

## Voyager to ALMA - Space to Soul Process for Discovery Systems Adaptation to Changing Search Environments

**Stephen Marvin**

FH Green Library, West Chester University, West Chester, PA, USA  
smarvin@wcupa.edu



Copyright © 2017 by Stephen Marvin and Kerry Walton. This work is made available under the terms of the Creative Commons Attribution 4.0 International License:

<http://creativecommons.org/licenses/by/4.0>

---

### Abstract:

*A rigorous itinerary for selection, acquisition, metadata management, digitization and fulfillment for the full spectrum of materials regardless of format does not mention training and orientation programs. Teachable moments exist while the IT workflows promise new analytics; values to institutional outcomes; and tying text and data sets beyond traditional content.*

*“...why people continually shell out money for new cellphones with small, mostly cosmetic changes (he refers to this as “treadmilling techno-dissatisfaction”), arguing that contemporary society suffers from “neomania” (“the love of the modern for its own sake”). “We are moving into the far more uneven distribution of 99/1 across many things that used to be 80/20: 99 percent of Internet traffic is attributable to less than 1 percent of sites, 99 percent of book sales come from less than 1 percent of authors ... and I need to stop because numbers are emotionally stirring.”*

***Kakutani, Michiko (December 2012) ‘Antifragile,’  
by Nassim Nicholas Taleb***

**Keywords:** ALMA, Primo, Voyager, ExLibris, Libraries

---

My concern and the reason why I proposed speaking at this prestigious satellite meeting between IT and Reference services was the lack of attention about training. ALMA installation steps were scheduled ultimately providing reports and connectivity to Primo. At the onset, training was not really attended to. Requirements to participate in webinars and complete certification were established mainly for the technical and IT aspects of ALMA. The reference librarians need to prepare themselves on their own for the outcomes to Primo and how Primo will complete its access to the general public. There problems emerged with links to non-existent e-books, including e-reference and e-collections. There were also connectivity problems for Interlibrary lending service links and corresponding electronic links. ALMA would help with training a group who will then develop whatever is needed to train others. It has not and probably will not happen. So, during this period of time, training

materials will be sought and obtained, with permission from videos, Guide on the Side, LibGuides, and other ProQuest sources. Services used to 'text a call number' were discontinued due to the incompatible connections and new fees in order to implement the installation. To be fair, we are still in the implementation phase and the service has only been officially released on May 7, 2017.

My first digital experience was with an acoustic coupler, 300 baud rate, with a dot matrix printer = Rocking in 1976! From then on, I was hooked with reference services, finding answers using digital media with early advances of LexisNexis overcoming the bastion for searching case law over Westlaw. Not until 2016 was I finally convinced the reference collection, even with most current updates to popular titles, was obsolete and began to acquire electronic versions or select titles from electronic publisher packages. A Pew Research study (Perrin, 2016) recently shared results indicating the preference is still for print over electronic books. Credo, Paratext, and other individual publishers such as Oxford, Sage and Wiley provided searchable text mining tools of their publications. A merger will be coming to improve text mining as advances in Google Books show ease to find more specific information within content of titles. Data mining and text mining is the conversation of many current programs.

Since the mid 1970's, databases continued to evolve. Philadelphia was a hub of services recalling the recent passing in February of Eugene Garfield who started the Institute for Scientific Information and cited references, BIOSIS, and others. Students today graduate knowing they can search Google or ask Alexa, Apple's voice activated service for anything from the cosine of six to today's weather in your town, plus the day's event, news, music, riddles, corny jokes and haikus. With all the advancement in technology, one would anticipate an upgrade would enhance access, not make it more difficult to find, but also whether or not an item is actually available at all!

My world today with digital reference services has also changed. Reference services help others with their original new thoughts, subjects, courses, concepts, technology, forms of communication, travel and discovery. People share soul inspiring cultural expressions, treasured intellectual property, and mundane inventory using increasing varieties of information tools. Digital access, exponentially growing and remixing, introduces content in new forms for consideration, entertainment and scholarship. Of particular interest is the increasing accessibility provided by institutions to theses and dissertations.

