

Our experience with WMS has been more positive than we expected — and we expected a lot. Our patrons are happier, and we are saving time and money.

## COMPUTERS in LIBRARIES

# IMPLEMENTING A NEW CLOUD COMPUTING LIBRARY MANAGEMENT SERVICE

## A Symbiotic Approach

By  
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and  
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This is the story of how Pepperdine University migrated its library management functions to the cloud using what is now known as OCLC's WorldShare Management Services (WMS). The story of implementing this new service is told from two vantage points: that of the library and that of the service provider.

Authors Michael Dula and Lynne Jacobsen of Pepperdine University Libraries and Tyler Ferguson and Rob Ross of OCLC were the principle collaborators for this pilot project, which took place between June and December 2010. In this article, the authors outline the stages of adopting and deploying WMS. The process described and the advice

shared, however, apply to the adoption of other systems as well.

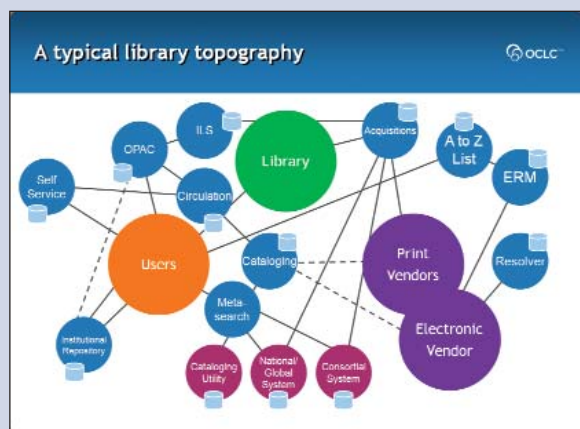
### Background

Pepperdine University is an independent university enrolling approximately 7,700 students in five colleges and schools. Pepperdine has six branch libraries, as well as a number of small libraries at international programs. Michael and Lynne are, respectively, director for digital initiatives and technology strategy and associate university librarian for information resources, collections, and scholarly communication.

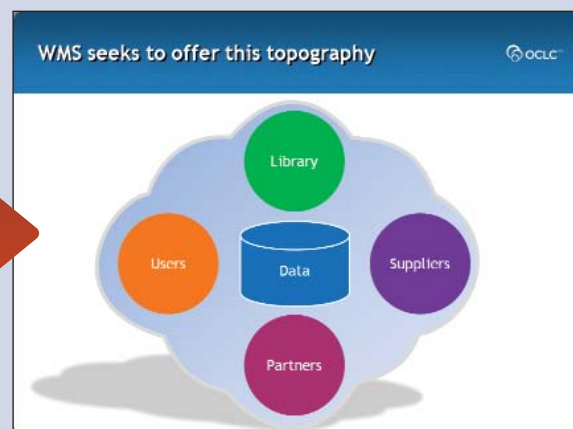
OCLC is a nonprofit, membership, computer library service and research organization

dedicated to the public purposes of furthering access to the world's information and reducing the rate of rise for library costs. OCLC and its member libraries cooperatively produce and maintain WorldCat, the world's largest online database for discovery of library resources. Rob and Tyler are, respectively, director of implementation programs and senior implementation program manager at OCLC.

WMS is the first web-scale, cooperative set of library management services. The aim was to move core services such as circulation, acquisitions, cataloging, and discovery to the network or the cloud. By doing so, the goal was to allow libraries to share hardware, services, and data, as opposed to traditional library management systems



WMS aims to transform a traditional library systems topography such as this ...



... into a web-scale library topography such as this.

that offer individual libraries hosted, but siloed, hardware, software, and data storage. Because WMS is built on a common, open, and extensible software platform, libraries and third-party vendors can create and use applications that extend the utility and efficiency of core library functions. Finally, because WMS offers massively aggregated data, libraries reap benefits from the combined wisdom of their community members.

## Reporting on Our Experience

**PEPPERDINE:** Why WMS? At the outset of what became the WMS project, Pepperdine was running Ex Libris Ltd.'s Voyager as our integrated library system (ILS) on an internally managed Sun server. We were a couple of releases behind and facing the familiar, but always somewhat daunting, prospect of scheduling a system upgrade during the next available holiday break. This would have involved several days of system downtime, the installation of new client software on library computers at every branch location, the reconnection of the discovery interface, and a lot of crossed fingers. We had periodically considered other system options, but none had appeared to us to offer an adequate return on investment for the trouble of migrating. When OCLC approached us with the possibility of joining a pilot program for the development of a new system, we quickly jumped onboard.

