Summer 8-31-2015

Migration to Alma/Primo: A Case Study of Central Washington University

Ping Fu
Central Washington University, pingfu@cwu.edu

Julie Carmen
Central Washington University, jcarmen@cwu.edu

Recommended Citation

Migration to Alma/Primo: A Case Study of Central Washington University

Ping Fu
Central Washington University
U.S.A.
pingfu@cwu.edu

Julie Carmen
Central Washington University
U.S.A.
jcarmen@cwu.edu

ABSTRACT: This paper describes how Central Washington University Libraries (CWUL) interacted and collaborated with the Orbis Cascade Alliance (OCA) Shared Integrated Library System's (SILS) Implementation Team and Ex Libris to process systems and data migration from Innovative Interfaces Inc.'s Millennium integrated library system to Alma/Primo, Ex Libris' next-generation library management solution and discovery and delivery solution. A chronological review method was used for this case study to provide an overall picture of key migration events, tasks, and implementation efforts, including pre-migration cleanup, migration forms, integration with external systems, testing, cutover, post-migration cleanup, and reporting and fixing outstanding issues. A three-phase migration model was studied, and a questionnaire was designed to collect data from functional leads to determine staff time spent on the migration tasks. Staff time spent on each phase was analyzed and quantitated, with some top essential elements for the success of the migration identified through the case review and data analysis. An analysis of the Ex Libris' Salesforce cases created during the migration and post-migration was conducted to be used for identifying roles of key librarians and staff functional leads during the migration.

I. Introduction

Today, many academic libraries are moving from traditional integrated library systems (ILS) to the next-generation ILS (Breeding, 2012). For a medium-sized academic library system like Central Washington University Libraries (CWUL), a member of the Orbis Cascade Alliance (OCA), the prospect of migrating to a new system was determined by the consortium. The OCA is a nonprofit consortium of 37 colleges and universities in Oregon, Washington, and Idaho. One of the Alliance's visions is to enhance collaborative technical services and cooperative collection development among 37 member institutions (Cornish, Jost, & Arch, 2013). In July 2012, the Alliance decided to select Ex Libris' Alma library management system and Primo discovery service for all Alliance libraries (Cornish, Jost, & Arch, 2013). Before the migration, all Alliance libraries, including CWUL, were using the Millennium system from Innovative Interfaces Inc.,

except for one library using an open-source system called Evergreen and another one using the Voyager system from Ex Libris. The migration of the 37 libraries was split into four cohorts (Drake & Cornish, 2014). CWUL was in the fourth cohort, the migration of which started in July 2014. The information about this process can be found at the Orbis Cascade Alliance website https://www.orbiscascade.org.

CWUL is a medium-sized academic library with forty-one librarians and staff. At the beginning of the migration, the Millennium ILS contained:

- 893,354 bibliographic records
- 946,818 items records
- 254,033 authority records
- 1,094 check in records
- 20,247 patron records
- 709 vendors records
- 6,608 invoices records
- 8,887 order records
- 107 course records
- 86 license records
- 28 contact records

The electronic resources were managed by ProQuest's Serials Solutions 360. There were about 130 databases and 30,000 e-journal titles. More information about CWUL can be found at the libraries' website http://www.lib.cwu.edu/.

This paper describes how CWUL interacted and collaborated with the OCA SILS Implementation Team and Ex Libris to process systems and data migration from Millennium to Alma/Primo. A chorological review method was used in this case study to provide an overall picture of key migration events, tasks, and implementation efforts. The key events and tasks such as pre-migration cleanup, migration forms, integration with external systems, testing, cutover, post-migration cleanup, and reporting and fixing outstanding issues are reviewed one by one. A questionnaire was designed to collect data from functional leads to determine staff time spent on the migration tasks. An analysis of the Ex Libris' Salesforce cases created during the migration and post-migration was conducted to identify roles of key librarians and staff functional leads during the migration. And a three-phase migration model was applied. Staff time spent on each phase was analyzed and quantitated. Some top essential elements for the success of the migration are also identified through the case review and data analysis.

II. Literature Review

Many studies have been published on ILS migration. However, only a few of them focus on the next-generation ILS migration.