As Reference Coordinator, at West Chester University, requests for information are referred to the most likely tool(s) which will answer the question. At West Chester University emphasis is teaching to prepare students to become teachers. We are a teaching library not a research library. Consequently, our collections satisfy the courses offered or proposed for the near future. Unfortunately, students, upon graduation, no longer have access to these library resources. We answer questions from area businesses and the general community. West Chester University's libraries are part of a consortium of 14 universities. Databases are obtained by the consortium for the entire system, allowing individual members to select and purchase their own. Selection of databases takes time and is assigned to a committee to collect, compare, price and prioritize which database to obtain. Features, advantages, benefits and service (FABS) are explored by relevant faculty who recommend new services either for courses, accreditation, or for their current research. Access is moving from EZproxy to Shibboleth. The consortium selected Notis, then Voyager, and now the services of ALMA and Primo.

Ex Libris started as an internal project at the Hebrew University of Jerusalem in 1980 to develop a new library management system, as no system at the time was able to handle Hebrew and Latin character sets as required by the University. The software was called Automated Library Expandable Program (ALEPH). ALMA, started in 2012, is now in 829 libraries. Application program interface (API) is a set of routines, protocols, and tools for building software applications. API's are capable of producing new innovations and include source codes. ALMA does not include the source codes but does provide APIs with an impressive 479 million requests, 51% of total transactions actually exceeding those performed via their own user interface. Fees for service will become an increasing trend, rather than purchases of software. (Breeding, 2017)

Other consortia have shared their experience with migrating from Voyager to ALMA. Montana's merger took two years, starting unofficially in the past five years Montana only recently created a consortium for the libraries named TRAILS. The impact of the transition to ALMA at West Chester University did not consider the need to reorganize positions. Montana several faculty library reference positions were repurposed – digital archives, Digital initiative librarian for scholarly communications, Web librarian, e-Learning and Instructional Technology librarian, User Experience librarian, IT/Web developers including user interface changes and a Data Services librarian. A service manager librarian and scholarly committee were assigned.. Existing positions have retained their old names, but the functions have changed accordingly, based on the workflows of the new system (Zhang, 2017).

Montana noted with the changes in technology, there were frequent service management challenges. The Assessment Librarian, in response to user needs/input from a variety of tools, developed recommended action plans to forward to the library management team. (Zhang, 2017).

Assessment Tools used in Montana TRAILS consortium: tools.

**Mansfield Library Recommendations In Process**

**LAST UPDATED July 7, 2017**

**Recommendations included in the table are from the following documents:**

11. Whiteboard Project Spring 2016
10. Focus Group Spring 2016
9. Whiteboard Project Fall 2015
8. Focus Group Spring 2015
7. LibQUAL 2015
6. Journey Mapping Summer 2015
5. Catalog Study 2014
4. Marketing Management Proposal Spring 2014
3. Associated Students of the University of Montana Feedback Fall 2012
2. Student Advisory Committee Summary Report Spring 2012
1. LibQUAL 2010

For more information, visit: <http://guides.lib.montana.edu/TRAILS>

From the experience of Orbis Cascade consortium, the system is not only heavy with library jargon but also European library jargon terms. Foreign terms had to be reinterpreted, e.g. “fulfillment,” a common term perhaps in Europe, not in the U.S. where libraries more commonly use “lending.” We shared a number of concerns expressed in a recent article by the Orbis Cascade consortium. (Romaine and Wang, 2017).

ALMA provides the use of one system instead of many “increasingly expensive and difficult to maintain” systems to manage electronic resources. There was great interest among libraries in pushing some management of electronic resources either to the consortia level or sharing the work among member libraries, as a large number of electronic resources were now being negotiated, licensed, and purchased centrally (Romaine and Wang, 2017).

