

Notes on Operations

Technical Processing of Electronic Journals

Gail McMillan

Electronic journals portend tremendous advantages to libraries. Patron access is swift and sure; these journals are never missing from the shelves, and they need not be delayed for technical processing because they can be "sent" to public display and serials maintenance almost simultaneously. However, how will library users know what journals are available to them? They should be able to find electronic journals through the same means they find information in all other formats—through libraries' online catalogs. The phrase "mark it and park it" has not lost its relevance in the virtual library environment.

The potential value of electronic journals is tremendous, especially in terms of timely document delivery, direct links from online catalogs, and greatly reduced subscription prices (when there is any charge at all). Of course, they also raise new questions. Can a library provide access? What is the role of technical services in light of this newest format? The electronic journal is another technological advancement to be incorporated into the information sources of the library.

Libraries and their catalogs must continue to provide access to publications in new formats, including electronic journals, for the same reasons they provide access to library materials in existing formats. In a recent article about electronic information and technical services functions, Peter Graham asked, "Mark it and park it? Mark what, and park it where?"¹ Although he

perhaps makes these sound like silly questions, they are still valid issues for libraries, patrons, and readers of electronic publications. The online catalog can continue to be the best integrated source of information to lead readers to the vast resources available to them. Therefore, libraries should also make electronic journals available and provide access through their catalogs.

At Virginia Polytechnic Institute and State University our approach was to look at what actions we could take to provide the community we serve with access to electronic journals in the near future. In October 1990, the university librarian appointed seven faculty and staff to the Task Force on the Electronic Journal. They represented each of the principal areas that would be responsible for processing and handling electronic publications. From the beginning this group was enthusiastic

GAIL MCMILLAN is Serials Team Leader, University Libraries, Virginia Polytechnic Institute and State University, Blacksburg. This note is based on a presentation to the LITA/ALCTS Serials Automation Interest Group, given at the American Library Association's Midwinter Meeting, January 26, 1992. Manuscript received April 13, 1992; revised July 8, 1992; accepted for publication July 9, 1992.

about its charge to investigate and recommend ways in which the library could integrate electronic journals into its processes and procedures. Within six months the task force completed its report. The task force continued as the implementation team, and two months later electronic journals were available to our user community.

Although it considered several practical options, the task force decided storage and access of the full text of electronic journals would have to be on the university's mainframe computer, an IBM 3090-300E, called VM for Virtual Machine. It was accessible immediately, had enough disk space, and was available through local and wide-area networks. Every phone outlet on campus also links office and dormitory personal computers and workstations

to the university mainframe. Many VM users routinely transfer, download, and print files. VM uses the CMS Help System, which has a component called INFO, or University Information, that the libraries have been using to provide campuswide information about university libraries for several years.

Following logon, VM users enter the string of commands INFO LIBRARY E-JOURNAL, or they choose the appropriate sequence of screens and menu selections (see figure 1). These commands lead VM users to a list of titles of available electronic journals. While the task force designed mainframe computer access to electronic journals, it also addressed bibliographic control and internal library technical processing issues. As the task force report

VM/XA VT ONLINE

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      V I R G I N I A   T E C H   C O M P U T I N G   C E N T E R
BITNET: VTVM1
Internet:
VTVM1.CC.VT.EDU
      * VPI & SU
      IBM 3090-300E
      VM/XA 2.1
+-----+
Helpful commands available after you logon:
Computer help ..... 4HELP          Computer news ..... FASTLINE
-----
Fill in your USERID and PASSWORD and press ENTER
(Your password will not appear when you type it)
USERID  ==>
PASSWORD ==>
COMMAND ==>
                                         RUNNING  VTVM1

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Ready;

info library ejournal

VM READ VTVM1

Figure 1. Enter One String of Commands at Logon to Access E-Journals on VM1.