In light of these studies, Julich, Hirst, and Thompson (2003) described a traditional ILS migration at the University of Iowa. Their study focused on a number of areas of the Aleph 500

ILS migration, including system selection, implementation project structure, project management and tracking, hardware, vendor relations, public relations, data conversion, systems administration, functional testing, functional problems, training, local programming, staff client, switch to production, batch/reports, news releases/software changes, and postscripts. Compared to the next-generation ILS migration, the traditional ILS migration is a more complex and time-consuming process. They also analyze and quantitated staff efforts during the selection process and implementation.

Cervone (2007) discussed some issues in ILS migrations. First of all, a migration is a time-consuming and generally thankless task. Many libraries are moving to the next-generation ILS ass it not only replaces the library management back-end system but also improves greatly the front-end user interface. Besides, the selection of an ILS vendor is very important in the early stages of the migration. His study elaborated three major phases of a migration, i.e., systems selection, implementation, and production stabilization. He emphasized that establishing functional working groups early in the project is critical for the success of the project overall.

Cornish, Jost, and Arch (2013) described the factors that lead OCA to move to the shared library management system of Alma/Primo, describing the steps of the new system selection, including the work of several research and planning groups and a formal Request for Information process. The Alliance Council's decision to move to a shared ILS is to support the Alliance's vision "for the shared library management system, including collaborative technical services and cooperative collection development" (p16).

Fu and Fitzgerald (2013) focused their study on the impact of the next-generation ILS on staffing at medium-sized academic libraries. Moving to the next-generation ILS may impact the staffing model due to the new architecture and functionality of the next-generation ILS. The next-generation ILS allows library staff to work with more modules, play multiple roles, and back up one another. In particular, paraprofessional staff could play more critical roles in library technical services and daily operations. In other words, the next-generation ILS might bring changes to traditional staffing models. For instance, systems staff will spend less time in hardware and software maintenance and backup. Instead, they will spend more time in local applications development and communication with vendors. It is important that libraries provide staff more opportunities and training to help them better adapt to the changes brought about by the next-generation ILS.

Fu (2014) studied the changing roles of systems librarians and found that they served as a primary leader and a project manager in the ILS migration. Compared with a traditional ILS, systems librarians in the next-generation ILS have less technical operation to manage but concentrate more on the collaborating with library departments and other units on campus, maintaining a good working relationship with ILS vendors on software upgrades, fixing and reporting issues, troubleshooting, and providing staff training.

Singh (2014) showed that the case study method has become widely used in many disciplines, including library science. The case study method is particularly useful in describing the process of an ILS migration, as it focuses on individual incidents in the real world and concentrates on a single unit of an organization.

Vaughan and Costello (2011) observed that shared systems managed by a more formalized, official consortium have become a trend for libraries. Their study focused on how a consortium shared an ILS and managed their system regarding cost sharing, support, and rights and responsibilities. In addition, they stressed the importance to formalize the coordination role of systems librarians in their capacity as the chief manager of ILS.

III. Scope and Methodology

The case study method is used in this study to make a detailed analysis of the ILS migration at CWUL with a view to fully understanding the migration and deriving more general theoretical statements from regularities observed. The instruments used to gather data include direct observation, participant observation, emails, Alliance website, Library website, Library wiki, Library shared drives, surveys, meeting minutes, internal documents, and Ex Libris Salesforce cases.

The participants' observation was primarily chosen for data gathering in this case study because one of the observers fully led the project while another observer participated in the system migration. A chronological review of the key events and tasks was chosen for analyzing the data generated during the migration. Through this chronological review and analysis, a three-phase migration model was identified as follows:

- Phase One, defined as the pre-migration cleanup and preparation phase, started on July 1, 2013 and ended on June 30, 2014.

- Phase Two, defined as the migration, testing, and training phase, started on July 1, 2014 and ended on November 18, 2014.

- Phase Three, defined as the cutover, post-migration cleanup, and reporting and fixing outstanding issues phase, started on Dec 19, 2014 and ended on May 30, 2015.

Since CWUL started its pre-migration cleanup and preparation one year in advance, the entire migration process lasted almost two years.

In addition to the chronological review, a survey was designed to collect information and data from functional leads regarding staff time spent on each phase during the ILS migration. Six specific questions were specifically designed for this survey.