New ERM features were continuously being added and upgraded with access to older training videos or assistants who were not accurately describing the most recent procedures. The then beta nature of the product for the Orbis Cascade consortium meant it was difficult for staff, when troubleshooting issues, to know whether the problems were on the Ex Libris side or at the customer’s end due to a lack of understanding of the system changes. The ALMA documentation supplied by Ex Libris was not always complete, nor did it account for every possible situation. Library staff often needed to work with Ex Libris to improve, clarify, and update the documentation. The accelerated migration schedule meant staff were not able to grasp the full scope of the basic structure and design of ALMA prior to going live in the system. (Romaine and Wang, 2017). In our experience at West Chester University with implementation, the consultants assigned were frustrated dealing with the reality of such things as Spring Break.

One of ALMA’s strong points is the way electronic resource management is distributed throughout ALMA, rather than siloed into a single module. Staff can order and/or activate titles directly from various Zones. The Community Zone can have bibliographic records immediately appear in the Network Zone and electronic inventory in the Institutional Zone. Electronic resources are automatically pushed to the Electronic Resource Activation Task List whenever an order record is created, but may also be manually pushed to the Task List, reflecting the reality that electronic resources need support and tracking throughout their life cycle. In the Task List, the operator can designate the ability to set up a consortia-wide PDA/DDA program and to centrally manage and load electronic collections and packages. (Romaine and Wang, 2017)

Local inventory and availability information is sent through real-time calls back and forth between ALMA and Primo. Additionally, institutions may profile collections in the Primo Central Index (PCI), an index covering hundreds of millions of journal articles, electronic books, and other materials from a wide range of information providers. Primo displays PCI content in search results and links users directly to the article content. (Romaine and Wang, 2017) The shift to Primo has been a step back for those who used to find local and global resources simultaneously. Staff in ALMA institutions who order book titles in GOBI Library Solutions from EBSCO (formerly YBP Library Services) interface have the option to have a YBP API create an order record in ALMA when a title is selected. (Romaine and Wang, 2017)

ALMA is a huge improvement over the fragmented resource management model, combining LMS, ERM, knowledgebase, link resolver, analytics, and A–Z journals search all in a single unified platform. But that is not always the way the faculty, students and general public want

to find information. ~~Accustomed to~~ Searching the library catalog, even though it contained more than just book titles, helped them encounter items serendipitously within a set of content. ~~Granted~~ Primo can set limits to these parameters, but new habits need to be promoted.

Also, ALMA employs cloud computing. Patron records are now in a cloud server and some may not be comfortable with the safety of a cloud. Cloud service takes over from server, meaning the feature to text a call number needs to be purchased when, before, this type of added benefit was free. Can we link again to the Google Book version of a title found in the library's catalog?

Some of the information is proprietary to the Ex Libris ALMA Primo system.

## **Objective**

Realistically, implementation with consortia for the ALMA Primo system should extend to two years. Not all members of a consortium share the same size and available skill sets required to accomplish, comfortably, all the requisites within a calendar year, let alone a nine month academic year. Include teaching, training, and research goals in the implementation of a discovery service. Whether only virtually, reference services need to be included in recognizing libraries' present and future needs, and in collaboration with diverse global partners with the ALMA next generation library management service to consolidate, optimize and extend the range of library services.

Since the first implementations of ALMA, the training program for ALMA has evolved from live Web-based delivery of training sessions by trainers around the world to recorded training content covering all functional areas of ALMA. There basically is no training on the use of Primo since it is suppose to be more intuitive. Numerous training recordings focusing on use of and management of Primo are available. Regarding Primo system administration, there is a lot of recorded training content available via link to the web site [http://knowledge.exlibrisgroup.com/Primo/Training/Primo\\_Administration](http://knowledge.exlibrisgroup.com/Primo/Training/Primo_Administration). The Primo Certification exam is not yet in place.

## **Method/Approach**

Implementation Committee for ALMA Timeline

ALMA / Primo History

February 2016 our consortium initiated the Voyager data clean-up to migrate to ALMA- each guide is from 300 – 600 pages. ALMA is the technical guide, Primo is the public access side.