TABLE 1
ELECTRONIC JOURNALS AVAILABLE THROUGH UNIVERSITY LIBRARIES;
THE ORIGINAL FIVE TITLES

Electronic Journals	OCLC no.	BITnet	Internet
<i>Electronic Journal of Communication</i>	23849985	comserv @ rpieces	winter @ ucc.uwindsor.ca*
<i>Journal of the International Academy of Hospitality Research</i>	22332842	jiahred @ vtvm1	jiahred @ vtvm1.cc.vt.edu
<i>New Horizons in Adult Education</i>	23865312	eastmond @ suvm*	
<i>Postmodern Culture</i>	22471982	pmc @ ncsuvm	pmc @ ncsuvm.ncsu.edu
<i>Public Access Computer Systems Review</i>	20987125	pacs-1 @ huhpm1	

*Editor

TABLE 2
THREE JOURNALS ADDED TO FURTHER TEST
THE TASK FORCE RECOMMENDATIONS

Electronic Journals	OCLC no.	BITnet	Internet
<i>Community Services Catalyst</i>	3334057	listserv @ vtvm1	listserv @ vtvm1.cc.vt.edu
<i>Newsletter on Serials Pricing Issues</i>	20386539	tuttle @ unc*	
<i>Psychology</i>	23056090	listserv at pucc	listserv @ pucc.princeton.edu

*Editor

states, "electronic journals can be processed via procedures analogous to those [that] govern the processing of printed serials."²

At the outset of electronic journal testing, five different journal subscriptions were acquired (see table 1). The task force found that requesting a subscription to an electronic journal and receiving and processing an issue are very similar to sending and receiving notes and files as electronic mail and participating in listservs. As issues arrived, files were forwarded to the programmer who implemented the E-JOURNAL option on the mainframe.

One of the early decisions the task force made was that there would be three separate stages of processing and each of these would require a separate user identification and VM account. EJACQ is the user ID established for the acquisitions department to send requests for subscriptions to

electronic journals and to receive issues for check-in. EJCAT is the user ID through which the serials cataloging and maintenance team receives issues to catalog as new titles and performs the ongoing maintenance that all serials require. EJPOST is the user ID for the public display, which we refer to as "posting" to the INFO system. At each stage of processing, files that have been forwarded are not discarded from that filelist until the person sending the file has received notification from the person who is maintaining the files for the receiving user ID that the text transferred successfully.

The task force initially selected five electronic journals to use in testing each phase of processing; they later agreed to add three more titles (see table 2). These titles covered various subject areas, and they provided the opportunity to work with

serials both with and without tables of contents, a challenge when it comes to consistent presentation in public displays. These serials also provide experience processing issues available in single and multiple files and with active and passive receipt patterns.

The Journal of the International Academy of Hospitality Research is published by the Scholarly Communications Project, which became a unit of the univer-

sity libraries in July 1991. *Community Services Catalyst* is another but more recent publication of the Scholarly Communications Project. It is our first journal available both as hard copy and as an electronic publication. The electronic version of *Catalyst* has not been cataloged separately. The bibliographic record for *Catalyst* has general and local notes specifically about the additional electronic version and online access (see figure 2).

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VA TECH LIBRARIES - - - - - VTLIS-89 - - - - - MARC BIBLIOGRAPHIC SCREEN
Local lvl: 0      Analyzed: 0 Operator: 00      Edit:
CNTL: 3334057    Rec stat: c Entrd: 830916      Used: 920327
Type: a Bib lvl: s Govt pub: Lang: eng Source: d S/L ent: 0
Repr: Enc lvl: I Conf pub: 0 Ctry: vau Ser tp: p Alphabt: a
Indx: u Mod rec: Phys med: Cont: ^ Frequn: q Pub st: c
Desc: Cum ind: u Titl pag: u ISDS: 1 Regulr: x Dates: 1971-9999
1. 010 sn83-2451
2. 012 \1 1
3. 022 0 0739-9227
4. 035 0000-29660
5. 040 UCU \c UCU \d NSD \d VPI
6. 042 nsdp
7. 049 VPI$
8. 090 LB2328 \b .C644
9. 210 0 Community serv. catal.
10. 222 00 Community services catalyst
11. 245 00 Community services catalyst.
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Enter 'NS' for more