Furthermore, 185 Ex Libris Salesforce cases created by CWUL during the migration and post migration were analyzed. The results of the analysis were used for measuring outstanding issues which occurred in each functional area and for assessing the roles of the project manager and functional leads.

The selection of the vendor and ILS was usually a part of an ILS migration (Wang, 2009). However, since the selection decision was made at the consortial level, it was excluded in this case study.

IV. Migration Phases

Phase One: Pre-migration Cleanup and Preparation

The meeting minutes of the CWUL Shared Integrated Library System's (SILS) Implementation Team show that Phase One started on July 1, 2013 and ended on July 30, 2014. During Phase One, several key tasks and events were reviewed. The first major task was to build a well-organized team. The team was officially named as the CWUL SILS Implementation Team on July 1, 2013 by the Dean of the Libraries. As the project manager of the ILS migration, the systems librarian convened the first team meeting. The members of the team consisted of representatives from each department, including both department heads and functional leads. The University Information Technology (IT) also had its representative on the team. The charge of the team, the roles of the project manager, and the roles of team members were widely discussed and briefly defined. The communication mechanisms were discussed and a documentation center was created by the project manager after the first meeting. The Library wiki was chosen to collect information and store resources from OCA SILS Implementation Team, Alliance working groups, peer institutions, vendors, and institutions outside the Alliance. The internal documents created by the CWUL SILS Implementation Team were stored in the institution's shared drive. Sub-teams and taskforces were formed at the first meeting. The CWUL SILS Implementation Team decided to meet monthly during Phase One and weekly during both Phase Two and Phase Three.

The pre-migration cleanup was identified as the first priority task for the Team. CWUL started using Millennium ILS in the late 90s. Over time, thousands of brief bibliographic records were created through various cataloging projects. Since all libraries at OCA would move to one shared platform, data cleanup to remove those brief bib records was mandatory for all libraries. The Alliance SILS Cataloging Working Group developed a set of rules and detailed step-by-step cleanup task guidelines to help libraries in the bibliographic records cleanup. Some other Alliance working groups such as SILS Acquisitions Working Group, SILS Fulfillment Working Group, and SILS Serials/ERM Working Group also had recommended cleanup lists and guidelines for the consortial libraries. The CWUL SILS Implementation Team decided to start data cleanup in July 2013 and planned to complete the cleanup within one year. The functional leads were assigned to lead the data cleanup in their functional areas.

Collecting information and resources was the second major task for the team. This job was primarily done by the systems librarian. The sources of relevant information included the OCA SILS Documentation Center, OCA website, SILS Alma/Primo Training Materials website, Ex Libris' Customer Center, Ex Libris' Learning Center, ELUNA Conference Document, and Ex Libris' Developer Network. The access paths and credentials were provided by the owners of the resources.

It was a stressful time for all librarians and staff when OCA decided to move to Ex Libris' Alma/Primo. The best way to help reduce stress and address concerns was to provide training. Fortunately, CWUL was in the last migration or fourth cohort. Ex Libris and the previous cohorts had developed a number of training webinars and workshops, which were extremely

helpful. Those online training Webinars were accessible for members on the SILS Alma/Primo Training Materials website. In addition, Ex Libris' Learning Center provided Alma and Primo users with a number of training webinars. The CWUL SILS Implementation Team organized a series of general training sessions for library staff, such as III-Alma Glossary and General Alma Architecture. Those activities greatly helped reduce staff's stress and concerns.

In addition, the CWUL SILS Implementation Team organized a one-day trip to the nearest peer institution, Eastern Washington University (EWU), for direct training. All department heads and functional leads participated. EWU was in the second migration cohort and their system was already live at that time. EWU librarians and functional leads shared their migration process, documents, experiences, and lessons. By observing a live Alma/Primo system in person, CWUL librarians and staff built more confidence in the ILS migration process.

Other tasks were considered by the CWUL SILS Implementation Team during Phase One, including Alma Migration Form, Alma Field Mapping Form, Alma Configuration Form, and Link Resolver to Alma Activations Form. Those forms and guidelines were available at the Ex Libris' Documentation Center. Sample forms, guides, and the completed forms by previous cohorts were also available at the OCA Documentation Center. With those resources, all CWUL departments and functional leads were able to start the work with those forms. Ex Libris also provided an online review session for Cohort 4 libraries in mid-June 2014 to help libraries better understand those forms.

