject based web page the title should appear in, eg. "H" for the Faculty of Health.

For each collection, a tab delimited holdings file was exported which was then used as input to a locally written program (explained below). This program converted the text file into Dynix MARC records.

Output from the FileMaker Pro database was also exported through a template to produce HTML pages on the Library Web Server to give an alphabetical and subject based index to the electronic journal sources. A CGI script was trialed to interrogate the database and produce HTML pages on the fly. The CGI worked but the data was not volatile enough to justify the computing overhead and reduction of speed.

The source data is rechecked periodically for additions, deletions and changes. Different methods are used for different sources depending on volatility. Subsequent downloads are compared to the original using BBEdit which highlights differences between the 2 versions. Changes are extracted and used to update the FileMaker Pro database. Minor changes to the Dynix records can be handled manually; significant changes can easily be handled by deleting the original Dynix records as a group and reloading the entire collection.

Local Program Outline

A local customised uniVerse BASIC program was written to process raw tab delimited data to produce brief MARC records. Despite the complexity of the MARC record format, the program is less than 150 lines of code with only 50 lines required to build the MARC record. When the program is run, a choice of electronic journal collection formats is displayed:

```
This program will load a file of electronic journals.  Enter the filename,
eg. EJLIST, or Q to quit ?EJLIST

        What type of file is EJLIST?

        1. Academic Press (IDEAL)
        2. Expanded Academic ASAP (IAC)
        3. Computer ASAP (IAC)
        4. Project Muse
        5. Lexis/Nexis

        Q. Quit

        Enter the file type (1-5, or Q)?
```

Depending on the source data which is different for each collection, the program will then build a Dynix BIB and MARC.BIB record creating the following public fields:

Title
GMD = [Electronic Journal]
Format = Serial
Coverage
ISSN
Access note
URL

The resultant OPAC “card” display appears below.

```
05 SEP 98       INVESTIGATOR - Flinders Central Library    pts/81  12:16pm
                           Public Access Catalog

Call Number ELECTRONIC JOURNAL                                Status : IN

     TITLE  American Imago [Electronic Journal]
    FORMAT  Serial

  COVERAGE  Vol 52 Number 1, Spring 1995 -
      ISSN  1. 1085-7931
    ACCESS  The articles from this electronic journal, which is part of the
            Project Muse (Johns Hopkins University Press) collection, are
            available in full text via the Internet and can be accessed
            using Netscape on one of the workstations located in each
            Library.  Access is restricted to workstations using a Flinders
            IP address, either on campus or via the University modem pool.
            Please ask at the Information Desk if you need assistance.

       URL  http://muse.jhu.edu/journals/american_imago/
```

The access note is built according to the electronic journal collection that the item belongs to, whether access is IP limited and/or whether a username and password are required. The MARC display appears as:

```
05 SEP 98         INVESTIGATOR - Flinders Central Library          12:23pm
                           Public Access Catalog
                                                        DYNIX #: 733024
```

```
LEADER 00000nas  2200000   4500
022 0  0001-8449
245 00 Adolescence$h[Electronic Journal]
538    Many of the articles from this electronic journal, which is part
       of the Expanded Academic ASAP collection, are available in full t
       ext via the Internet and can be accessed using Netscape on one of
        the workstations located in each Library.  Remote access users w
       ill need to enter their Library barcode when accessing this servi
       ce.  Please ask at the Information Desk if you need assistance.
856 7  $uhttp://www.searchbank.com/searchbank/flinders
```

In addition, a number of non-public fields are created to assist in maintaining the data:

Bib No.
Electronic Journal Collection
Date Created
Cataloguing Source

A Holdings record is created in order to assign a collection code that displays under the call number label as "Electronic Journal". It was decided not to create an actual call number field, such as the URL, because in general, long URLs would not fit in the space available for call numbers. With a Web enabled catalogue, users can click on the URL link and connect directly to the electronic journal.

Maintenance

Every 3 months, the source data is reviewed and if significant changes have occurred, all records for a collection are selected and deleted using the Dynix utility Discard Holdings Records (DHR). This utility needed a minor amendment to allow Serials BIB records to be discarded as part of the process (standard Dynix only deletes monograph BIB records, not serials). The new batch of records is actually loaded first to ensure that access is not temporarily lost. Dynix re-indexing of the largest collection takes place in less than an hour.

