

# Smart Libraries Newsletter

News and Analysis in Library Technology Developments



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## Smarter Libraries through Technology

### Competing Visions and Technology Ecosystems

By Marshall Breeding

ProQuest and EBSCO Information Systems continue to vie for the busines of libraries across a growing range of products and services, spanning many different aspects of technology and content. While there are many other competitors in the mix, these two have an interesting set of competitive dynamics.

Both companies have backgrounds in creating or distributing content products and platforms for delivery and access. Their product strategies expanded to include discovery services and electronic resource management products. ProQuest acquired Serials Solutions with its 360 knowledge base and tools for linking and electronic resource management. Under ProQuest, Serials Solutions developed Summon as the first indexed discovery service able to search articles, book chapters, and other resources across all the library's electronic subscriptions. In parallel, EBSCO Information Services created its own knowledge base of electronic resource holdings, tools for managing electronic resources, and EBSCO Discovery Service.

This competition advanced to a much higher level of intensity when ProQuest acquired Ex Libris. This purchase brought the leading provider of technology products into the

ProQuest fold, including market leading products such as Alma and Primo.

In parallel to ProQuest's advance into technology, EBSCO likewise launched a strategy to deepen its involvement as a technology provider for libraries. Rather than acquiring or building a proprietary technology platform, EBSCO opted to launch an initiative to create an open source library services platform. This strategy provided an alternative that enables modularity and choice for libraries in contrast to bundled offerings spanning resource management and discovery.

The FOLIO project launched by EBSCO was able to attract interest of a broad range of stakeholders, including the community of libraries involved with Kuali OLE. Following some four years of development, libraries are now beginning to implement FOLIO. This issue of *Smart Libraries Newsletter* features the latest round of early implementations with an interesting mix of support providers and library-driven efforts. It will be interesting to see how the FOLIO project fares going forward and whether it will have an impact on the competitive dynamics with its rival ProQuest.

Table 1. ProQuest and EBSCO Offerings

Product	ProQuest	EBSCO Information Services
Content	ProQuest databases	EBSCOhost
Academic ebooks	ProQuest Ebook Central	EBSCO eBooks
Content enrichment	Syndetics Unbound	NoveList
Content marketplace	OASIS Rialto	GOBI Library Solutions
eResource Knowledgebase	360 Knowledgebase Alma Knowledgebase	EBSCO Knowledge Services
Federated Authentication		OpenAthens (distributor)
Discovery	Primo Summon	EBSCO Discovery Service
Website management		Stacks
Resource Management	Alma Aleph Voyager	FOLIO Integration partnerships with ILS partners
Reading list management	Leganto	
Research services	Esploro	

## FOLIO Advances with New Implementations and Organizational Changes

The project to create the open source FOLIO library service platform has made significant advances, including a round of new installations and some changes in organizational structures. Libraries have partnered multiple support vendors, demonstrating the readiness of the software to accommodate a wide range of academic libraries. Other libraries have opted to implement FOLIO apps, such as electronic resource management, as a first phase, while continuing to rely on their existing ILS for other areas of functionality.

The organizational structures related to FOLIO are evolving. The Open Library Environment, which has been helpful to help manage the transition from the Kuali OLE to FOLIO and to channel resources into FOLIO development, will be phased out, though its members will continue to be part of the FOLIO community. The Open Library Foundation will continue its role to provide governance services to FOLIO and other open source software projects.

### Selected Case Studies

Each implementation of FOLIO has taken place within its unique library context and support model. The current mix of FOLIO projects includes both those implementing independently and others with external hosting or support providers. The range of FOLIO modules also varies. Some have fully migrated from their incumbent ILS and ERM environments for the full FOLIO library services platform (LSP), while others have focused on the modules related to electronic resource management.

#### *Chalmers University of Technology*

The library of Chalmers University of Technology was the first to fully implement FOLIO, completing its migration from Sierra in September 2019. The library uses most modules of FOLIO, including circulation (check-in and check-out), eholdings, inventory, license management, orders, receiving, and patron management. The implementation of Chalmers University of Technology was featured in the November 2019 issue of *Smart Libraries Newsletter*.

#### *Small Academic Libraries*

Three relatively small academic libraries have implemented FOLIO with support services provided by ByWater Solutions and software hosting provided by EBSCO. These include:

- Warner University, a small academic library with a collection of 75,000 volumes, migrating from OCLC's WorldShare Management Services.
- St. Thomas University, with a collection of about 500,000 volumes, migrating from WorldShare Management Services.
- Washington and Jefferson College has implemented the courses app of FOLIO and continues to use its SirsiDynix ILS for other functions.