Phase Two: Migration, Testing, and Training

The timeframe was set by the OCA SILS Implementation Team and Ex Libris. Phase Two started on Jul 1, 2014 and ended on November 30, 2014. A kickoff meeting for the last migration cohort was held on July 8, 2014 in Portland, Oregon. Sixty-five staff from the ten Cohort 4 institutions attended the meeting. During the meeting, Ex Libris' project manager proposed the go-live dates for Cohort 4, ranging from November 17, 2014 to January 8, 2015. Five migration groups were formed based on those go-live dates. CWU was in Group 4 together with three other institutions for a targeted go-live date on December 18, 2014.

As shown in Table 1, several key tasks and events for Cohort 4/Group 4 during Phase Two were identified.

Table 1. Cohort 4 Key Events and Tasks

#	Key Events and Tasks	Timeline
1	Cohort 4 kickoff meeting	July 7, 2014
2	Alma Migration Form review	June 11, 2014
3	Alma Configuration Form review	July 23, 2014
4	Sample data and full data extraction	July 30, 2014
5	Alma certification training	Sept 3-5, 2014
6	Alma functional workshop	Sept 9-12, 2014
7	Alma functional call series: integration for imports, exports, and processes in Acquisitions, Resource management, and Fulfillment	Oct 10-24,2014

| 8 | Primo functional call series: work orders and status; workflows for managing digital materials; circulation notices; ILL; advanced ordering, receiving, and invoicing; managing fiscal period close | Nov 7-21, 2014 |
| 9 | Primo certification training | Jan 14-16, 2015 |

Data source: email from Ex Libris OCA SILS Project Manager on July 17, 2014

As shown in Table 2, a summary of Cohort 4 deliverables was determined.

Table 2. A Summary of Cohort 4 Deliverables

#	Key Deliverables	Timeline
1	Primo configuration form completed and delivered to Ex Libris	Fri Aug 1, 2014
2	Primo configuration work	Week of Sept. 15, 2014
3	Primo and Alma authentication information submitted per institution	Aug 22, 2014
4	Patron xml status	Completed by Nov 17, 2014
5	Secure file transfer protocol (SFTP) setup status	Completed by Nov 17, 2014
6	Detailed cutover plan distributed	As soon as possible
7	Go-live checklists filled out and returned to Ex Libris 2-3 days prior to audit call	Completed by Nov 17, 2014

Data source: email from Ex Libris OCA SILS Project Manager on July 17, 2014

Among tasks and events listed above, completing Alma forms or assigned processes was a critical path to other tasks of Phase Two. Since CWUL functional leads were already familiar with the form requirements in Phase One, with the help of Ex Libris, they completed the Alma Migration Form, Alma Field Mapping Form, Alma Configuration Form, and Link Resolver Form on time and delivered them to Ex Libris. Upon received those forms, Ex Libris began to set up a test database for Cohort 4 libraries. Those tasks required project management, team work, and collaboration.

Staff training was another critical path to the rest tasks of Phase Two. In early September of 2014, Ex Libris provided the Cohort 4 libraries with an onsite Alma certification training. The systems librarian and another staff from Systems, the Cataloging Functional Lead, and the Circulation Functional Lead received the training. The Cataloging Functional Lead was primarily responsible for the administration of Resource Management (Ex Libris' terminology for cataloging). The Circulation Functional Lead was primarily responsible for the administration of Fulfillment and Resource Sharing (Ex Libris' terminology for circulation and consortial borrowing and lending). The systems librarian and staff were responsible for Acquisitions and Alma general administration. All Functional Leads also attended the OCA Alma Functional Workshop from September 9 to 12, 2014.

Another key task was the Alma integration with external systems. In order to facilitate the data exchange between Alma and external systems, a Secure File Transfer Protocol (SFTP) server

was setup by the University IT. The task included setting up integration profiles in Alma and developing local applications for the following services and data exchange:

- Bursar transfer
- EZproxy
- Electronic data interchange (EDI)/Invoices export
- Online Computer Library Center (OCLC) Connexion
- Authentication to CWU Shibboleth
- Patron load
- Z39.50

The testing officially started on September 15, 2014 after functional leads received the Alma certificate training and functional workshops. A three-month timeframe was given for the testing. Functional leads and their sub-teams were responsible for their areas. Ex Libris had testing guides. However, the CWUL SILS Implementation Team also adopted additional testing documents and forms created by other institutions. During the testing, Ex Libris' Salesforce cases were created for tracking and troubleshooting outstanding issues. Ex Libris also had a go-live readiness checklist for the CWUL SILS Implementation Team to fill out after the testing.