Highlighting of Current Subscriptions

In addition, a further customisation has allowed us to highlight with inverse video all current serial subscriptions, including electronic journals. This feature not only makes it easier for users to pick the current serials record, but also assists Serials staff during serials checkin when there are multiple entries for a given title.

Problems

Initial Articles

After the initial load we noticed that some titles were not indexing properly. Upon further investigation we discovered that the original version of the program did not allow for initial articles such as "The". The titles were sorted in the "T" section of the index but only retrievable by searching under "Thd" and then browsing forward. This programming oversight was quickly remedied and the records were reloaded. After they had indexed correctly, the previous Holdings and Bib records were discarded using DHR.

Full Text or Not

Although the project was designed to only create catalogue records for full text electronic journals, we discovered that not all of the IAC titles were always available in full text. We therefore had to modify our access note to read "Many of the articles from this electronic journal … are available in full text". Fortunately, this was an easy exercise that required a simple program modification followed by a reload and a simple deletion of the original records as outlined in the maintenance section above.

Statistics of Use

While available statistics do not provide conclusive proof that the inclusion of MARC records in the catalogue has increased electronic journal use in all cases, we did find some interesting figures in the following tables of IDEAL statistics for Academic Press journals that allow us to compare use with other universities.

IDEAL Academic Press Electronic Journals

Use by Australian Universities

Number of Logins

University	Jun 97	Jul-Sep 97	Oct-Dec 97	Jan-Mar 98	Apr-Jun 98	Jul 98	Total	EFTSU	Per 100 EFTSU
University of Queensland	155	2427	3052	4280	1529	835	12278	23566	52
University of Sydney	102	1142	1860	2090	944	453	6591	28032	24
Monash University	73	606	864	1384	841	539	4307	31072	14
University of Melbourne	51	560	684	1141	1201	601	4238	27297	16
Flinders University	16	1130	654	728	792	302	3622	9003	40
University of NSW	37	456	897	959	637	316	3302	23159	14
University of Technology, Sydney	8	488	540	790	928	146	2900	17314	17
University of Adelaide	46	365	421	1011	565	414	2822	12253	23
Australian National University	65	426	583	806	494	263	2637	8424	31
University of Western Australia	28	363	447	990	457	317	2602	12065	22
La Trobe University	2	402	480	881	428	185	2378	17803	13
Macquarie University	10	60	524	835	307	133	1869	13326	14
University of Newcastle	41	174	324	491	497	198	1725	14489	12
James Cook University	2	282	326	591	279	125	1605	7018	23
Swinburne University	23	362	208	393	283	188	1457	8533	17
University of Western Sydney	0	216	140	378	463	185	1382	20953	7
RMIT	40	99	256	444	231	117	1187	21377	6
University of Tasmania	26	135	126	448	237	212	1184	10243	12
Griffith University	38	275	168	327	240	130	1178	17362	7
Curtin University	0	336	272	345	129	52	1134	17504	6
Southern Cross University	3	511	91	68	136	58	867	6179	14
Deakin University	5	345	132	134	84	39	739	18806	4
Queensland University of Technology	19	94	102	310	106	41	672	23827	3
Murdoch University	11	35	114	250	82	103	595	7577	8
University of South Australia	40	180	91	98	140	46	595	17566	3
Charles Sturt University	11	114	110	110	101	49	495	12833	4
University of New England	3	140	167	84	36	62	492	8747	6
Australian Defence Force Academy	23	83	79	76	80	28	369	1427	26
University of Wollongong	4	88	66	100	59	43	360	9924	4
Northern Territory University	3	42	39	182	43	45	354	2790	13
Victoria University of Technology	9	77	90	120	38	14	348	12375	3
Central Queensland University	2	18	126	108	10	10	274	7749	4
Australian Catholic University	4	80	12	142	19	13	270	7210	4
University of Canberra	1	11	106	83	51	9	261	6807	4
Edith Cowan University	1	19	60	24	32	6	142	13892	1
University of Ballarat	0	2	32	77	28	2	141	3849	4
University of Southern Queensland	0	5	0	1	63	60	129	9706	1
Totals	**902**	**12148**	**14243**	**21279**	**12590**	**6339**	**67501**	**512057**	**472**
Average	24	328	385	575	340	171	1824	13839	13
Flinders University	16	1130	654	728	792	302	3622	9003	40
Flinders as % of Total	2%	9%	5%	3%	6%	5%	**5%**	**1.8%**	**8.5%**
Flinders compared to Average	66%	344%	170%	127%	233%	176%	199%	65%	315%

Statistics were compiled from both the American and European web sites.
*Statistics from the American web site were unavailable for April 1998.