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VA TECH LIBRARIES - - - - - VTLIS-89 - - - - - MARC BIBLIOGRAPHIC SCREEN
1. 246 13 Catalyst
2. 260 01 Blacksburg, Va. [etc.] \b National Council on Community
Services and Continuing Education [etc.]
3. 265 National Council on Community Services and Continuing
Education, c/o Dr. Charles Atwell, 261 UCOB, Virginia
Polytechnic Institute and State University, Blacksburg, VA
24061
4. 300 v. \b ill. \c 28 cm.
5. 310 Quarterly \b winter 1981-
6. 321 Frequency varies \b 1971-fall 1980
7. 350 $10.00 (U.S.) \a $15.00 (foreign)
8. 362 0 v. 1- winter 1971-
9. 500 Vol. 21, no. 3 (summer 1991)- also available
electronically. Mode of access: Electronic mail on BITNET
(listserv@vtvml) and Internet (listserv@vtvml.cc.vt.edu).
10. 510 0 Current index to journals in education \x 0011-3565
Enter 'NS' for more
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VA TECH LIBRARIES - - - - - VTLIS-89 - - - - - MARC BIBLIOGRAPHIC SCREEN
1. 550 1 Vols. for 1971-19 issued by the National Council on
Community Services for Community and Junior Colleges; 19 -
by the National Council on Community Services and
Continuing Education.
2. 590 Community services catalyst is also available as an
electronic journal and can be viewed on the University's
INFO system on VTM1. Enter INFO LIBRARY E-JOURNL.
3. 650 0 Community colleges \z United States \x Periodicals.
4. 650 0 Junior colleges \z United States \x Periodicals.
5. 710 21 National Council on Community Services for Community and
Junior Colleges.
6. 710 20 National Council on Community Services and Continuing
Education.
7. 949 GMc 3/27/92 (rev.)
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Figure 2. MARC Bibliographic Record for the E-Journal *Community Services Catalyst*.

VA TECH LIBRARIES - - - - - VTLS-89 - - - - - HOLDINGS MENU SCREEN

CALL NO : LB2328 C644
TITLE : Community services catalyst.

1. NEWMAN Copy 1 -Currently received
2. ELECTRONIC REF AREA Copy 1 -Currently received

Enter NEW COMMAND or LINE # of selection or 'HELP'

VA TECH LIBRARIES - - - - - VTLS-89 - - - - - MARC HOLDINGS SCREEN

Local lvl: 2 Operator: Entrd: 860204 Used: 920219
Type: y Enc lvl: 4 Acq stat: 4 Acq method: f Lang: eng
Comp: 2 Gen ret: 8 Spec ret: Com/cop: 0 MBR:
Lend: a Repro: a Cancel: Copies: 001 UPD:
004 0000-29660
010 sn83-2451
022 0739-9227
035 0150-05630
090 LB2328 \b .C644
245 00 Community services catalyst.
246 13 Catalyst
1. 852 \b 0155
2. 853 20 6 8 v. \bno. \u4 \vr \i(year) \j(season) \wq \x24 \3summer 1991-
3. 863 40 6 8.1 21 \b3-4 \i1991-1991 \j22-23
4. 863 41 6 8.3 22 \b1 \i1992 \j24
5. 866 0 6 1 Official \x GMc 2/14/92
6. 866 0 6 95 This electronic journal is available for viewing on the
University's INFO system on VTVM1. Enter INFO LIBRARY
E-JOURNL.
7. 866 0 6 99 Terminals are available for free public access in ELECTRONIC
CONSULTING SERVICES and at the SCIENCE REFERENCE DESK.

Figure 3. VTLS Holdings Menu and MARC Holdings for *Catalyst*.

Catalyst has two separate holdings records: one for the hard copy and one for the electronic journal holdings. It is our policy to create detailed, copy-specific MARC holdings records for all serials; electronic journals are no exception (see figure 3).

SUBSCRIBING

To test the technical processing of these electronic journals, I logged on as the ordering clerk will with the acquisitions user ID EJACQ. I addressed an electronic mail (e-mail) message either to a real person, usually the editor, or to the computerized listserv handling the journal's mailing list. In the case of *Psychology*, for example, I sent a machine-readable command to the e-mail address with one line of text: "subscribe *Psychology* Virginia Tech Libraries." Almost immediately I received notes telling me Virginia Tech Libraries had been added to the list of subscribers. In the case of other electronic journals, including *New Horizons in Adult Education*, *Newsletter on Serials Pricing Issues*, and the *Journal of the International Academy of Hospitality Research*, I wrote to the editors

at their electronic mail addresses and in normal English requested a subscription to their electronic journals. They also responded by e-mail, though not as quickly, telling me the university libraries had been added to their list of subscribers.