There were three main reasons driving our adoption of WMS:

**1. The technology.** We were already moving into outsourced hosting as a library and as a university. Within the OCLC product family, we were already running hosted CONTENTdm for managing digital collections and ILLiad for interlibrary loan without a hitch, and we had successfully rolled out WorldCat Local (WCL) as our discovery platform the year before. We wanted to get out of the server management business. Our goal was to manage information, not technology.

**2. The features.** The WMS feature road map promised greater interoperability with our other systems (ILLiad, WorldCat Link Manager, EZproxy, CONTENTdm, etc.). The improved user interface seemed likely to make more efficient workflows possible for our technical services staff, just as the adoption of WorldCat Local had improved the user experience for our patrons. Further down the road, we were looking forward to an array of social computing features, shared data with vendors and peer institutions, opportunities for third-party integration, and better electronic resource management.

**3. ROL.** The addition of WorldCat Local and ILLiad had already significantly increased circulation and ILL volume and made our patrons happier. Our analysis showed significant cost savings as soon as we switched from our old system to WMS, even without factoring in timesavings as a result of a more efficient staff workflow. As a bonus, we would not need to worry

about replacing our old Sun servers that were nearing their end of lives.



Rob Ross



Tyler Ferguson

## Groundwork for Change

**OCLC:** In working with approximately 35 early adopters of WMS to date, it has become clear that managing the change process is the most underestimated aspect of an implementation. While Pepperdine University Libraries is a model in how to prepare staff for change, some other libraries we've worked with struggle in this area.

The most successful WMS adopters we've worked with share a few common traits:

- They can easily and compellingly articulate their goals for change.
- Library leaders are actively engaged in the implementation process.
- The library's implementation team accepts ownership for the success of the implementation.

It should come as no surprise that these traits match those cited in change management surveys conducted by publications, such as *McKinsey Quarterly*

as the most predictive of success in change initiatives.

In addition to the absence of the positive traits noted earlier, we have observed that our least successful adopters share a couple of attributes:

- They underestimate the groundwork necessary for successful change.
- They fail to set up multiple communication channels between the library's implementation team and the various groups of stakeholders.

Based on our experience working with libraries, we offer some practical tips for preparing to migrate to a new technology platform in the sidebar to the right.



Michael Dula



Lynne Jacobsen



**PEPPERDINE:** Changing to a new system is always a time of excitement and challenge. Having the opportunity to help design a new system was a truly unique situation. Moving our library operations to the cloud took place over many months, so it was fairly gradual. We migrated to WorldCat Local as our discovery interface while still using our old ILS. The resounding success of the new discovery interface gave us the confidence to move ahead with WMS almost a year later. We discussed WMS with staff at both department and all-staff meetings. Staff members heard frequent progress reports and over time learned the nature of this important library project. OCLC staff visited for 2 days about 6 months before we went live. They interviewed various staff members and studied workflows in the areas of acquisitions, cataloging, circulation, resource sharing, collection management, and license management.

As WMS features were announced with projected delivery dates, we were

able to start planning our implementation schedule. We started having conversations about what might change and how we would cope with it. We knew we had to function fully and not lose the ability to provide core services to users, so we carefully considered the options available, potential workarounds, and features we could live without. It was important to understand our current operations fully before being able to decide confidently how to do things differently.

We had documented procedures on a departmental wiki page, which really helped us know who was doing what when. That allowed easier identification of core functions and helped us avoid surprises later.

One of the advantages of moving to a new system is the opportunity to review library policies and make changes. We held a series of committee meetings to review our circulation policies, which were varied and complex. The committee was

## How to Lay the Groundwork for Successful Platform Migration

Based on its experience working with libraries, OCLC offers these practical tips for laying the groundwork for a successful technology implementation,

**Convey to all staff that your migration will be an opportunity to question everything about your current operations.** Industry experts such as Marshall Breeding, the director for innovative technologies and research for Vanderbilt University Libraries, indicate that it is common for libraries to have held on to their legacy systems for about 10 years, in some cases using the same vendor for up to 20 years. Because a systems change happens so infrequently, it is an opportune time for libraries to rethink current policies, processes, and staffing allocation. Think of migration as spring-cleaning: It's an opportunity to take stock, clear out the old, and prepare for what's next.

