Notes on Operations Perpetual Access Information in Serials Holdings Records

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Many librarians find it difficult to compile information about perpetual access to their e-journals because it may be scattered across numerous license agreements. Rather than creating and maintaining a database for perpetual access information that is separate from the order records and holdings information found in integrated library systems (ILS), the University of Memphis is using Innovative Interfaces' Sierra ILS. By leveraging fixed and variable-length fields to record perpetual access information, we can perform queries and generate reports that are helpful in making collection development and preservation decisions.

M uch of the work of librarianship is anticipatory—librarians purchase materials to have them available in case patrons need them, they familiarize themselves with the library collection in case a patron requires guidance, and they bind journals or purchase microfilm in case a current issue will be desired in the future. It is a rare felicitous moment when a librarian sees that anticipatory work put to use almost immediately.

At the University of Memphis (UofM) Libraries, we had the bittersweet circumstance of needing to cancel journal subscriptions for budgetary reasons while simultaneously seeing the outcome of an anticipatory project have an immediate effect on the library's operations. In previous rounds of journal cancellations, we experienced difficulty identifying which titles had perpetual access and processing records appropriately to maintain patron access to the content covered by perpetual access. This is because we had not applied administrative metadata to indicate access rights and changes to e-resource links that would be needed in the event of cancellation. Expecting another round of cuts, we undertook a project to identify perpetual access rights in a stable location. As we reviewed the cancelled titles at the end of our subscriptions, we made use of the perpetual access information that was recorded. This paper outlines some of the issues surrounding perpetual access rights information, alternatives explored by other libraries, and our own experience.

Literature Review

The Digital Library Federation's Electronic Resources Management Initiative defines perpetual access as "the right to permanently access licensed materials paid for during the period of the license agreement."[1] Glasser's survey of e-resource perpetual access rights among libraries further defines perpetual access as material held "before the affected serials were canceled, ceased

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publication, or transferred to different publishers."[2] In the print environment, perpetual access was attained by purchasing, storing, and preserving print volumes of academic journals. This is greatly complicated, however, in the electronic world. Scholarly collections are "licensed" rather than "owned," and any change in the relationship between a library and a publisher (e.g., a canceled subscription, a merger or new acquisition on the part of the publisher) can threaten long-term access to that content. License agreements between libraries and vendors/publishers then become the primary means of communicating agreed-on perpetual access rights and procedures.

Clearly, perpetual access helps fulfill an academic or research library's obligation to preserve scholarly content because it ensures long-term electronic access to that content. In general, most publishers appear to be moving toward granting perpetual access in some form to academic libraries, though Stemper and Barribeau found that commercial publishers are more likely to do so than society or noncommercial publishers.[3] Zhang and Eschenfelder echo these conclusions in an analysis of e-journal licenses, finding that inclusion of license clauses granting perpetual access on expiry of subscription termination is reaching a moderate level of institutionalization among the academic community.[4] While perpetual access is increasingly becoming the norm among publishers, tracking perpetual access policies requires close reading of the most up-to-date e-journal license agreements, which are far from straightforward.

The language in perpetual access provisions is often vague, leading to more than one interpretation of a given policy. This may be partly because of rapid technological changes and consequent attempts by publishers to leave their provisions open to unforeseen circumstances. Clauses also vary tremendously in the terms and conditions of perpetual access. The publisher may deliver content in the form of an archival DVD or CD-ROM, host content electronically from their own server, use a third-party archival service such as LOCKSS or Portico, or simply provide print copies of the affected issues. The license may also require a fee for perpetual access, such as a one-time set-up fee or regular maintenance fee, but the specific costs are usually not provided in the license.[5] In sum, the vagueness and variety of license clauses reflects a larger lack of standardization among scholarly publishers regarding their role in digital preservation.[6] The policies outlined in licenses are not as specific as libraries would like, but careful negotiation during the acquisition process (initial subscriptions, annual renewals, moving from a "big deal" to title-by-title subscriptions, etc.) may allow for compromises that satisfy both parties.[7]

Staffing, time, and finances are also barriers to tracking perpetual access. Carr finds that academic research libraries are largely committed to seeking perpetual access for their e-journals but are willing to compromise this commitment when faced with budget cuts.[8] Glasser discusses the challenges of missing licenses or other documentation, lack of staff, and difficulties in attaining perpetual access for transferred journal titles.[9] Libraries often struggle to keep updated holdings information because of rapid changes in subscriptions and publisher policies.[10] Indeed, Marshall and Bulock state that "perpetual access means perpetual effort."[11]