Phase Three: Cutover, Post Migration Cleanup, and Reporting and Fixing Outstanding Issues

The cutover, a process of switching to Alma/Primo production from Millennium, was split into ten major tasks, as shown in Table 3, and took about one month.

Table 3. A Sample Cutover Milestone Chart

#	Milestone Description (CWU)	Target date/s	Status/Note
1	Sample data and files received	11/19	Completed
2	Full data received; Technical freeze begins	12/3	Completed
3	Copy Primo configuration from C4 Implementation (IMPL) to Production (PROD)	12/8	Completed
4	Alma data delivered on IMPL environment for internal EX LIBRIS checks	12/11	Completed
5	Complete data migration activities	12/12	Not Started
6	PROD data delivered, customer testing begins	12/12	Not Started
7	Data acceptance received	At or before 12/16	Not Started
8	Data published to Primo, Primo data available on Primo production	At or before 12/16	Dependency on #7
9	Fulfillment freeze begins; all fulfillment data received	12/17	Not Started
10	Go-live with Primo and Alma	12/18	Not Started

Data source: email from Ex Libris OCA SILS Project Manager on December 11, 2014

The cutover started with sample data extraction and the delivery of files. One thing worth mentioning is that all configuration data were retained from the Alma test environment. Once Ex Libris received the final forms and full data, they required a few days to do clean up in Alma.

Then Ex Libris loaded full data into Alma. The records loaded into Alma were shown in Table 4. Almost all these records were successfully loaded into Alma. Some records were rejected but were reloaded into Alma after issues were fixed. As shown in Table 4, the Cataloging Department cleaned up 62,362 bibliographic records and 93 item records. The Circulation Department cleaned up 356 patron records. Since the Acquisitions Department did regular cleanup for orders in Millennium, the number of cleanups were not able to be reflected from Table 4. The course reserve records were manually created in Alma by the Circulation staff.

Table 4. The Records Migrated to Alma

Records Type	No. of Records Loaded into Alma	No. Records in Millennium	Records Cleanup
Bibliographic records (MARC)	829,510	891,872	62,362
Suppressed bibs	1,482	1,482	
Items	946,725	946,818	93
MARC holding records	N/A	N/A	N/A
Check-in (non-MARC holdings)	1,094	1,094	
Patrons	19,894	20,250	356
Loans	4,840	4,840	
Requests	Not Migrated	Not Migrated	Not Migrated
Vendors remaining from testing database		709	
Funds	79	79	
Open orders	8,887	8,887	
Orders payment	8,887	8,887	
Courses	Not Migrated	107 Manually created	
Physical to electronic processing	113,988	113,988	
Electronic resources 130 databases, 30,000 e-journal titles from Serials Solutions 360	Migrated from link resolver form into Alma		

Data source: CWUL SILS Implementation Team's shared drive

CWUL went live as scheduled on Dec 18, 2014. The major tasks after go-live were post migration cleanup and reporting and fixing outstanding issues. Table 5 shows that as of May 30, 2015, a total of 185 Salesforce cases were created for post migration cleanup and reporting and fixing outstanding issues.

Table 5. Ex Libris Salesforce Cases Created during the Migration and Post-Migration

Role	No. of Cases	Issue Type	Percentage
Systems Librarian	12	General issues	6.49%
Systems Librarian	16	Alma general issues	8.65%
Systems Librarian	32	Primo general issues	17.30%

Systems Librarian	19	Electronic resources issues	10.27%
Systems Librarian	8	Acquisition issues	4.32%
Electronic Resource Management Librarian	27	Electronic resources issues	14.60%
Cataloging Lead (Paraprofessional)	23	Cataloging issues	12.45%
Circulation Lead (Paraprofessional)	23	Circulation and resource sharing issues	12.45%
Acquisitions Lead (Paraprofessional)	21	Acquisitions issues	11.35%
Systems Programmer (IT Specialist)	3	Systems Integration issues	1.62%
Serials Lead (Paraprofessional)	1	Serials Acquisition	0.50%
Total	**185**		**100%**