**Temper the anxiety caused by change.** Reduce this fear by clearly and consistently reminding staff members of where they fit in the future, postmigration organization. So long as staff members can visualize a future in which they have a role and are valued, the anxiety inherent to change will be manageable.

**Complete a stakeholder analysis.** Many libraries don't take the time to complete a stakeholder analysis, which is simply a breakdown of everyone who will be impacted by the upcoming migration, how significantly they will be impacted, and in what ways. These should include library staff, patron groups, campus technology staff, etc. Once completed, this document can help the library executive or the library's implementation team determine how and with whom they ought to spend their time and energy managing change.

**Ensure that staff members are ready to take on new roles.** WMS will create more capacity, freeing staff members to take on new tasks. Sounds great, right? However, be sure that the staff members you plan to move into new roles are equipped to succeed. Just as you wouldn't send a hiker into the woods without food, water, and a compass, you wouldn't send a cataloger to the reference desk without the appropriate training and toolset. The earlier in the change process you can offer training and skill-building opportunities to those impacted by the migration, helping them envision themselves in the new, postmigration world, the more comfortable they will be with the change.

**Match skills and interests to roles as much as possible.** It may sound obvious, but as the distribution of staff changes as a result of implementing a new system, a simple one-to-one redistribution of staff members may not be possible. Take this opportunity to reassess staff skills and interests. Then, put together a plan for the future where staff members are matched to positions where they are most likely to be successful and happy.

**Communicate, communicate, communicate.** Frequently, a library forms an implementation team to manage the local migration activities, which is efficient and logical. However, two-way communication channels between the library's implementation team and other library stakeholders are also necessary. Otherwise, there is a risk that important changes brought about by the upcoming migration will not be communicated effectively to impacted staff members, and/or important considerations and feedback will not be received by the implementation team from these staff members. No one likes to be unnecessarily surprised by a setback at the 11th hour. Better to communicate all relevant information widely, early, and often.



made up of staff members from the main library and several branches. Through discussion of true needs and a commitment to streamlining, we were able to simplify the complexity of the previous system's configuration. We reduced the number of patron groups from 14 to six. We also reduced the number of possible loan periods. We decided to try to provide improved service to faculty and students by lengthening loan periods and eliminating fines. Many changes were unanimously recommended and would be implemented with the new system.

## Breaking Ground



**OCLC:** The most time-consuming, intensive aspect of migrating to a new system is data migration. Most libraries are migrating to WMS after many years of creating data in a system that has its own uniquely defined data elements and data structures. Migrating that data to a new system requires that a library know its data intimately. Libraries go through a process of data analysis before migrating the first byte of information. The analysis seeks to define the following:

1. What data is in the system?
2. Why is it in the system?
3. How is it stored in the system?

These questions apply to all data types: bibliographic, item, patron, and circulation. It is common when working with any software, web application, or tool to create data that meets the specific requirements of the services accessing the data. WMS is no different. Item data in a legacy ILS becomes Local Holdings data in WMS. This conversion transforms a significant amount of data into a format and schema that will be used in a prescribed manner by WMS.

An interesting discovery many libraries make during the process of data analysis is that the data created in their legacy systems was created as it was in an attempt to preserve preexisting workflows or reports from a prior system. In many cases, unquestion-

ingly carrying these workflows into WMS (a system in some cases 20 years removed from those original workflows) can yield ludicrous results. So answering the questions what and why becomes very important. You need to know what is in the system so that it can be identified and accounted for during migration. You need to know why it is in the system so that there is an understanding of the specific workflow or process goal that this data element helps the library achieve. Finally, you need to know how data is stored in the system so that the conversion mapping process yields data that will be usable by the new system.

Because staff members at Pepperdine had implemented WorldCat Local only a year prior to WMS, they were familiar with the process of updating and maintaining holdings (titles owned) in WorldCat. They spent a considerable amount of time sorting through the different data types to optimize their data for migration, identifying data not to be migrated, and working with OCLC to transform the data to be loaded in a way that took full advantage of the WorldCat Local data display options. Where patron data was concerned, Pepperdine sought to minimize the impact to patrons by preserving existing usernames. But data is not all that must be transformed to meet the requirements of a new system. Policies, workflows, and business processes must all be evaluated and adjusted to ensure success in adopting a new system.