ALMA

ALMA Acquisitions Guide-20151206

ALMA Analytics Guide-20151206

ALMA Resource Management Guide-20151206

ALMA Sandbox Environments-20151206

ALMA-Administration-Guide-20151206

ALMA-Fulfillment-Guide-20151206

ALMA-Integrations-External-Systems-20151206

## ALMA-Primo Integration Guide-20151206 – only 47 pages

### Primo

- Bibliographic records in the institution for Primo search
- Physical and electronic inventory in the institution for Primo search
- Electronic inventory in the institution for Primo Central search

### Recommendation for inclusive training with ALMA/Primo installation:

The Ex Libris ALMA, as the next-generation library management solution, supports for the entire suite of library operations—selection, acquisition, metadata management, digitization, and fulfillment—for the full spectrum of library materials, regardless of format or location. But, the technical aspects cannot completely satisfy ultimate service needs without some thought for developing training, orientation and FAQ's for librarians and community who will be using the new ALMA platform for course instruction, research and review.

Recognize the importance of teachable moments and orientation needs in order to:

- Consolidate: unify the disparate systems today's libraries manage for electronic, digital, and print resources.
- Optimize: optimize workflows through shared data and collaborative services as well as a cloud-based infrastructure
- Extend: re-direct resources to focus on extending library services within and outside their institutions in direct support of teaching and research goals. The Unified Resource Management (URM) Vision touts to not only improve systems, but to support totally new services and initiatives

The lines of authority were top heavy for the installation and implementation phases for ALMA, but not so much for the Primo front end training.

1. Project Manager—Maintain overall project plan, including schedule, scope management, risks and issues. Monitor and report on project status and identify/manage issues. Coordinate involvement of Ex Libris resources. Communicate as outlined in the communication plan and update former procedures with current informative instructions.
2. Implementation Consultant—Analyze requirements and map to configuration and functionality. Perform configuration activities. Deliver consulting services and implementation assistance as required to meet all project deliverables. There were presentations which resulted in greater confusion than clarification.
3. Data Migration Consultant-- Perform data migration from customer source products to ALMA.
4. Training Consultant—Deliver Training Services

### **Findings and limitations/implications**

The IT and technical groups met, attended presentations, studied multiple documents, interacted with webinars, and took competency examinations requiring passage or they could not participate in the implementation phases. The schedule was dictated and met with rigorous deadlines. Technical training omitted more inclusive training and consultative opportunities with stakeholders in the institution. Numerous training recordings are available and are listed in the list of websites concluding this paper. Montana's consortium, TRAILS, wisely took two years to implement the ALMA Primo system. Trying to install and make ALMA fully operational in less time requires double the work effort of assigned employees

who may not meet the rigor of competencies required for certification. It is not impossible to meet installation and competency requirements, but it is better for the operation to master skill requirements and fully understand implications of the impact some installations will make on former services.

#### Unified resource management

ALMA needs to also support requisites for training and use within the proposed suite of library operations for print, electronic, and digital resources.

#### Collaborative Metadata Management

ALMA brings new opportunities with high quality, shared metadata into the resource management environment in a unique, hybrid model but needs to add instruction, orientation, training and practice toward balancing global sharing with local needs specialized needs. The desire for academic libraries is to have the ability to manage complex, multi-format collections. Detail searches in individual databases will continue but the default service offer in reference will be a discovery service, not the library catalog. Discussions with library management systems/integrated library services have not focused on the anticipated tools in reference for text and data mining capabilities. Reference services increasingly need to respond to other institutional priorities such as research data, digital humanities and other collaborative efforts with faculty and students such as dissertations. Training is needed, particularly for such programs as First Year Courses, E-Portfolios, Capstone Courses, and Pathway certificates. Reference services, finding themselves in the feudal ages of fiefdoms and silos, recognize traditional services must expand to more fertile grounds to embrace some of the new wave of technological innovations. (Breeding, 2017)

#### Smart Fulfillment

ALMA claims to provide fulfillment services to users in terms easy to understand. Ironic the term fulfillment services is more commonly used by the term circulation and is only one of the 'terms easy to understand' creating confusion with training. Adding, as needed orientation and training, while using unified workflows and analytics capabilities will help facilitate and optimize fulfillment workflows

#### Optimized resources and data

ALMA simplified library workflows will make it easy for those providing information services related to the unique automated business processes and shared data. However, the discussion for text and data mining are absent.

