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Case Study: Pepperdine University Libraries’ Migration to OCLC’s WorldShare

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In this case study the authors describe Pepperdine University Libraries’ migration to OCLC’s WorldShare Management Services. They elaborate on the rationale for the decision, review some of the challenges and lessons encountered along the way, and briefly discuss some effects of the new system on our libraries. The focus is on technical services and systems, and examples of issues encountered during migration are accompanied by screenshot illustrations. The article concludes with a wish list of desired features.

KEYWORDS OCLC, WorldCat, discovery layer, discovery service, next-generation catalog, web scale, cloud computing, ILS, WorldShare, Web scale, integrated library system

INTRODUCTION

In early 2010, Pepperdine University Libraries made the potentially risky decision to migrate all of our library data and systems functionality to OCLC’s Webscale Management System (now WorldShare Management Services), a cloud-based system then just beginning development. One of the four initial pilot institutions, Pepperdine went live in December 2010. Our adoption of WorldShare immediately added new interfaces for cataloging, circulation, and acquisitions, soon followed by e-resource management.

System migration had been under consideration for several years. Our Ex Libris Voyager system was showing its age, and it was always difficult to schedule upgrades in our academic calendar. Although not large, Pepperdine Libraries is a complex environment, with multiple branches, overseas locations, and a separate database for the School of Law Library. Like many
academic libraries, we devoted a lot of time to getting many systems to talk to each other, including the integrated library system, the proxy server, the link resolver, the library Web site, and the interlibrary loan system. System migrations are big projects, and we were in a holding pattern, waiting for a breakthrough in technology to justify the effort.

One of the reasons we were enthusiastic about trying out WorldShare Management Services (WMS) was our experience with implementing WorldCat Local a year before. From our patrons’ perspective, we changed overnight from a catalog of several hundred thousand items to one with a quarter of a billion. The result was happy patrons, an increase in circulation, and a near tripling of interlibrary loan volume. The success of WorldCat Local gave us confidence in working with OCLC as a vendor and served as a testament to the power of big data maintained in a collaborative environment.

It would have been easy enough to stop with WorldCat Local, but there were reasons to move ahead. Patrons still had to access Voyager to renew books, see pending orders, and review their account information; library staff had to be familiar with two systems; and there was considerable duplication of labor in cataloging and acquisitions among Voyager, WorldCat, and our PeopleSoft accounting system. We hoped that WorldShare would provide an improved system for our staff as well as our patrons.

On a more strategic level, OCLC’s cloud-based development plans for WMS matched the library’s and the university’s technology goals. The library was already running an array of hosted services: iTunes U, CONTENTdm, ILLiad, and WorldCat Link Manager; the university was running hosted versions of the learning management systems Blackboard and Sakai. With limited technical staff available, the library wanted to get out of the server management business and manage information, not technology.

On a tactical level, the Libraries’ staff were also excited about the features promised by a modern, Web-based system. In addition to the improved user interface, we were looking ahead to a more fully integrated environment and the promise of shared data for vendor management, license management, and usage statistics. If collaboration worked for the catalog records in WorldCat, it was clear that it could work in these areas as well.

**DATA MIGRATION CHALLENGES AND LESSONS**

For Pepperdine, data migration was a two-stage process. When we implemented WorldCat Local in 2009, we began to send our bibliographic records to OCLC using their batch load service (http://www.oclc.org/batchprocessing/default.htm). This service matched Pepperdine’s bibliographic records to OCLC’s records and updated local holdings in WorldCat. OCLC sent back cross-reference files, which contained OCLC numbers and the bibliographic record identification numbers from Pepperdine’s
library system. Using those cross-reference files, we added and updated the OCLC numbers in our bibliographic records. OCLC numbers are the unique key in the WorldCat database. Thus, links were created between the bibliographic records in the legacy Pepperdine Library system and the bibliographic records in WorldCat.

The second stage began when Pepperdine decided to migrate our data to the pilot WMS system. We began to extract our data from our Voyager system for WMS in the summer of 2010. According to the OCLC data requirements, we sent our bibliographic records, patron data, circulation data, and holding records, which include local information such as locations, call numbers, and item barcodes. OCLC’s WMS developer team mapped our data with WMS data. Since Pepperdine University was the first Voyager library to use WMS, we loaded our data several times in order to guarantee the mapping was correct.

A few key decisions helped to streamline the process. Most importantly, we elected not to migrate historical circulation data or acquisitions data. We were well aware that we could end up spending a lot of time trying to perfect the migration of a large amount of imperfect data that we did not require. We planned to run all of the historical reports we needed from Voyager before shutting the system down. During the data migration, we ran into a few interesting and unexpected problems.

First, non-public note fields became public in WorldCat Local. Long ago, staff had added some non-public notes to the item records in the Voyager catalog and circulation modules. For example, Figure 1 shows an 876$z$ field from a Voyager item note field in the Voyager Circulation and Cataloging modules. We were surprised to find that this field appeared as a public note in WorldCat Local, as shown in Figure 2. We had about 300 item records with non-public notes in Voyager. Using a query, we were able find those item records and delete them.