**PEPPERDINE:** Because we had already implemented WorldCat Local, some of the data preparation work was done. We had performed a data reclamation project with OCLC to ensure that all of our records were represented in WorldCat and contained properly formatted OCLC accession numbers.

We made a conscious decision to limit data migration issues as much as possible by not attempting to migrate all of our historical circulation data. Only active records would be moved to WMS. Patron data would migrate from Voyager, but the real source for almost

all of our patron data is Pepperdine's enterprise PeopleSoft system. We knew there would be plenty of data cleanup issues, so we wanted to simplify wherever possible. Our old data was far from perfect anyway, so we did not want to agonize about achieving a perfect migration of imperfect data. In the future, a better system will enable us to correct the data more efficiently. For example, some of the data migrated from our previous VTLS system never really migrated correctly to Voyager. We planned to run historical reports from our old system, such as weeding reports, before shutting it down.

We migrated samples of our data first, including bibliographic records, holdings records, item records, patron records, and circulation transactions, but not acquisitions data. OCLC was able to extract the data it needed to build Local Holdings Records (LHRs). During this time, OCLC also created a new instance of WorldCat Local that pointed to these LHRs. This allowed us to test WMS using our own data and report on the results. Staff members learned how to be thorough testers by being specific in reporting exactly what they were doing, what they experienced in the correct sequence, and what error messages appeared. The library implementation team had weekly 1-hour phone conferences with OCLC to discuss issues and findings. We also exchanged daily email messages with our OCLC team and each other. OCLC was very quick to answer our questions, validate reported issues, resolve problems, and forward issues to the development team when necessary.

## Initial Inspection



**OCLC:** A library's initial inspection of a new system is a watershed moment in the implementation process because it is the first opportunity for the library to see its own data with its own policies applied. It is at this moment that a library can be pleasantly surprised or greatly disappointed in the result of its implementation efforts. Adding to the drama of this unveiling is the fact that libraries

often face daunting time constraints. It may be that support for or access to their legacy systems is ending, a new semester or fiscal year is about to begin, or (and this is surprisingly common in our experience) the legacy ILS server is literally going to crash within a few weeks.

To forestall some of the hysteria this unveiling can cause, several implementation steps are completed far in advance:

- Agree upon minimal acceptance criteria for launch.
- Familiarize library staff with WMS through training.
- Carefully review the WMS road map to understand future functionality.

These steps help establish familiarity with the service in a safe, nonproduction environment, as well as ensure agreement on what is going to be delivered. While considerable effort and time is spent identifying critical functionality early in the implementation process, no system will be perfect from the moment of its inception. The successful library manages this evaluation period by diligently walking through their workflows, noting the following:


- Those things that represent a change from the previous system or process
- Those things that can be improved (e.g., enhancements)
- Those things that meet the minimum required functionality
- Any workarounds needed to accomplish goals until more eloquent solutions are delivered

This evaluation process should yield a prioritized list of critical and noncritical problems and enhancement requests, as well as identify any significant changes to library workflows or processes. This list should be shared with the service provider and with