Data sources: Ex Libris Salesforce cases created by CWUL as of May 30, 2014

As shown in Table 5, the systems librarian created a total of 87 cases, covering general, Alma, Primo, Electronic Resources, and Acquisitions issues, accounting for 47% of all cases. The electronic resource management librarian created about 15% issues. Interestingly, the number of cases created by functional leads from the Cataloging, Circulation and Acquisitions was very close. The results show that the systems librarian played a critical role in the migration. The results also show that functional leads who are paraprofessionals can also play a leading role in Technical Services. The results support Fu's findings (2014) that the systems librarian serves as the project manager and the main contact to the vendors and that the responsibilities and roles of the systems librarian are shifting from concentrating on systems administration when managing a traditional ILS to focusing on collaboration and project management when managing a next-generation ILS. The results also support Fu and Fitzgerald's findings (2013) on staffing models that paraprofessionals can play more important roles in library technical services and daily operations when libraries use the next-generation ILS, particularly in an environment of small and medium-sized libraries.

The top outstanding issue of the migration was electronic resources. These cases created by both the systems librarian and the electronic resource management librarian accounted for approximately 25% of all cases. The second outstanding issue was from the Primo account, which represented 17.30% of all cases. The third top issue concerned Acquisitions, with cases created by both the systems librarian and the acquisition functional lead, showing a 15.67% of all cases. The top forth issue was for Cataloging and Circulation, accounting for 12.45% of all cases respectively.

V. Staff Efforts

In order to determine staff time spent on migration phases, a questionnaire was designed by the authors and sent out to the functional leads after the migration. Eight functional leads responded. Table 6 shows that in the pre-migration preparation phase from July 1 2013 to June 30, 2014, the functional leads spent approximately an average of 4 hours per week on pre-migration cleanup and preparation, accounting for 10% of their work time. In the testing phase from July 1 2014 to November 30, 2014, the functional leads spent approximately an average of 4 hours per week on

testing and an average of 16 hours per week on training, accounting for 10% and 40% of their work time respectively. In the cutover process in Phase Three, from December 1, 2014 to December 18, 2015, staff spent 25% of their time per week. Since CWUL started its migration preparation one year in advance, key staff spent only four hours per week on data cleanup so that pre-migration preparation tasks did not have significant impact on daily operations. In the testing phase, staff spent significant time on testing and training, approximately 50% of their time per week.

Table 6. Staff Time Spent on Each Phases

Phases	Length (months)	Hours Per Week	Percentage Per Week
Phase One	12	4	10%
Phase Two	5	20	50%
Cutover only of Phase Three	1	10	25%

Data source: a questionnaire survey designed by the authors

VI. Findings of the Case Study

Finding 1. Through the chronological review and analysis, a three-phase migration model with key events and tasks is generalized as follows.

1. Pre-Migration Preparation Phase (one year)
   - Teams and task forces
   - Resources
   - Documentation center
   - Data cleanup
   - Migration form
   - Field mapping form preparation
   - Configuration form preparation
   - Link resolver form preparation

2. Testing Phase (five months)
   - Sample data and full data extraction
   - Migration form for testing
   - Filed mapping form for testing
   - Configuration form for testing
   - Link resolver form for testing
   - Test database set up
   - Administrators and functional leads training
   - Integration with external systems
     - SFTP setup
     - Patron Load
     - EDI/Invoice Exports
     - Bursar Fee
   - Testing guides and additional testing documents

11

- Testing, and fixing issues

3. Cutover, Go-live and Post-migration Phase(one month)
   - Cutover schedule
   - Sample data extraction
   - Final migration form
   - Final field mapping form
   - Configuration form remains unchanged
   - Final link resolver form
   - Final data extraction
   - Final testing
   - Go-live
   - Post-migration cleanup
   - Reporting and Fixing Outstanding issues
   - On-going maintenance
   - Staff training

This finding supports the findings of Cervone (2007) that ILS migration is a time-consuming process and generally involves three phases.