Just as there are many technological tools for access to and assessment of e-resources (e.g., Serial Solutions, Ex Libris, CORAL), many approaches are available for tracking the diverse nature of perpetual access information. Bulock provides an overview of these systems, with examples to illustrate their advantages and disadvantages. These include electronic resource management systems (ERMS), integrated library systems (ILS), spreadsheets, link resolvers, and subscription agent platforms. These practices are highly divergent between libraries, and most institutions use combinations of these systems that best suit their workflows.[12] Beh and Smith developed customized codes for perpetual access to e-journal packages, which were entered into the order records of their ILS. Their team also developed a workflow to collaborate via spreadsheets on a shared drive, allowing them to update their link resolvers when perpetual access was activated.[13] Blanchat used spreadsheets to track these changes, applying the Knowledge Bases and Related Tools (KBART) guidelines to update OpenURL linking for journal titles with perpetual access.[14]

Finally, Calvert's work was instrumental in the initial development of this project. Drawing on the experience of building a perpetual access workflow for Hunter Library at Western Carolina University, the paper provided basic questions to ask before we began examining licenses and developing a tracking strategy: "Does the publisher/license grant perpetual access? To which years are we entitled access? Which years can we currently access? How much time should staff spend on resolving discrepancies?"[15] Calvert's library also generated three outcomes, which we found to be similar to our overall goals: "to ensure perpetual access is set up properly when a journal is cancelled; to assist staff when troubleshooting access problems; and to verify ongoing access to the title."[16]

Method

Drawing on Calvert's model, we decided to track perpetual access information via a customized metadata scheme in our ILS, Innovative Interfaces' Sierra. The project was initiated by Steven Knowlton, the head of UofM Libraries Collection Management Department at the same time, who long had considered the tracking and storing of perpetual access information to be a much needed step in e-resource management processes. However, lack of staff time was a significant
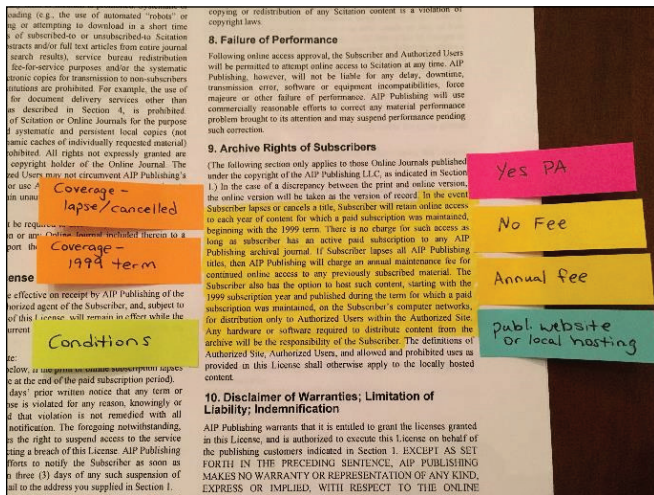
Figure 1. Example of license agreement coded for perpetual access

barrier to implementing such a project—at that time, two of the three positions dedicated to e-resources were vacant. The availability of a practicum student offered a temporary solution. Andrew Grissom, a graduate student in the University of Tennessee's School of Information Sciences, conducted a practicum in the Collection Management Department in the fall 2015 semester. Grissom spent twelve hours per week at UofM Libraries and devoted approximately 95 of the required 150 total hours of the practicum to this project. Rachel Scott, UofM Libraries' integrated library systems librarian, provided strategic planning and systems support.

The first stage began with a review file of order records comprising all active and cancelled serial subscriptions. In Sierra, the "Create Lists" function enables one to compile query results into a list of records, called a review file. This file omitted publisher names, so we identified the publishing body of each title, using both Ulrichsweb Global Serials Directory and EBSCO's online interface, our subscription agent. This list of publishers served as a guide for locating hard copies of license agreements on file within McWherter Library's administrative offices. Using the license agreements in our possession, we conducted a document analysis to determine the perpetual access terms of each publisher's agreement. A color-coding scheme exploying sticky notes was used to identify perpetual access-related topics in the license agreements. For example, yellow tags indicated fee structures for perpetual access, orange tags for coverage information, and green tags indicated special conditions. Figure 1 shows an example of a license agreement coded for perpetual access terms.

A Microsoft Excel spreadsheet built on the review file was used to track each publisher and the perpetual access information obtained from the analysis. The spreadsheet

enabled us to note common trends among publishers and their approach to perpetual access, and to consider the most significant information to record later in our ILS.