Module	Issue Description	Notes	Priority	Confirmed Fix Date
38	Unable to request a journal issue. When we create a hold request, we can only request all the journal issues. The pull list gives us the item barcode. But we cannot find the issue in WMS if we search for the barcode.	Periodicals are not an unreasonable for hold. Would be nice to have "Request Article" button instead that return article request to IL list or other workflow.	Low	
41	Patrons			
42	Can we use our Pepperdine login in WMS? WMS will need to add two fields: user name and password. Can we get user name and password from Pepperdine?	Need to work out details with OCLC, Pepperdine and CAS. We can get username (NetID) from Pepperdine, but not password. Password will have to be handled by CAS. For interim, a customizable login screen will help a lot.	High	September
43	Need to assign patrons	For later phase, would like to support an "expired" flag from Pepperdine for people who have left the university (and not recently changed status). CUY Dec 10: we need to be able to see patron status and expiration date. Address needs to be able to manually expire patrons, especially those not part of Pepperdine list. Other university new patrons, who should be able to enter expiration term.	Important	
44	If I created a patron record unsuccessfully or didn't follow the correct workflow to create a patron (if an old patron record cannot save it as a new record), WMS shows barcode exists, but cannot find it when I search for the barcode.	Test further: Patron primary and temp phones should appear. WMS only shows one phone field.	Needed	Test
45	Need second phone number in WMS		Low	
46	Patrons cannot select/browse all items at one time in their WCL WMS account.		Low	
47	Can we get the pickup location under "Discover items"?	Can get patron who requested hold, but not pickup location.	Low	
48	Need to be able to delete patrons	Future enhancement	Low	
49	Start manually deleted patrons.		Low	
50				
51				
52	Interface			
53	e book records for library and possibly other vendors must be updated to work. Working: some library records, HathiTrust, CNIS, Oxford Reference Online, AGUS.	OCLC can provide the master record BSE links with your repository url. Library Accounts: Complete is selected in WCLM. Other e book vendors include: Alexander Street Press, Science Music Online, CUY. See my Nov. 22 email. 12/10 KB now fixed to properly present records. Downloading issues in some bad records from vendor. (ISBN # in wrong place from vendor. OCLC will clean up).	High	No firm date yet

Screen shot from implementation spreadsheet (which ran to more than 175 rows)

library stakeholders. Communication between the library implementation team and the service provider is important, but communication between the library team and library stakeholders not immediately involved in the implementation process is equally important.

 **PEPPERDINE:** As pilot adopters of a system under development, one of our critical decision points was when to go live, or launch, WMS. We had a pretty good idea of the product road map, and we knew that a lot of features that we wanted might not be available for several months. But we also did not want to delay implementation and lose the momentum we had built up. We had to look very carefully at our needs to make a determination of when the "ready threshold" had been crossed. It would have been all too easy to fall into an indefinite holding pattern, waiting for the next desirable feature before implementing.

To keep track of all of these areas of testing and development, we started a spreadsheet that documented all issues. The library implementation team and the OCLC team had access to this spreadsheet via Google Docs. The issues were categorized by area, such as acquisitions, circulation, and interface design. The highest priority issues (features we couldn't live without) were highlighted in red. The issues that were

of next highest importance were highlighted in yellow. All of the remaining issues were left in white. All issues had a column to document the status and expected resolution date. When an issue was resolved, it was noted.

Much discussion by our four-person implementation team led to discussions about how to prioritize these functions. We knew we could live without receipt printers because they didn't currently work well with our old system. We knew we could live without batch label printing by bar code because we could have more labeling done by vendors or by hand. So we proceeded to answer every concern with a game plan. For many priority items, we documented workarounds that we could live with until they could be addressed in WMS. The important thing was to be disciplined about the distinction between "essential" and "highly desirable." We made hard decisions about what we absolutely had to have and kept the number of high-priority items to a bare minimum. Just because our old system had Feature X didn't mean we had to have Feature X to go live.

Our go-live date was postponed until we had what we felt were core functions. For example, course reserves and access to ebooks were the two highest priorities. While OCLC worked on these issues, we completed configuring our new, streamlined circulation

policies, library branches, and shelf locations. OCLC sent trainers to campus who provided hands-on training and suggested workflows. Cataloging staff learned about the structure of LHRs. They also started looking at how our data was displayed in WCL. For example, we noticed that circulation notes that were nonpublic in the old system were now displaying in WCL. We were unaware that these notes even existed and decided they were no longer needed and could be deleted. There were a few other small pockets of data to clean up. Circulation staff practiced checking out, checking in, and working with holds. Acquisitions staff started creating purchase orders and receiving items. Thus, we began testing the system fully. OCLC presented a first-phase rollout of the reserves system that used WCL lists. It worked beautifully. Significant progress was made with linking to ebooks, so we set our go-live date for mid-December after finals week.

## Moving In

**OCLC:** Excitement and a flurry of activities surround a go-live date. For the WMS implementation team at OCLC, this activity centered on support. We agreed early in the implementation that meeting once a week, combined with email communication, would provide the right number of opportunities to touch base, answer questions, or address emerging issues. After the major issues were identified, Pepperdine entered a period of discovery with the new system and set about making WMS its own before going live. This discovery period generally involved the library asking three key questions: Where is it? Where did we put it? How do we do it? The vendor needs to respond accordingly with hand-holding, help, and documentation.