Another issue was the creation of duplicate records created by 876$e$ fields. We used 876$e$ fields in Voyager holding records to identify gifts as the source of acquisition. These were migrated to a separate 876 instead of

![An 876$z$ populated from a Voyager item note field](image)

**FIGURE 1** An 876$z$ populated from a Voyager item note field (Color figure available online).
adding them to the 876 with the barcode. The second 876 field adds one more copy to our holding. For example, the OCLC Connexion site shows we have only one local holding record which has two 876 fields, one of which is the 876$e$ field from Voyager (see Figure 3). The problem created was that WorldCat Local showed the library had two copies (see Figure 4). We had more than 2,000 holding records with 876$e$ fields in Voyager.

A final problem discovered was that ghost holdings were created by suppressed MFHD (MARC Formatting for Holdings Data) records. In Voyager, MFHD local holdings records are attached to bibliographic records.

**FIGURE 3** OCLC Connexion view of local holding record with two 876 fields (Color figure available online).
We could suppress MFHD and bibliographic records separately. Since it was difficult to delete MFHD records in Voyager, we suppressed our MFHD records in Voyager. When we exported our data, we excluded all the suppressed bibliographic records, but we forgot to exclude all the suppressed MFHD records. If a non-suppressed bibliographic record with two MFHD records (one of which was suppressed) was migrated, both MFHD records were added to WMS. We discovered this caused a “ghost holding” problem in WorldCat Local (see Figure 5). After the data migration, we found the suppressed holding record at the Connexion site (see Figure 6). Fortunately, all of these problems were easily corrected in Connexion once we identified
them. Our consolation was that later Voyager libraries would be forewarned, and these problems could be avoided during future migrations.

Because we were part of a pilot implementation group, we had a front-row seat for the development of WorldShare. We made two high-level decisions early on: prioritize features and simplify the Libraries’ policy structure. We had a long list of desired features for the library system of our dreams. OCLC had a long list of features they wanted to implement. Voyager had a long list of features that we were used to seeing. These were not the same lists! If we had waited for them to coincide we would still be waiting. Our implementation team had to make tough decisions about which needs were truly essential before we could go live—and we had to sell the library staff on the merits of a system that was completely new in concept, not just the same old features in a new interface. We also took the opportunity offered by a new system to drastically simplify our policy structure. For example, we went from eighteen patron types to six. We also decided to eliminate late fees, which addressed three issues for us: the system did not yet support advance renewal notices to patrons, we knew that our new circulation rules might have some bugs to be worked out, and we wanted to give something to our patrons to compensate them for any inconvenience they might encounter during the system rollout.

This migration also entailed workflow changes and instigated cultural change. WorldCat Local was a resounding success with our users, but met with resistance from some reference librarians. There is a significant change between crafting carefully targeted Boolean searches of local collections and then exploring outward and performing a very general search of all of WorldCat plus electronic resources, then using faceting and other features to narrow the results down. With circulation, there were some initial hiccups related to the very different way of managing holds. However, many other aspects of circulation were improved. Reserves worked significantly better, training of student workers became simpler, and no one missed printed due date slips. Printed slips were not yet available when we went live, and we still do not use them now that they are.

In technical services, changes were dramatic and continue to evolve. Acquisitions and cataloging have been blended, and little original cataloging
goes on now. All we have to do is specify a shelf location for an item when ordering. Then, when the item is received, that single action adds the barcode, populates the call number field, and updates our holdings in OCLC, creating a local holdings record. We no longer export bibliographic records into a local system, update holdings in WorldCat manually, or edit local records.

Our electronic resources workflow has changed dramatically as well. Before we switched to WMS, our workflow was:

1. Create a location code in Voyager for new electronic collections.
2. Set up a bulk import rule in Voyager administrator module.
3. Download records from vendor site (vendors usually provide .mrc file).
4. Convert the .mrc file to .mrk file.
5. Update 856$u field links and 856$z for OPAC display messages.
6. Convert the .mrk file to .mrc file.
7. Upload records into Voyager.
8. Export the new bibliographic records we just added from Voyager.
9. Send the records to OCLC batch load service to update Pepperdine holdings in WorldCat.

Now we can find most electronic resources in the WorldCat Knowledge Base, where we can select the whole collection or a single title to mark it as owned by us (see Figure 7). Our holdings in WorldCat are then automatically updated on the next day. Figure 8 shows the display for an ebrary e-book.
in WorldCat Local provided by Pepperdine. If WorldCat Knowledge Base does not have the collection, we can ask OCLC to add it or we can create a new collection in Knowledge Base. In addition, PubGet updates our e-serial holdings for us. PubGet uses our logins to access vendors’ sites, gets our holdings data, and sends the data to update our holdings in WorldCat Knowledge Base. We are still ironing out some wrinkles in this process; there are a lot of moving parts, and e-resource problems are sometimes difficult to troubleshoot.

The addition of WorldCat Local had already improved service. Moving to WorldShare reduced our total system costs substantially while making our acquisitions and cataloging workflow markedly more efficient. We no longer have to worry about replacing our aging servers or upgrading software every year or two, and our systems librarian now has more time to work on other projects instead of writing SQL queries to get the reports we needed out of Voyager.

We are looking forward to several additional features, including:

- support for our Central Authentication Service (CAS) single sign-on system;
- custom reporting and notifications;
- full implementation of License Manager to manage our vendor licenses;
- PeopleSoft integration;
- patron-driven acquisitions; and
- increased use of shared data such as serial publishing pattern data and peer institution comparison data.

Of all of these, it is the last one that will be most revolutionary in the long run. We have already transformed the way we acquire and catalog materials; the kind of data sharing that a cloud-based system makes possible will change what we acquire and catalog as well.