#### Cloud-based service

The consortium should facilitate with training offered with the cloud service to increase the return on investment and reduce the total cost of ownership of the library's infrastructure, and to provide access to shared data and services. ALMA allows others to meet requests for accreditation review, statistics, assessments, projections and evidence from prior years to maximize collection development budget with selection, acquisitions, and evaluation processes informed by usage information, cost per use, and the holdings of peer collections.

Yet, cloud-based services will take away from former dedicated servers to provide other added value functions such as text-a-call number.

#### Intelligent collection development

ALMA allows others to meet requests for accreditation review, statistics, assessments, projections and evidence from prior years to maximize collection development budget with selection, acquisitions, and evaluation processes informed by usage information, cost per use, and the holdings of peer collections.

#### Ex Libris open platform

Using web-based, open interfaces, ALMA can be integrated seamlessly with other systems including external campus systems, and libraries can develop adapters and plug-ins to meet their institutions' unique needs.

We need to go beyond what is given to what can be done and how to train others. Participate in the ELUNA conferences. Propose to create an ambassador or ombudsmen between providers and those representing user communities.

#### Significance/Impact of project

The impact will not fully be determined until the implementation phase is completed with a revised release date of May 7, 2017. My plan was to include early observations of the impact since the timing is arranged prior to the end of the academic semester. My principle objection was the way training was ignored for reference services as well as announcements for the community. Change, and change management must be handled with more inclusivity to help promote the new system internally at an institutional level rather than to a select group of technically oriented professionals. Omitting the participation of groups who are ultimate stakeholders to the new service will create reluctant followers. Followers had no opportunity to participate or contribute special knowledge.

Reference services need to be included in recognizing libraries' present and future needs, and in collaboration with diverse global partners with the ALMA next generation library management service to consolidate, optimize and extend the range of library services.

ALMA and the wider URM framework deliver improved analytics tying the value of the library and its services more closely to important institutional outcomes; expansion of metadata management and curation beyond traditional content to include research data sets; and support for joint collection development models allowing libraries to truly collaborate and thereby maximize the investment in their collections. Beyond the URM, ALMA also needs to also support requisites for training and use within the proposed suite of library operations for print, electronic, and digital resources.

The current discovery to delivery process is incoherent, particularly to patrons, with individual products each handling one piece of the process. The flow of information between them is disjointed. Patrons must submit requests item by item, rather than as a group, set of results selected from a completed search, or from a bibliography. Staff processing of requests remains labor intensive as each request is processed individually using several discovery layers or tools exposed within the ILL management system. The ability to automatically route



requests, for which no staff review is required, remains underdeveloped and stunted. (Barton, et al 2016)

Half of the Big Ten Academic Alliance (BTAA) libraries use ALMA/Primo as their interface, and it is likely more will move to ALMA in the coming years.

Recommended questions and actions for installation of ALMA/Primo by BTAA

- Primo has a new user interface under development and the look and feel is very clean and modern. Now would be a good time to suggest improvements in how delivery options are presented to users and to explore innovations in pop-ups and expanding and collapsing choices for users.
- Press Ex Libris on the need for full NISO Circulation Interchange Protocol (NCIP) capabilities and interoperability with external ILL systems.
- Ensure BTAA representation on Product Working Groups at ELUNA and participation in the ALMA Enhancement Process. (Barton, et al 2016)

Lyrasis, the largest consortium in the United States is making commitments by its mission to increase its impact on our communities. The central questions Lyrasis will be working on together are:

- How can libraries, archives and museums drive change and innovation in and across our respective communities?
- How can we ensure our organizations continue to deliver the knowledge and services our communities and constituents need in a changing environment?
- How can libraries, archives and museums future proof and become anti-fragile?

