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Improving access to electronic and print journal holdings with AJAX and a “smarter” catalog

Introduction

The library has struggled with the various ways to represent, catalog and manage online equivalents to our print serial holdings. With electronic journal holdings increasing every year and content subscription deals constantly in flux, making the library’s electronic journals findable and accessible has been quite a challenge. The Hekman Library has successfully implemented the SFX link resolver to aid in the management and access of electronic resources, but this solution alone does not sufficiently connect the patron with both print and electronic formats of a resource that the library owns.

The Hekman Library cataloging department adheres to the “two-record approach”, which specifies that equivalent print and electronic formats of a resource, with a few exceptions, are cataloged as separate MARC records. While this approach was adopted for a variety of maintenance and efficiency reasons, it can be confusing for patrons to see two records for essentially the same resource. With this problem in mind, the electronic services team of the Hekman Library has developed several customizations and enhancements to our catalog and SFX services aimed at bringing the patron one step closer to connecting the library’s print and online holdings.

SFXizing the Catalog

With the adoption of SFX into our workflow of e-journal management, our first challenge was to integrate these electronic holdings into our catalog. While SFX helps us to manage our electronic holdings in some aspects, it does not natively provide a way to import its electronic holdings into our catalog. The SFX MarcIt service provides (for a fee) MARC records for SFX electronic journal holdings, but the electronic services team decided to create its own synchronization process between our SFX journal holdings and library catalog. The e-journal “short records” created by the export process look something like this:

```
FORM=SERIAL
.000. |aas 0c
.022. |a0001-9909
.035. |a(Sirsi) sfx8292
.245. 00|aAfrican affairs|h[electronic resource]
.260. |bOxford University Press
.500. 0 |aAvailability: 1944 to current issue
.690. |aSocial Sciences General and Others
.690. |aSocial Sciences Sociology
.690. |aSocial Sciences Developmental Issues & Socioeconomic Studies
.856. 40|3ej:sfx|u954925375840
```

While these short records do not provide the depth of a full marc record, they contain the necessary fields such as title and ISSN to make them easily findable. Other important fields are the 500 field (General Note) displaying electronic availability *across providers*, the 690 (Local Subject) field listing SFX categories, and the 856 field containing the SFX object ID used in our online catalog template to create an appropriate URL to an SFX services menu.

Our sync scripts update our catalog nightly with any changes made to the SFX “knowledge base” earlier that day. With these e-journal short records now in our catalog, a journal title search for a resource available both in print and electronically might look like this:

- | | | |
|----|--|--|
| 1. | African affairs [Print]  PERIODICAL
Royal African Society.
DT1 .R62 | copies: 1 (3RD-FLOOR)
type: PERIODICAL
pubyear: 1944 |
| 2. | African affairs [electronic resource]   EJOURNAL | copies: 1 (WEB-SOURCE)
type: EJOURNAL |

Unfortunately for our catalog, not all search result lists are this simple and it can be easy to locate a resource in one format without knowing if we have it in the other (electronic or print) format.

A Smarter Catalog

Wouldn't it be nice if the print and electronic records were somehow “aware” of each other without additional cataloging? If this were possible, a patron arriving at the print record's detailed view would know for sure if the library owned it electronically and vice versa, and cataloging both print and electronic records would not involve maintaining a relationship between the two formats.

In order to create this dynamic “awareness” between the print and online records, we wrote several Perl scripts that return HTML content given an ISSN parameter. This integrates nicely into our SirsiDynix WebCat online catalog because the template engine provides a *shell script* tag that passes parameters to a script and inserts its output into the page. In the print record detailed view a Perl script runs with the ISSN as a parameter, performs an ISSN search of itemtype EJOURNAL in our catalog, and returns an HTML string (image, text and link to SFX services menu) if the ISSN search yields a corresponding e-journal short record in our catalog. If the print ISSN does not exist, or the ISSN search returns zero results, then the script simply returns an empty string, leaving the template unaffected. An example of this script in action looks something like this:

African affairs [Print]  PERIODICAL
Royal African Society.
[DT1 .R62](#)

 [Electronic Access: 1944 to current issue](#)

ISSN: **0001-9909**

Key title: [African affairs](#)

Title: **African affairs [Print].**

Publication info: **[London, Published for the Royal African Society by the Oxford Univer**

Current frequency: **Quarterly**

Volume/date range: **v. 43- (no. 172-); July 1944-**

Geographic term: [Africa--Periodicals.](#)

Continues in part: [Journal of the Royal African Society \(OCoLC\)4087083 \(DLC\)sf 82006649](#)

Library Owns:

Status: **Not currently received in print**

Holdings Info: 50-105:421 1951-Oct. 2006

Search WebCat for online access to this journal.