**PEPPERDINE:** We created an implementation schedule for WMS that outlined what had to happen when. Together we went over each step. As a result of our discussion, staff members filled in the names of those responsible for each step and kept the to-do list chart



Project timeline

## To-Do: 8-Day WMS Implementation Schedule at Pepperdine

Dec. 10–12	Dec. 13–16	Dec. 17
Pull data by 8 a.m.	Enter funds into WMS subtracting Voyager encumbrances	Disable Voyager circ (not law school)
No item entry Dec. 10–12	Create new purchase orders in WMS	Turn on WMS WorldCat Local
Use Voyager for all circulation	Receive on both systems depending on where the purchase order was created	Use WMS for all circulation
Run daily Voyager reports for transactions and holds	Catalog in both systems	Create new purchase orders in WMS
Do not create purchase orders	Continue to load bib records into Voyager	Receive in both systems depending on where the purchase order was created
Do not receive items	Stop loading order records into Voyager	Catalog in WMS/Connexion only
Print out bib records for items to be received on Monday	Stop loading EDI invoices into Voyager	Stop loading bib records into Voyager
Print out bib records for items to be cataloged on Monday	Use Voyager for creating labels	Stop PromptCat service (keep YBP Library Services for spine label processing)
Manually type labels to process items	Use Voyager for serials check-in	Type labels manually
Postpone serials check-in until Monday	Use Voyager for all circulation	Use Voyager for serials check-in
	Run daily Voyager circ reports	Enter remaining Voyager circ transactions
	Enter circ transactions and holds into WMS (not reserves)	Run remaining Voyager transaction reports
	Check in returned items in both systems	

next to their desks. This exercise helped us go live without a problem.

We also used whiteboards to review and discuss issues that required staff action. For example, we examined and made decisions on how to handle call number and volume entry in WMS in the interim before the serials processing widget was released. This way staff had a say in what happened and understood what the issues were, and everyone

left the meeting knowing what was expected.

We discovered after a week or so that our configuration needed adjusting, as some material types were not checking out for the appropriate loan period. OCLC initially had a problem with synchronizing some of the material types between WorldCat Local and WMS. This meant we had to add extra lines to the circulation loan map to



accommodate these variations from the norm. But overall, our implementation was very successful.

### What Changed?

**OCCLC:** The combined efforts and shared experiences of Pepperdine University Libraries’ staff and the OCLC implementation team uncovered many opportunities for incremental changes to aspects of WMS or Pepperdine’s own policies or procedures. The structure of the OCLC/Pepperdine collaboration during implementation allowed for constant feedback between both implementation teams. Opportunities for improvement were identified, communicated, and formalized around some basic aspects of implementation.

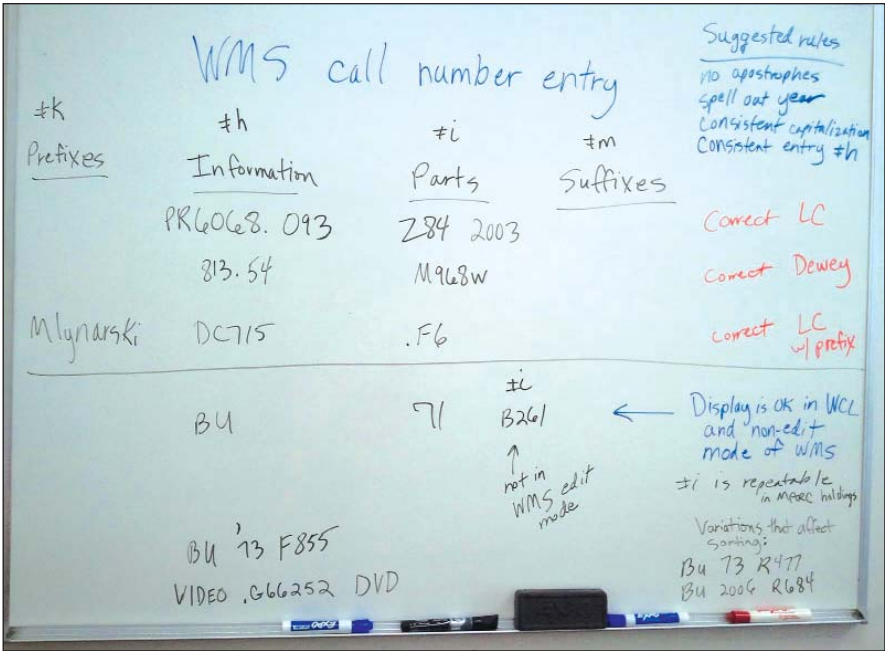
Pepperdine focused its critique on workflows, messaging, policies and procedures, and bibliographic instruction. OCLC focused its response on workflow optimization, documentation, communication, and training methodology.