Once the request has been made, there are two typical receipt patterns for issues of electronic journals. In the case of the *Journal of the International Academy of Hospitality Research*, for example, issues are distributed electronically to each subscriber. Receipt is a passive activity for the library once its account has been established; passive in that the full text of each issue is sent to the e-mail address of each subscriber, whether an individual or a library. Files of new issues arrive in the EJACQ temporary holding file called "readerlist," and with the push of a function key, it is "received"—that is, moved from the readerlist to the filelist.

A second receipt pattern requires more proactive procedures on the part of subscribers. For some electronic journals, such as the *Electronic Journal of Communication*, subscribers receive e-mail notification when another issue is available, but each new

issue is not automatically sent. With this receipt pattern, once a subscriber receives notification that an issue is available, the subscriber must send a machine-readable e-mail message to receive it. Typically, subscribers must separately retrieve the table of contents which lists the articles in the issue and usually includes instructions on how to receive each article. The message is formulated as: get [author's name] [volume and issue number]. For example, send the message "get marinot v2n191" to retrieve Steve Marinot's article published in the *Electronic Journal of Communication*, volume 2, number 1 (December 1991).

For some online journals, such as *Psycoloquy* and *Public Access Computer System Review*, it is also possible to retrieve an entire issue as a package, rather than having to request each article in an issue as a separate file. The machine-readable command is "Get [journal title] [issue designation] package." For example, to receive the entire first issue of *Postmodern Culture* as a file, the e-mail message would be limited to "get pmcv1n1 package."

Whether or not the machine-readable command to get an entire issue as a package is used, each article arrives as a separate file. Frequently issues of electronic journals have to be sent as multiple smaller files rather than in a single file because the issue is too large to transmit electronically as just one very large file.

Whenever issues of an electronic journal are available, the task force recommended that the serials receiving staff get or receive all the files associated with an issue. They are not asked to be selective and receive partial issues. It will be necessary for someone in the serials receiving unit to check the EJACQ readerlist at least weekly for receipt of new issues. Weekly is as long as the system allows a file to remain unopened in the readerlist before it is automatically deleted.

In addition to receiving or bringing each issue into the acquisitions filelist, the check-in clerk should give each file a cursory check to make sure that basic conventions of text storage have been maintained and that the text is truly readable. Sometimes files in the readerlist initially

appear to be garbled; the receive command that moves the files into the filelist reformats the files into easily readable documents.

CHECK-IN AND CLAIMING

The check-in for electronic journals follows the same procedures as those for serials with standing orders in all other formats. Serials receiving staff incorporate the same "remind" functions now used for online check-in of serials in all other formats. That is, when expected issues are not received, the Virginia Tech Library System (VTLS), the university libraries' online catalog, reminds them to verify that an issue has not yet been sent. Claiming procedures may be somewhat easier than claiming standing orders in other formats because of more direct online access and standard computer commands like the "get" command mentioned earlier to retrieve an issue. The Task Force on the Electronic Journal recommended that serials receiving staff calculate claims by the same means now used for journals in other formats, but of course, irregular frequencies for any journal make claiming and predicting an added challenge. These checks and procedures will more fully evolve as the serials receiving staff becomes familiar with processing electronic journals for online check-in, reminds, and claiming.

It is not necessary to make printouts to use when updating VTLS for check-in and holdings records. It is possible to toggle between e-mail on the university mainframe, any screen on VTLS, and the OCLC Online Computer Library Center database of bibliographic records. It should be as accurate as looking from printout to screen display as toggling between screen displays to verify accurate data entry. For the same reasons, reviewing a new clerk's work could be done online without printouts.

Added issues are checked in online and the MARC holdings record updated at the time of online check-in. VTLS MARC holdings records list in full detail all issues of each title of each electronic journal available online, just as do the holdings

This electronic journal is available for viewing on the University's INFO system on VTVM1. Enter INFO LIBRARY E-JOURNAL.

Terminals are available for free public access in ELECTRONIC CONSULTING SERVICES and at the SCIENCE REFERENCE DESK.

Figure 4. Notes for All Holdings Records of Electronic Journals.

records for serials in other formats. These screens also explicitly direct VTLs users to the sources of the text of the electronic journals and identify the sites of dedicated access terminals. This information appears in free-text notes (MARC tag 866, indicators *b* 0) (see figure 4).