In the first table showing the number of logins, Flinders ranks 25th in total EFTSU, yet was the 5th highest user of the IDEAL journals. With only 1.8% of the Australian total EFTSU, it conducted 5% of the total searches. When expressed in terms of the number of searches per

100 EFTSU, Flinders with 8.5% of searches ranks 2nd behind the University of Queensland and has conducted over three times the national average number of sessions.

IDEAL Academic Press Electronic Journals									
Use by Australian Universities									
Number of PDF Downloads									
University	**Jun 97**	**Jul-Sep 97**	**Oct-Dec 97**	**Jan-Mar 98**	**Apr-Jun 98**	**Jul 98**	**Total**	**EFSTU**	**Per 100 EFTSU**
Flinders University	8	610	317	461	691	236	2323	9003	25.8
University of Queensland	123	1275	713	998	1050	802	4961	23566	21.1
Australian Defence Force Academy	20	35	26	15	157	23	276	1427	19.3
Australian National University	43	325	373	399	299	143	1582	8424	18.8
University of Adelaide	38	242	140	260	507	348	1535	12253	12.5
James Cook University	1	159	137	169	312	52	830	7018	11.8
University of Sydney	64	694	425	707	633	340	2863	28032	10.2
University of Western Australia	49	164	172	210	301	272	1168	12065	9.7
University of Melbourne	48	408	273	471	966	441	2607	27297	9.6
University of NSW	31	279	480	463	552	312	2117	23159	9.1
Southern Cross University	1	262	11	42	137	66	519	6179	8.4
Monash University	28	395	399	482	723	439	2466	31072	7.9
Macquarie University	6	31	326	260	253	174	1050	13326	7.9
Swinburne University	26	167	37	55	143	185	613	8533	7.2
University of Newcastle	39	119	97	251	390	125	1021	14489	7.0
Latrobe University	2	237	153	289	278	123	1082	17803	6.1
University of Technology, Sydney	2	338	150	166	271	31	958	17314	5.5
Murdoch University	3	39	53	106	113	98	412	7577	5.4
University of Tasmania	1	62	48	182	131	98	522	10243	5.1
Griffith University	27	255	80	121	178	92	753	17362	4.3
University of Western Sydney		138	60	133	313	99	743	20953	3.5
Northern Territory University	0	17	4	19	24	16	80	2790	2.9
University of New England	4	59	26	50	58	48	245	8747	2.8
Queensland University of Technology	4	28	166	305	61	44	608	23827	2.6
Curtin University	0	147	51	99	110	37	444	17504	2.5
Deakin University	4	256	47	40	56	17	420	18806	2.2
University of South Australia	24	149	29	16	99	64	381	17566	2.2
RMIT	20	54	81	54	183	70	462	21377	2.2
University of Canberra	0	7	68	34	31	4	144	6807	2.1
Central Queensland University	0	3	129	13	6	12	163	7749	2.1
University of Wollongong	1	51	8	54	36	30	180	9924	1.8
Charles Sturt University	15	49	21	24	71	30	210	12833	1.6
Victoria University of Technology	4	42	39	32	40	23	180	12375	1.5
University of Southern Queensland	0	2	0	0	79	57	138	9706	1.4
University of Ballarat	0	0	0	19	9	0	28	3849	0.7
Australian Catholic University	5	25	0	7	9	2	48	7210	0.7
Edith Cowan University	2	2	13	4	30	7	58	13892	0.4
Totals	**643**	**7125**	**5152**	**7010**	**9300**	**4960**	**34190**	**512057**	**246.1**
Average	18	193	139	189	251	134	924	13839	7
Flinders University	8	610	317	461	691	236	2323	9003	25.8
Flinders as % of Total	1%	9%	6%	7%	7%	5%	**7%**	**1.8%**	**10.5%**
Flinders compared to Average	45%	317%	228%	243%	275%	176%	251%	65%	388%

In the 2nd table that looks at the number of PDF downloads, Flinders ranks 1st in terms of downloads per 100 EFTSU and 5th in overall downloads. Flinders made 7% of the total downloads with only 1.8% of the EFTSU population and again made more than three times the national average number of downloads.