Primo normalization rules are tailored to address the additional headings enrichment fields to align with requirements. See the Configuring the Normalization Rules ([https://knowledge.exlibrisgroup.com/Primo/Product\\_Documentation/Technical\\_Guide/010The\\_PNX\\_Record/150The\\_Browse\\_Section/040Configuring\\_the\\_Normalization\\_Rules](https://knowledge.exlibrisgroup.com/Primo/Product_Documentation/Technical_Guide/010The_PNX_Record/150The_Browse_Section/040Configuring_the_Normalization_Rules)) section in the Primo documentation for more information. This documentation first explains the browse section and then explains the rules per template including the ALMA MARC Template. Also note that:

In general, the rules need to be updated in the following ways:

The Browse section updated so Browse headings including cross-references can be created.

- A number of rules (detailed in the Primo documentation) have to be updated to prevent nonpreferred terms from being used in display, facets, dedup, and sort.
- Configuring the Primo Front End for an ALMA Data Source
- The Views Wizard in the Primo Back Office defines the information that displays to end users in the Primo Front End. Primo views do not require specific configuration to support an ALMA data source, but they must be connected to the ALMA institution in Primo (see Configuring the Primo Institution). For details on how to create a Primo view, see Primo Views. ([https://knowledge.exlibrisgroup.com/Primo/Product\\_Documentation/Back\\_Office\\_Guide/060Configuring\\_Primo's\\_Front\\_End/020Views\\_Wizard](https://knowledge.exlibrisgroup.com/Primo/Product_Documentation/Back_Office_Guide/060Configuring_Primo's_Front_End/020Views_Wizard))
- Currently, Primo does not support a hybrid view of ALMA and Voyager.
- Topics related to the configuration of the Primo Front End, which allows ALMA end users to discover and request ALMA data and services.
- For information on configuring how services, labels, and related records appear in Primo's Get It and View It tabs, see Discovery Interface Display Logic.

- ALMA services from Primo – seamless access to resources for users. Customer service advices to involve public services staff! Early access means better success down the road.

The purpose of this paper is to advocate for training as a priority for the faculty, students and community who will eventually enjoy the outcropping of content from the ALMA Primo system. The absence of reference training and concern the installation and implementation was pushed at a much shorter timeline than required will hopefully be beneficial. Hopefully, this paper does not serve as my own naiveté concerning the potential ease of use and service from the ALMA Primo system.

## Websites

### ALMA

ALMA listserv - <http://el-una.org/mailling-lists/ALMA-mailling-lists/>

Documentation (plus release notes) - <http://knowledge.exlibrisgroup.com/ALMA>

API Info - <https://developers.exlibrisgroup.com/ALMA>

<http://www.exlibrisgroup.com/category/ALMAOverview>

<http://www.exlibrisgroup.com/files/Products/ALMA/ALMAA4.pdf>

Discover ALMA: [http://knowledge.exlibrisgroup.com/ALMA/Training/Discover\\_ALMA](http://knowledge.exlibrisgroup.com/ALMA/Training/Discover_ALMA)

ALMA Essentials: [http://knowledge.exlibrisgroup.com/ALMA/Training/ALMA\\_Essentials](http://knowledge.exlibrisgroup.com/ALMA/Training/ALMA_Essentials)

Extended Training: [http://knowledge.exlibrisgroup.com/ALMA/Training/Extended\\_Training](http://knowledge.exlibrisgroup.com/ALMA/Training/Extended_Training)

Ask the ALMA Expert:

[http://knowledge.exlibrisgroup.com/ALMA/Training/Ask\\_the\\_ALMA\\_Expert](http://knowledge.exlibrisgroup.com/ALMA/Training/Ask_the_ALMA_Expert)