Index Data, which developed the lower-level infrastructure for FOLIO, also provides hosting and support services. The Simmons University library placed FOLIO in production in June 2020, migrating from Millennium ILS. Simmons belongs to the Fenway Library Organization (FLO), and Index Data is working with other FLO member libraries for their FOLIO implementations.

#### *GBV*

The Leibniz Information Centre for Economics, or ZBW, has implemented the ERM modules of FOLIO through services provided by Verbundzentrale des GBV. Implemented FOLIO apps include agreements, licenses, organizations, and users. The library continues to use its LBS integrated library system from OCLC for circulation and print resource management. Cataloging is performed with the national union catalog based on the OCLC LBS product. ZBW has implemented a discovery environment based on the VuFind interface and the EconBiz metadata framework, which provides resource discovery in the institution's areas of specialization drawing from a variety of metadata sources.

GBV has assumed responsibility for the ongoing development of the Global Open Knowledgebase (GOKb), which serves as one of the core metadata sources for its deployment of the FOLIO ERM modules. This arrangement demonstrates FOLIO's support of multiple knowledge bases beyond the one managed by EBSCO.

#### *Missouri State University Libraries*

The libraries of Missouri State University became the first in North America to implement the full FOLIO LSP as they migrated from their Sierra ILS in June of 2020. The library implemented the FOLIO ERM modules in January of 2020 and completed the full migration on June 8, 2020. MSU is working

Table 2. FOLIO Implementations

Institution	ERM	ILS	Discovery	Support Provider	Previous ILS
<b>Full FOLIO LSP implementations</b>					
Chalmers University of Technology	Aug 2019	Sep 2019	EDS	EBSCO	Sierra
Missouri State University	Jun 2020	Jun 2020	EDS	EBSCO	Sierra
St. Thomas University	Jun 2020	Jun 2020	EDS	ByWater	WMS
Simmons University	Jun 2020	Jun 2020	EDS	Index Data	Millennium
Warner University	Jun 2020	Jun 2020	EDS	ByWater	WMS
<b>FOLIO ERM implementations</b>					
Washington and Jefferson College	Jun 2020		EDS	ByWater	Symphony
Leibniz Information Centre for Economics	May 2020			GBV	LBS
Leipzig University	Jun 2020		Local / VuFind	Self-hosted	LIBERO
Cornell University	Jun 2020		EDS	EBSCO	Voyager
Duke University	Jun 2020	2022?	Summon	Index Data	ALEPH
<b>Pending Implementations</b>					
Lehigh University			EDS / VuFind	Index Data	Kuali OLE
Fenway Library Organization			EDS	Index Data	Voyager / Millennium
National Library of Hungary			custom	HerMészSoft	Amicus
Five Colleges			EDS	EBSCO	Aleph
National Library of Florence					Locally developed
Texas A&M University		July 2021	EDS	Self-hosted	Voyager
Shanghai Library		Oct 2021		Self-hosted	Horizon
Spokane Public Library				Self-hosted	Horizon
University of Alabama	Dec 2020	Dec 2020	EDS	EBSCO	Voyager
University of Chicago		Jul 2021	EDS	TBD	Kuali OLE

directly with EBSCO Information Services for hosting, migration, and support services.

MSU was one of the first libraries to select FOLIO via a formal RFP procurement process. While it was challenging to compare responses from vendors offering mature proprietary products with an open source software still in development, the library selected FOLIO expecting a lower total cost of ownership over time and greater flexibility and extensibility. The selection was made recognizing there would be challenges in the short term to gain long-term benefits.

The implementation of FOLIO for the MSU libraries also involved withdrawing from the SWAN cluster within the statewide MOBIUS network. This resource sharing network is

based on each member using the Sierra ILS with Innovative's INN-Reach providing direct consortial borrowing capabilities. The operation of the Sierra ILS was managed by MOBIUS, which often meant some constraints or delays in dealing with system changes or problems. Participation in MOBIUS seen as expensive and of diminishing value. The volume of resources sharing through MOBIUS declined almost every year following its initial deployment. The University of Central Missouri exited MOBIUS in June 2019 to implement Ex Libris Alma.