Finding 2. A pattern of staff time/effort for each phase was identified, analyzed, and quantitated. Phase One, with a one year timeframe, showed 10% staff time/effort was needed. Correspondingly, if the timeframe is half a year, then 20% staff time will be needed. If the timeframe is three months, 40% staff time will be needed. Phase Two, with a five-month timeframe, showed 50% staff time/effort was needed. Lastly, for cutover with a one month timeframe, 25% staff time effort was needed.

Finding 3. About 60% of the issues were created by librarians, particularly by the systems librarian and the electronic resource management librarian. About 40% of all issues were created by functional leads who were paraprofessionals.

Finding 4. The top 5 outstanding issues are identified as related to Electronic Resources, Primo, Acquisitions, Cataloging, and Circulation.

Finding 5. Most events and tasks were completed by team work across departments, including university IT and other units on campus. The success of this project shows that the combined guidance, assistance, collaboration, team work, and project management from both the Alliance and Ex Libris were essential to the completion of these tasks.

VII. Conclusion

The key events and tasks in the Central Washington University Libraries' ILS migration were reviewed and analyzed. There were three phases in the migration. A pattern of staff time spent on each phase was identified with a survey. This pattern shows that staff spent 50% of their work load in testing and training. Ex Libris Salesforce cases created during the migration and post

migration were analyzed. It is found that the systems librarian and the electronic resource librarian played a leading role in reporting and fixing outstanding issues. Meanwhile, functional leads, who are paraprofessionals, also played a leading role in Technical Services. In addition, project management, communication, team work, and collaboration were top essential elements contributed to the success of the ILS migration.

Hopefully, this case study will provide some useful information and insights for the medium-sized academic libraries planning to migrate to Alma/Primo.

References

Breeding, M. (2012.) Current and future trends in information technologies for information units. *El Profesional de la Información, 21*(1), 9-15.

Central Washington University Libraries. (2015). *Central Washington University Libraries website*. Retrieved from http://www.lib.cwu.edu/

Cervone, F. (2007). ILS migration in the 21st century: Some new things to think about this time around. *Computers in Libraries*, *27*(7), 6-62.

Cornish, A.; Jost, R.; & Arch, X. (2013). Selecting a shared 21st century management system. *Collaborative Librarianship, 5*(1), 16-28. Retrieved from http://collaborativelibrarianship.org/index.php/jocl/article/download/232/180

Drake, M.; & Cornish, A. (2014). *Migrating to a shared ILS using Alma and Primo* [PowerPoint Slides]. Retrieved from http://documents.el-una.org/1214/

Fu, P.; & Fitzgerald, M. (2013). A comparative analysis of the effect of the integrated library system on staffing models in academic libraries. *Information Technology & Libraries*, *32*(3), 47-58.

Fu, P. (2014). Supporting the next-generation ILS: The changing roles of systems librarians. *Journal of Library Innovation*, *5*(1), 30-42.

Julich, S.; Hirst, D.; & Thompson, B. (2003). A case study of ILS migration: Aleph500 at the University of Iowa. *Library Hi Tech Journal*, *21*(1), 44-55.

Orbis Cascade Alliance. (2015). *Orbis Cascade Alliance website*. Retrieved from https://www.orbiscascade.org/

Singh, Vandana. (2014). A case study of migration to an open source ILS: Partnership among state libraries. *Qualitative and Quantitative Methods in Libraries (QQML) Special Issue Social Justice, Social Inclusion*, 59-68.

Vaughan, J.; & Costello, K. (2011). Management and support of shared integrated library systems. *Information Technology & Libraries*, *30*(2), 62-70.

Wang, Z. (2009). Integrated library system (ILS) challenges and opportunities: A survey of U.S. academic libraries with migration projects. *Journal of Academic Librarianship*, *35*(3), 207-220.

Authors:
Ping Fu is Associate Professor and Head of Technology Services in the Brooks Library at Central Washington University. Email: pingfu@cwu.edu

Julie Carmen is Assistant Professor and Cataloging and Digital Initiatives Librarian in the Brooks Library at Central Washington University. Email: jcarmen@cwu.edu

Correspondence concerning this article should be addressed to Ping Fu, Brooks Library, Central Washington University, 400 E. University Way, Ellensburg, WA 98926. Email: pingfu@cwu.edu