**PEPPERDINE:** Many technical services functions changed as a result of implementing WMS.

We no longer create brief local records for items on reserve. All items are fully cataloged in Connexion whether they are laptops, markers, or a personal copy of a book.

Holds and course reserves are now handled differently in WMS. We now allow the placement of holds for items that are on the shelf, which our users find to be a wonderful service. Circulation workers use the real-time pull list in WMS to identify items on hold, pull items from the shelf, and then check in items to determine where to route them. This process automatically initiates an email to patrons notifying them that their held item is ready for pickup.

Our workflow for course reserves changed significantly since circulation workers now create searchable World-Cat Local lists to identify items on reserve, entering metadata such as course name, course number, and professor name. This process is not only easier for staff, but users experience improved online access to reserve items.



Pepperdine staff used whiteboards for mapping out issues, such as how best to enter call numbers uniformly in the new system.

### How WMS Changed Library Protocol

Before	After
Batch load bibliographic records into a local system	No longer load bibliographic records into a local system
Maintain authority records locally and in OCLC	Only maintain authority records in OCLC
Log in to each module separately	Log in once for all functions
Use only on computers with the client software loaded	Use WMS from any computer with an internet connection
Receive and bar code in acquisitions and cataloging, respectively	Receive and bar code at the same time in acquisitions
Maintain holdings in local system and OCLC	Maintain holdings in OCLC only. LHRs are automatically created during receiving
Type call number into Voyager item record	Call number from bibliographic record automatically populates during receiving
Batch load vendor ebook bibliographic records into OCLC and local system	Maintain ebook subscription information in knowledgebase
Change item status to In Process	Check out items to In Process patron
Load vendor order records and automatically create purchase orders	Will be implemented soon
Batch load invoices through EDI	Planned, but not scheduled yet
Batch print spine labels	Manually type spine labels/use vendor processing/use OCLC label program

Additionally, staff developed a LibGuide that provides a welcome overview of items on reserve. This application works well in the cloud, connecting users from the reserves LibGuide

directly to the reserve items in World-Cat Local.

As we have changed, so has WMS. With quarterly updates, we have a new set of features to anticipate every few



The aim was to move core services such as circulation, acquisitions, cataloging, and discovery to the network or the cloud. By doing so, the goal was to allow libraries to share hardware, services, and data.

months. We are looking forward to improved reporting, customizable notices to patrons, and a host of other features that have long been on our wish list. We also look forward to tighter integration between WMS and our other systems, such as ILLiad, PeopleSoft, and our Central Authentication Service (CAS) single sign-on system. The open nature of the WMS system makes such integration possible.

### If We Were to Do It All Again

**PEPPERDINE:** We are seeing timesavings in many areas, and we anticipate more as WMS development progresses. We have also experienced unexpected changes. For example, in the past we unpacked books and sorted them on carts by type of order (firm, approval, and collection development project). However, since we no longer export WorldCat bibliographic records to our local system—WorldCat *is* our local system—and now have one vendor processing items, we no longer need to sort books in this way. Re-evaluating processes has become a way of life for staff members, not just something we do periodically. We will continue to think about the best way to accomplish tasks, up to and including whether it's necessary to do a task at all.

Our anticipated financial savings have already started to kick in, and we expect further improvements as continued workflow enhancements are

available. Happily, our patrons have hardly been aware of any change at all, since they were already used to WorldCat Local as our discovery interface.

As far as lessons learned, it's important to provide more training for staff. WMS itself changed from the training period to the time we actually went live. The 2-month gap also meant that some staff members forgot specific procedures. It's challenging to provide up-to-date training for all branch staff. What worked for us was being positive and enthusiastic, communicating well, addressing issues promptly, and celebrating often.