As the library moves out of the MOBIUS environment, Thomas Peters, Dean of Library Services, anticipates that it will explore other opportunities for providing access to print and electronic resources not held locally. Peters anticipates

strengthening relationships with other local libraries and forming new arrangements for resource sharing. Potential partners in the immediate area include Drury University, Ozarks Technical Community College, the Springfield-Greene County Library, Evangel University, and some smaller colleges affiliated with religious institutions. MSU also belongs to the Mid-America Library Alliance (<https://www.malalibraries.org/>).

The MSU libraries will operate within a standalone tenant as they move to FOLIO and within the multitenant instance of the platform hosted by EBSCO Information Services. The contract with EBSCO also includes the OpenAthens federated authentication service, EBSCO Discovery Service, as well as other electronic resource management components such as Full Text Finder. This suite of technology components provides an opportunity to strengthen its broader technical infrastructure. OpenAthens will enable it to transition from OCLC EZproxy, though a very small number of products may have some technical incompatibility. The OpenAthens infrastructure resides in the United Kingdom, and some products will require a US-based authentication service.

The library has worked with EBSCO personnel for the installation, migration, and support for FOLIO. MSU does not have local developers to contribute code to the project but has been involved in the FOLIO Technical Council and multiple special interest groups. This project comes at a time of a hiring freeze at the University, meaning that no new personnel were added for the implementation project, though some library positions were reconfigured.

The learning curve for library personnel was steep, given the major differences from their previous Sierra ILS. While the initial implementation has been completed, compromises and workarounds remain. One obstacle has been the lack of cataloging in the current release of FOLIO. The library is not able to easily edit existing records imported from Sierra and cannot import or overlay new records from OCLC. This functionality will be present in the next release of FOLIO, and the library is able to postpone this activity. One of the upcoming apps will be quickMARC, a basic MARC editor, and a full-featured metadata editor is under development. Other functionality missing but expected in future releases includes serials check-in, workflows for financial processes, and a reporting and statistics app.

According to Brooks Travis, IT coordinator for the MSU libraries, extensibility is a key benefit of FOLIO. They see great potential in taking advantage of its full set of back-end APIs to be able to create new functionality or services as needed. The library did not see this level of extensibility available in other products. Travis adds, "Being involved in the development community, and seeing the completion of our implementation of this open source system, has been a very different from

our previous situation and has been a rewarding experience."

### *Duke University*

The libraries of Duke University have been involved with the Open Library Environment since its inception and are active participants and implementors of FOLIO. Deborah Jakubs, the Rita DiGiallonardo Holloway University Librarian and Vice Provost for Library Affairs, is a board member of both the Open Library Environment and the Open Library Foundation. Many other staff members have been active participants in the Quali OLE and FOLIO projects.

The library is working with Index Data for its FOLIO implementation and began using some of the ERM modules in June 2020. Its full implementation is tentatively planned for 2022.

The Duke University Libraries participates in the discovery environment of the Triangle Research Libraries Network (TRLN), along with North Carolina State University, North Carolina Central University, and the University of North Carolina at Chapel Hill. That implementation is based on the open source Blacklight to provide a Bento-box interface, using Ex Libris' Summon index for article-level electronic resource discovery.

Unlike many other FOLIO implementors, Duke will not be using EBSCO Discovery Service. They will continue to rely on TRLN Discovery. The library is currently working with Ex Libris to integrate the 360 Knowledge Base with the FOLIO ERM. This integration project is currently in the planning and design phase with development to commence in Fall 2020.

### *Texas A&M University Libraries*

The libraries of Texas A&M University joined the Open Library Environment in January 2016 with intentions to implement Quali OLE and are now fully committed to implementing FOLIO. As a large academic library system, its requirements for technology infrastructure are complex. The libraries have been using Ex Libris Voyager since 2000.

Texas A&M plans to implement FOLIO locally instead of working with a commercial hosting and service provider. The libraries have been active participants in the FOLIO community, contributing to many of its special interest groups and financially through membership in the Open Library Environment. Rather than paying an external vendor, its expenses for its FOLIO implementation will come in the form of local hardware equipment and technical personnel.

According to Dean of Libraries David Carlson, the library system expects to put FOLIO into production during the Summer of 2021 and is confident that the software will be ready for their level of use by that time.

### Cornell University

Cornell University Library had initially deployed the FOLIO ERM modules independently in January 2020 on Amazon Web Services. It is working with EBSCO to implement and host the rest of FOLIO. Cornell's FOLIO ERM application was migrated to EBSCO's FOLIO hosting service in June 2020. Philip Robinson, Director of Library Systems stated, "This was actually the first time ever that FOLIO had been migrated from one production hosting solution to another, and the transition went quite smoothly. So far, our ERM staff like using FOLIO for their work."