CATALOGING

As with serials in other formats and from other sources, the serials receiving unit will electronically forward to EJCAT, the serials cataloging and maintenance team's user ID, an electronic journal when there has been a change in title, a special issue has been received, or there is some other reason the bibliographic record needs maintenance. An e-mail note could accompany

the file of the journal with the information that is currently written on a "continuation transmittal slip" and attached to the physical pieces of serials in other formats. Electronic journals receive full cataloging treatment, following standards presented in the CONSER guidelines,³ just as do serials in other formats cataloged at Virginia Tech. All serials receive Library of Congress (LC) Classification numbers and subject headings, linking entries, name authority work, and more. By assigning standard LC Classifications, VTLs users browsing in a familiar classification number range encounter electronic journals along with other serials and monographic materials classed similarly. We "mark it and park it" because the libraries' online catalog is the best single place for the scholars and stu-

500 Mode of Access: Electronic mail on BITNET ([user-ID] @ [nodename]) and Internet ([user-ID] @ [nodename]).

Example from *The Journal of the International Academy of Hospitality Research*:

Mode of Access: Electronic mail on BITNET (JIAHRED @ VTVM1) and Internet (JIAHRED @ VTVM1.CC.VT.EDU).

590 This electronic journal is available for viewing on the University's INFO system on VTVM1. Enter INFO LIBRARY E-JOURNAL.

Figure 5. Notes for Bibliographic Records of Electronic Journals.

dents at Virginia Tech to find out what their options for information resources are. Traditional cataloging forms the foundation for effective information retrieval.

The bibliographic record also describes the means of access because VTLIS does not provide a direct link to the full text of electronic journals. The bibliographic record describes two means of accessing electronic journals, a general note (MARC tag 500) and a local note (MARC tag 590) (see figure 5).

One overwhelming advantage electronic journals have over all other formats is that issues can be sent practically simultaneously to both the serials cataloging and maintenance team and the INFO system for public display. With electronic journals, the public access to any issue will no longer be delayed for technical processing because the bibliographic or holdings records need updating.

Each electronic journal is currently available to the university libraries without a fee, so procedures for processing subscription costs and other considerations important to the business services department may not be fully developed. However, in consultation with this unit of the libraries, neither the task force nor the staff involved anticipated any problems. Receipt of the new electronic journal jointly published by OCLC and the American Association for the Advancement of Science, *The Online Journal of Current Clinical Trials*, may provoke the university libraries again to analyze payment procedures at least for this, if not other, electronic journals.

CONCLUSION

Electronic journals have tremendous potential, and although most of them are available without subscription fees, "there's no such thing as a free lunch." Like all library materials, whether received as a gift or paid from the materials budget, electronic journals are costly for libraries in terms of staff

time, equipment, and computer processing. However, not everyone has a personal computer or is able to access the library's or university's mainframe. Those who do may not want to fill their disks, hard drives, or files. What if their computers malfunction or the electricity is off in their homes or offices? These are new considerations, but libraries should provide access to information in whatever formats are available. Right now at Virginia Tech that means providing information about electronic journals included in the libraries' online catalog through access to the issues stored in the university's mainframe computer. Since the Virginia Tech task force report was drafted, several others have also circulated reports including Massachusetts Institute of Technology and Fort Hays State University.

The Tech Task Force on the Electronic Journal's report concludes: "We feel strongly that local storage and access of full text electronic journals is a major step in the migration towards the concept of 'access and ownership.' The handling of electronic journals has important implications for future use of full text document delivery in fulfillment of the goals of the university libraries."⁴ Electronic journals deserve a place in library collections, and the basic technical processes provide the necessary access to information for library users.

REFERENCES

1. Peter S. Graham, "Electronic Information and Research Library Technical Services," *College & Research Libraries*, 51:243 (1990).
2. "Report of the Task Force on the Electronic Journal," University Libraries, Virginia Polytechnic Institute and State University, April 21, 1991. The report was revised for distribution May 17, 1991; p.7.
3. *CONSER Editing Guide* (Washington, D.C.: Serial Record Division, Library of Congress, 1986).
4. "Report of the Task Force," p.10.