The color-coding scheme and analysis revealed three recurring topics in the publishers' discussion of perpetual access in license agreements: coverage, location, and cost. We decided to encode this information in our Sierra ILS. Each record type (bibliographic, holdings, item, order, etc.) comprises both fixed and variable-length fields. Fixed-length fields are encoded with either a date, monetary amount, or a code; Sierra limits the length of the code, the code's definition, the length of the code label or name, and the maximum number of codes used within the ILS. The definition—that is, the legend explaining the meaning of the single letter used as the code—for holdings records fixed-length fields, for example, may not exceed twenty-five characters. Variable-length fields allow for free-text writing and maintain much longer limits on length (up to ten thousand characters). Variable-length fields are repeatable, whereas fixed-length fields are not, and variable-length fields are not required, whereas fixed-length fields, if enabled, will appear in every record of a given type.

Early in the project, we identified fixed-length fields as advantageous for encoding perpetual-access information. Because fixed-length fields are encoded with a single character or "code" and are not repeatable, they generate cleaner lists and reports than variable-length fields. Variable-length fields leave room for human error both in data entry and in report generation. The question then became which of the existing fixed-length fields should be used to encode perpetual access information. Because creating new fixed-length fields or enabling existing fields requires a service commitment or opening a ticket with Innovative Interfaces, we investigated which of the available fixed-length fields might be serviceable. Including perpetual access information in the serial's order record makes a great amount of sense; however, all the order record fixed-length fields were already being used to encode order-specific information. Instead, we selected serial codes 1, 2, and 3 in the holdings records because they were not already in use. Selection of these fields for storing perpetual access information was presented and discussed during a meeting of the University Libraries' Integrated Library Systems Advisory Council before implementation; the council unanimously accepted this course of action.

A metadata schema was developed for serial codes 1, 2, and 3, corresponding with the coverage, location, and cost information obtained from the license analysis. The schema includes a single character code and definition up to twenty-five characters for each serial code. Table 1 provides the full schema.

In addition to fixed-length fields, a variable-length field (i.e., internal note) was used to augment serial codes 1, 2,

Table 1. Fixed-length fields in Sierra holdings records with perpetual access information.

Serial Code 1 (Coverage)	Serial Code 2 (Location)	Serial Code 3 (Cost)
b BACK CONTENT	a PHYS ARCHIVAL MEDIA	a ANNUAL FEE
c PUBL+CEASED CONTENT	c PUBL CHOICE OF LOCATION	f FREE ACCESS
f PA INFO NOT FOUND	e E-FILES SENT BY PUBL	o ONE-TIME FEE
n NO PERPETUAL ACCESS	f E-FILES OR PUBL ONLINE	n NON-SPECIFIED FEE
p CONTENT PUBL UNDER SUB	m ARCH MEDIA OR 3RD PARTY	r ONE-TIME+REPLACEMENT FEES
s SEE NOTES	o PUBL OR 3RD PARTY ONLINE	s SEE NOTES
t PUBL+TRANSFERRED CONTENT	p PUBLISHER ONLINE ACCESS	
u PUBL OR BACK CONTENT	r ARCH MEDIA OR PUBL ONLINE	
	s SEE NOTES	
	t 3RD PARTY ONLINE ACCESS	

Table 2. Examples of publishers with fixed-length and variable-length fields for perpetual access information.

Publisher/License	Serial Code 1	Serial Code 2	Serial Code 3	Internal Note
AIP Publishing	p CONTENT PUBL UNDER SUB	p PUBLISHER ONLINE ACCESS	s SEE NOTES	Annual fee (waived if subscribed to at least one AIP archival journal).
Emerald	t PUBL+ TRANSFERRED CONTENT	f E-FILES OR PUBL ONLINE	s SEE NOTES	Free access to merged journals unless a title substitution is made. Perpetual access to all licensed materials requires new license.
London Review of Books	p CONTENT PUBL UNDER SUB	s SEE NOTES	f FREE ACCESS	Publisher sends copies in facsimile or text format.

and 3. For example, a publisher that required an annual fee for perpetual access but indicated that the fee could be waived under certain conditions was coded "s SEE NOTES" under serial code 3 and given an internal note that explained this case in more detail. Table 2 displays examples of publishers with both fixed-length and variable-length codes to represent perpetual access. Figure 2 shows a screenshot of a holdings record with perpetual access codes, in this case from a title published by AIP (American Institute of Physics).

Publishers were contacted in those cases where clarification was needed or a license was not on file. While all respondents answered our query regarding perpetual access information in terms of coverage, location, and cost, others sent us the most current license template for academic institutions. Delayed or incomplete responses from some publishers forced us to begin entering the fixed-length codes in stages: first a batch of entries for the publishers whose licenses we had on file, then new batches of entries based on publisher responses.