Why are Flinders' statistics significantly higher? We'd like to think it was a result of the automatic MARC record creation, but of course it could be due to a number of factors, including links from our electronic journals web page; promotion by our subject librarians;

publicity in our Library newsletter; and the fact that we loaded the MARC records very early in the statistical period covered.

We suspected our statistics would be high, partly because of user feedback and also from anecdotal evidence. Students from other institutions who have access to reciprocal catalogue facilities were requesting access for electronic journal titles that they already had access to in their home institution.

Alternative Solutions

Not everyone can approach this problem in the way that Flinders has. Some libraries do not have local systems expertise to automatically create their own MARC records; some may not think the records are of sufficient quality to include; and some may not believe the time and effort involved is justified.

Vendor Supplied MARC Records

Of course, a better solution would involve the provision of full MARC records from the database provider and perhaps they should be lobbied to provide this additional service. This would not only improve subject access to this body of material, but would hopefully also increase usage and help library managers justify the continued expenditure on access subscriptions. A posting to the CAUL Datasets e-mail list revealed that EBSCO provides MARC records for full text titles in EBSCOhost databases that may be useful to those libraries that subscribe to this service.

CAUL Supplied MARC Records

Another option might involve CAUL supplying MARC records for those collections that it negotiates access to, perhaps through an arrangement with the database provider. However, MARC records supplied in this way would of necessity be generic, whereas the ones created in-house can be tailored to display quite specific access notes.

University of Adelaide

Steve Thomas (1998) from the Barr Smith Library adopted a different approach to the task of creating catalogue records for electronic journal collections. At Flinders, we created the internal Dynix BIB and MARC.BIB records directly, from which we could then export normal MARC records if required. Steve used Perl scripts to create the MARC record first which was then loaded to the Dynix database using standard MARC load utilities. As Steve concludes in his paper, the ease of programming depends largely on the structure and complexity of the source data. Where Steve used Perl scripts to extract the relevant source data, we imported the source text into an Excel spreadsheet and manipulated the data manually, thus splitting the work load between several people.

Exporting MARC Records

Although we have not given serious consideration to sharing our program, it would be possible to export the MARC records we have created for use by other libraries if they thought the brief records would be useful. Of course, we would need to amend the program to create generic access notes and negotiate suitable reimbursement for any custom work performed. It is hoped though, that alternative sources of full MARC records will soon become available that will provide better access. When our project commenced in early 1997, we did not think this a likely possibility for some time and chose to proceed with our project as an interim solution.

Limitations

The limitations of this process are obvious. The pseudo MARC records are quite brief and would probably not pass muster in the eyes of many professional cataloguers. They lack subject analysis of any kind, carry no imprint or collation and in many cases carry a generic URL that does not lead the user directly to the full text of the specific electronic journal.

Conclusion

Despite the brevity of the records and the generic nature the IAC URLs, we have found that the inclusion of 2,900 pseudo MARC records has greatly improved access to a large body of full text material that would otherwise be largely under utilised. As more users come to accept this type of access, it opens up opportunities for the Library to cancel the hard copy subscriptions of some of the lesser used titles to help relieve the pressure on an ever stretched serials budget.

Acknowledgments

We would like to acknowledge the assistance of Kathy Shaw, Network Support Librarian, who assisted with the capture, manipulation and maintenance of the source data from which the catalogue records were created. We also thank the Flinders cataloguers who allowed us to compromise the integrity of their very high standard catalogue with atypical records.

Thanks also to those who responded to our e-mail request for further information.

Bibliography

Department of Employment, Education, Training and Youth Affairs. 1997, *Selected Higher Education Student Statistics,1997*, Canberra.
http://www.deetya.gov.au/divisions/hed/highered/funding/stud1997.pdf

Flinders University Library. Committee on Electronic Journals. 1996, *Report*.

International Digital Electronic Access Library. 1998, *CAUL Statistics*,
http://www.apnet.com/www/ideal/stats/caul/index.htm

Lowe, D. 1998, 'The Virtual Shelf: Cataloguing and Promoting Electronic Resources at Monash', *LASIE*, March 1998, pp.46-54.

Thomas, S. 1998, *On the Automated Generation of MARC Records*,
http://www.library.adelaide.edu.au/~sthomas/papers/genmarc.html