**OCLC:** After any implementation, both the service provider and the customer are likely to ask themselves what they would have done differently if they knew at the outset what they know now. From OCLC's perspective, the answer is "quite a lot." Because the Pepperdine implementation was one of the first OCLC staff handled, we erred on the side of caution and managed their migration using a traditional, high-touch, one-on-one implementation model.

However, even before Pepperdine's implementation was completed, it was obvious that a traditional implementation model did not match the transformative nature of WMS itself. Many of the questions posed during the implementation process by Pepperdine and

our other earliest adopters were best answered not by OCLC staff members, but by other librarians adopting WMS. Questions, such as how to extract data from legacy library systems or how best to translate circulation policies from those systems to WMS, were ones the WMS community was best-suited to answer. Also, our earliest adopters found the one-on-one model to be isolating. A budding WMS community existed, but the structure of the implementation program prevented them from engaging with that community.

The OCLC implementation team quickly changed its approach for implementing WMS from a traditional one-on-one model to a cohort model. We define a cohort as a group of like-minded libraries engaging in a shared experience (e.g., implementing WMS). The cohort model borrows from an academic model where active learners attend formal virtual class sessions with fellow learners. By working through the implementation curriculum together, learners benefit not only from the OCLC instructor, but from each other. This peer learning aspect of the cohort implementation model has been nothing short of extraordinary.

To highlight one example, a small group of libraries migrating from the SirsiDynix Symphony ILS system formed a task force that had a mission to work together to determine how best to extract serials data in a format that




could be consumed by OCLC's existing data load tools. Not only were they successful, but they volunteered to document their process for future WMS adopters facing the same difficulty. Examples such as this highlight how the cohort implementation model can unleash the power of cooperating libraries.

In addition to practical problem-solving, the cohort model builds community among adopting WMS libraries. To help foster this, we have developed a community hub called the User Support Center where WMS community members can turn in their homework assignments, chat with classmates or OCLC staff, read documentation, watch tutorials or recorded class sessions, start a discussion thread, submit ideas for new features, etc. This community is led by three WMS Community chairs, two of whom are our co-authors, Michael and Lynne.


Finally, as Pepperdine and other early adopters helped reveal, determining the ideal time to deliver WMS training in the overall implementation program is a tricky bit of business. If you offer training too late in the process, the library doesn't have adequate time to practice with WMS or adjust its workflows. If you offer training too early, many of the system's nuances will be forgotten by the time the library goes live. Rather than pick a poison, we decided to offer training to adopting WMS libraries on a "bus schedule." We offer training on all of the WMS modules on a regular schedule so that adopting WMS librarians can attend as early or late in the process as they please. What's more, they can repeat sessions as often as they like, and, when new staff members join the library, they can attend these training sessions to learn WMS.

## Conclusions


 **OCLC:** We are thrilled by the success of Pepperdine and other early adopters of WMS. It takes a special combination of attributes to be a successful early adopter:

- An innovative spirit
- An openness to change
- The willingness to question everything about current processes
- Patience
- Creativity
- The desire to help "raise" a new system
- The ability to maintain a calm and constructive outlook when faced with challenges or setbacks

Librarians who exhibit these traits are nearly always successful in adopting a new service. To their credit, the staff at Pepperdine University exhibited all of these traits. Pepperdine reminded us that *how* an organization reacts to challenges is a much stronger predictor of success than the nature of the challenges themselves. In many cases, Pepperdine and OCLC staff worked together to think of creative solutions to immediate problems. This willingness to solve problems cooperatively, rather than take sides, increased the level of mutual trust, helping us realize a successful outcome.

 **PEPPERDINE:** Our experience with WMS has been more positive than we expected—and we expected a lot. The implementation of WorldCat Local increased our circulation and tripled our ILL volume almost overnight. Our patrons are happier, and we are saving time and money. That is a fundamental mission success that cannot be overemphasized. It is all too easy to talk about the difficulty of change management, resistance to major change, and the human tendency to notice any new problems that come with a new system, while forgetting all of the old problems that have gone away. It is important to keep coming back to that bottom line and to communicate it.

We held a party to send off the old system and shut down the server.

Perhaps the best thing we can say is that we are already focused on the next challenges. WMS has already started to do what a successful system should do—fade into the background—but with the anticipation of a continuous parade of new features. Was this really the final data migration? We hope so, because we have a lot of more important things to do than migrate data. 

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