Limitations

Coding the holdings records was not efficient for several reasons. The fixed-length codes were manually entered, rather than by global update. Doing so made sense as we determined the parameters and scope of the project, especially at initial stages when only a few licenses had been obtained.

However, even after the schema was approved and the plan was devised, we struggled to generate a comprehensive and accurate review file on which to run global updates. Running lists on particular data in bibliographic records was not successful because bibliographic records for serials are not regularly updated via an automated process and are inconsistently encoded.

The spreadsheet used to track workflows contained the title, database order record number, status (active or cancelled subscription), publisher, and codes for perpetual access information. Because the lists included the Sierra order record number and not the holdings record number, and the two different record types do not necessarily have a 1:1 relationship, there was some hesitation to compile a review file with the available data. Generating a list of holdings records with corresponding order records would potentially omit data. The most recent Sierra software update (2.1) includes the capability to import record numbers into a review file. Previously, this was achieved by creating macros to compile review files from a list of record numbers or by converting a list of order numbers into a MARC file using the Delimited Text Translator tool (in MARCEdit) and loading it via Sierra's Data Exchange module. MARCEdit is an external editor that enables users to convert to and from MARC from a variety of file formats. Using MARCEdit for this purpose requires one to export data from Sierra, ensure that order numbers contain check digits, create or customize a load table that does not compromise the integrity of the

Figure 2. Example of a single serial title

data at the point of the load, instruct the database to "Use Review Files" before beginning to load the data, and, finally, load into Data Exchange.

Global updates occurred instead for the variable-length field (i.e., internal note). After manual coding of serial codes 1, 2, and 3, running accurate lists became possible via Sierra's "Create Lists" function. Most publishers differed in their perpetual access information as represented in our designated codes; therefore we were able to run lists of titles not through the commonality of their publishing body but through their unique combination of fixed-length codes. For example, the query shown in figure 3 produces only titles published by Emerald. Sierra's "Global Update" was used to insert internal notes in the holdings records.

Results

The coding system for perpetual access is now applied to 1,660 unique titles in UofM's e-journals collection. For this system to continue to perform as intended, workflows have been planned to keep the information up-to-date. At the point of adding a new subscription to the ERM, we will determine whether the title falls under an existing license agreement. If it does, we will apply the predetermined serial code values for the publisher. If the title requires a new license agreement, we will analyze the agreement for the values of coverage, location, and cost of perpetual access, and apply appropriate serials codes. We explored the possibility of hosting PDFs of license agreements in Sierra's "Media Management" module. However, although documents can be scanned, uploaded, or linked, suppressing the document from public display is impossible.

Shortly after completion of this project, UofM Libraries terminated subscriptions to several hundred journals. Because each title has been encoded with perpetual access information, it was easy to run a review file of cancelled titles and export the perpetual access information. In most cases, publishers offered perpetual access directly via their online platform, requiring us to only change the "dates available" metadata fields in Serials Solutions and Sierra. Others delivered perpetual access content under more complex terms, such as through an agreement with Portico, prompting staff to contact publishers and initiate the process to activate alternate means to access our entitled content. Still others provided no perpetual access, requiring links within our link resolvers to be disabled. A process that in earlier years would have required manual lookup of scores of titles, requiring many hours of work, was reduced to a simple "Create Lists" query and a few hours of work interfacing with publishers.

Conclusion

We recommend a project such as this for libraries that provide e-journals to their patrons; it simplifies the necessary tasks surrounding journal cancellations and in the future will allow us to more easily make informed decisions about cancellation of titles when perpetual access is a concern. This is also an advantageous opportunity for collaboration between library personnel. As perpetual access affects the long-term accessibility and preservation of e-resources, it also affects all the means by which library staff can effectively provide services to their patrons. An effective process for tracking and storing perpetual access information requires everyone's expertise—including, but not limited to, access services, reference, collection management, and ILS personnel. Sierra users may drastically differ in which fixed-length fields are open or in-use for specific record types—we used holdings records because of currently existing internal practices—but others may discover options that provide the best solutions for storing perpetual access information. By generating these solutions, library personnel will gain invaluable knowledge of their own systems and serial inventories.

Staff time is a significant barrier to tracking perpetual access. A project such as this one demands hours of examining license agreements, developing a strategy to record and store perpetual access information in a stable location,

Figure 3. Example of a query across single serial code fields to produce a list of titles from a single publisher

and establishing a workflow to carry these processes into the future. In our case, the contributions of two full-time staff members and a practicum student proved essential to tracking perpetual access across a substantial portion of the university's e-journal collection. Starting from scratch on perpetual access may seem overwhelming, but this kind of project is a proactive step toward ensuring that perpetual access is provided whenever it is available.

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