Call Numbers	Location	Copy Material
1) DT1 .R62	3rd Floor	1 PERIODICAL

Once the AJAX infrastructure was in place, it was easy to add a similar feature to the electronic short record which linked to the print. This provided two-way linking between the electronic short record and the full print record, ensuring that patrons who arrived at one could easily get to the other.

AJAX Away!

The idea of dynamically inserting related information into search results quickly led us to another idea. Our SFX services menu was configured to link to our catalog regardless of whether the library owned a print copy or the resources, and in many cases clicking the catalog link yielded no results. The goal was to dynamically insert a link to the catalog into the SFX services menu that would only display if the library actually owned the item in print, eliminating confusion. Having already thought out and created the relationship between electronic and print records in our catalog, it was just a matter of putting a few scripts together to make it work. First, I created a simple REST web API that given an ISSN returns an HTML string containing the call number and location of associated print resources. Next, I wrote some JavaScript code for the SFX services menu that accesses the web API using AJAX requests and updates the SFX menu with the output from the API script. Below is an example of the AJAX and web API in action:

The Hekman Library



Source: **African Affairs [0001-9909]**

Online

Full Text

- + Available from 1944 until 1999 via **JSTOR Arts and Sciences 2**
- + Available from 1996 via **Oxford University Press Journals Current**
- + Available from 1993 until 1998 via **GaleGroup Academic OneFile**
- + Available from 2000 until 2003 via **OCLC FirstSearch ECO**

Available in Print: DT1 .R62 (3RD-FLOOR)

Once the AJAX code and web API were written, it was easy to make our e-journal locator work similarly. A few extra lines of JavaScript were required to loop over each resource sending an AJAX request for each one in the list. In the context of the e-journal locator, a “-“ is inserted under the Print Availability indicating that no equivalent print resource is available. Resources without ISSNs are simply ignored by the JavaScript code. See below for an example:

Journal title	ISSN	Print Availability
<u>Africa today</u>	0001-9887	DT1 .A22 (MICROFORM)
<u>Africa: U.S. foreign assistance issues</u>		
<u>African Affairs</u>	0001-9909	DT1 .R62 (3RD-FLOOR)
<u>African American review</u>	1062-4783	P51 .N4 (5TH-FLOOR)
<u>The African archaeological review</u>	0263-0338	-
<u>African arts</u>	0001-9933	N8.A4 A42 (5TH-FLOOR)
<u>African business</u>	0141-3929	-
<u>African development review</u>	1017-6772	-
<u>African Eye News Service</u>		
<u>African geopolitics</u>	1632-3033	-

Caveats

Of course, there are always exceptions to the rule and situations where these “solutions” just don’t work right. The biggest problems currently are incorrect ISSN numbers and title changes which change the publication’s ISSN. These problems may be able to be resolved in the future using an ISSN lookup database, but such a database does not currently exist that we know of. Perhaps the greatest dangers in our current solutions are cases where a resource truly is available in print but the patron is led to believe the opposite when the catalog link in SFX is not there. Equally misleading are situations where the print record does not show an SFX link to its corresponding electronic access,

even though access is available. While the number of exceptions is relatively small compared to the whole, titles with mismatched, incorrect or changed ISSNs can cause the solution not to work for even well-known journal titles with these unfortunate conditions.

Alternatives

While writing this article and researching the topic, we learned that SFX also has developed ways to make the SFX services menu smarter regarding print holdings. The first (and easiest) option is to enhance the library's online catalog target with a *plug-in threshold*. The plug-in threshold can call a script, pass it parameters, and return either true or false. SFX has a Z39.50 plug-in already available to make an online catalog target (getHoldings service) hide or display based upon a Z39.50 holdings query. This option is as easy as enabling it (assuming the catalog supports the proper Z39.50 query) and is the best option for most libraries. The solution we developed, however, is nicer because it provides useful information (call number and location) without an additional click to the library catalog.

A second option that SFX provides to is to load serial print holdings from the library's catalog into the SFX Knowledge Base. Option two takes more work and periodic maintenance, but could potentially offer finer-grained resource presentation than our current solution. In this case, SFX knows not only if the resource exists but also the resources availability if that data were properly imported. One improvement to our solution could be to include availability (holdings) information in the HTML string along with call number and location. Showing or hiding the link to the catalog is what SFX does very well and would be much more difficult to implement over our script's current functionality.