What's New Videos 2016:

[http://knowledge.exlibrisgroup.com/ALMA/Training/01\\_What's\\_New\\_Videos\\_2016](http://knowledge.exlibrisgroup.com/ALMA/Training/01_What's_New_Videos_2016)

Certification program:

[http://knowledge.exlibrisgroup.com/ALMA/Training/ALMA\\_Administration](http://knowledge.exlibrisgroup.com/ALMA/Training/ALMA_Administration)

### Primo

Primo Training Overview: <http://www.exlibrisgroup.com/category/PrimoOverview>

[http://knowledge.exlibrisgroup.com/Primo/Training/Primo\\_Training\\_Overview](http://knowledge.exlibrisgroup.com/Primo/Training/Primo_Training_Overview)

Discover Primo: [http://knowledge.exlibrisgroup.com/Primo/Training/Discover\\_Primo](http://knowledge.exlibrisgroup.com/Primo/Training/Discover_Primo)

Getting Started with Primo:

[http://knowledge.exlibrisgroup.com/Primo/Training/Getting\\_Started\\_with\\_Primo](http://knowledge.exlibrisgroup.com/Primo/Training/Getting_Started_with_Primo)

Extended Training: [http://knowledge.exlibrisgroup.com/Primo/Training/Extended\\_Training](http://knowledge.exlibrisgroup.com/Primo/Training/Extended_Training)

What's New Videos:

[http://knowledge.exlibrisgroup.com/Primo/Training/What's\\_New\\_Videos](http://knowledge.exlibrisgroup.com/Primo/Training/What's_New_Videos)

Ask the Primo Expert:

[http://knowledge.exlibrisgroup.com/Primo/Training/Ask\\_the\\_Primo\\_Expert](http://knowledge.exlibrisgroup.com/Primo/Training/Ask_the_Primo_Expert)

Primo Administration:

[http://knowledge.exlibrisgroup.com/Primo/Training/Primo\\_Administration](http://knowledge.exlibrisgroup.com/Primo/Training/Primo_Administration)

Primo implementation for reference:

- California State University San Marco: <https://biblio.csusm.edu/>
- Boston University: [http://buprimo.hosted.exlibrisgroup.com/primo-explore/search?vid=BU&lang=en\\_US&sortby=rank](http://buprimo.hosted.exlibrisgroup.com/primo-explore/search?vid=BU&lang=en_US&sortby=rank)
- Owensboro Technical & Community College: <https://owensboro.kctcs.edu/academics/library/>
- Tennessee Tech: <https://www.tntech.edu/library/>
- Colorado School of Mines: <http://library.mines.edu/>
- Charles Darwin University (Australia) <http://cdu.edu.au/library/>

Facebook site - <https://www.facebook.com/exlibrisgroup>  
Keystone Library Network: <https://www.klnpa.org/member-libraries/>  
Voyager server and Port information: <https://www.klnpa.org/voyager-server-information/>

## References

Barton, Bruce, Brown, M.E., Chao, Z., Nunson, K., Varmum, K. (2016). A Vision for Next Generation Resource Delivery: Report of the Big Ten Academic Alliance Discovery to Delivery Project Action Committee. BIG Academic Alliance. <https://www.btaa.org/docs/default-source/library/d2dnov2016report.pdf?sfvrsn=4>

Breeding, Marshall (2017). Library Systems Report 2017. American Libraries Magazine. 48(5).

Perrin, Andrew (September 2016). Book Reading 2016. Pew Research Center. <http://www.pewinternet.org/2016/09/01/book-reading-2016/>

Siôn Romaine & Jian Wang (2017) When ERM Met ALMA: The Intricacies of Content Management in a Shared Consortia Landscape, *Serials Review*, 43:1, 17-27, DOI: 10.1080/00987913.2017.1279896

Zhang, Shali (July 2017). ALMA experience. Personal email.