Cornell plans a full implementation of the FOLIO LSP by July 2021. The library has implemented a discovery environment based on the open source Blacklight interface, providing article-level discovery through the EBSCO Discovery Service API. This environment will continue to be used with FOLIO once it is implemented.

### FOLIO Governance and Commercial Stakeholders

The FOLIO project brings together a complex assortment of stakeholders. Each of these organizations makes unique contributions. The FOLIO community, comprising commercial organizations, nonprofits, and libraries, continues to expand. Organizational structures are changing as the project enters this new stage of diverse implementations.

#### EBSCO FOLIO Services

EBSCO Information Services participated in the launch FOLIO as an open source library services platform, facilitating the emergence of a community of developers and stakeholders and providing resources in multiple channels, including substantial funding. Following a phase of feasibility assessment and conceptual design, EBSCO funded an engagement with Index Data to perform the software development of the lower-level components for FOLIO, including its core microservices infrastructure and user interface frameworks. EBSCO has also lent its expertise toward the design of its technical architecture along with organizational support and project management.

EBSCO's involvement with FOLIO is led by Gar Sydnor, Executive Vice President for FOLIO and Research SaaS. Other key EBSCO employees involved with FOLIO include Harry Kaplanian (EBSCO FOLIO Product Management), Christopher Spalding (open source advocate and strategist), Anya Arnold (FOLIO implementation services), and Cate Boerema (Lead Product Owner).

Open source software projects usually involve commercial services. Organizations cannot charge for the software

itself, but are able to provide services, such as for hosting, data migration, set-up, and ongoing support. As one of the principal organizations backing the project, EBSCO is in a strong position to offer services surrounding the FOLIO software. Its direct current customers for its FOLIO services include:

- University of Alabama
- Five College consortium
- Missouri State University
- Chalmers University of Technology
- Cornell University

EBSCO also has entered in partnership agreements with other companies that provide support services for FOLIO installations hosted by EBSCO. Some of these partners include:

- ByWater Solutions (Unites States and Canada)
- IWA (Finland)
- Gest Info (Mexico)
- Mygrator (Benelux region of Flanders, Netherlands and Luxembourg)
- BibLibre (France)
- Universal Knowledge Software (South Africa)
- PTFS Europe (United Kingdom)
- Via Appia (Brazil)
- Implementers L.L.C. (Lebanon)
- IBAI-SCANBIT (Spain)
- KnowledgeWare Technologies (Arab Gulf region)
- Infoestratégica Latina (Latin America)
- ALZAD Inc. (Middle East and North Africa region)

This set of partners enables EBSCO to market FOLIO globally. The company's global salesforce markets FOLIO as part of its broad suite of technology and content products and services. EBSCO will provide hosting services and integration with its knowledge base and EBSCO Discovery Service. Regional partners will help promote FOLIO and will provide support in local languages and with the perspective of library needs in the region.

The deep investments that EBSCO has made in facilitating the development of FOLIO and its cultivation of a global network of support providers reflect its place as a strategic product well aligned with its growing portfolio of SaaS products and with its existing content and discovery business. The company notes that FOLIO is not an EBSCO product, but rather that it is a "community movement that we are proud to support and be part of."

According to Gar Sydnor, "From the inception of the project, we see widespread adoption as key to FOLIO's sustainability.

We plan to help accomplish that through many channels, including partnering with local vendors.” He continues, “We at EBSCO are excited that FOLIO is available and ready for use now. Libraries can implement it on their own, with collaborative assistance from the community, or with the help of a vendor. There are already successful implementations and there are many ways to implement FOLIO. Missouri State University was able to implement and migrate to FOLIO even while its personnel are working remotely. Some may opt to move to the full system all at once while others may implement it in phases, using selected components of the platform. We see FOLIO as ready now and that libraries can expect a smooth transition. EBSCO is fully committed to the success of FOLIO.”

### *The Open Library Environment to Disband*

The Open Library Environment (OLE) was originally established in 2008 as a collaboration of libraries with a common interest in the development of an open source, next-generation library automation system, which was later called Kualo OLE after its affiliation with the Kualo Foundation. Despite several years of development, the Kualo OLE software was not fully completed, and these libraries eventually shifted their focus to the emerging FOLIO project.

OLE was not legally incorporated as a formal organization. It is not, for example, a 501 (c) (3) nonprofit organization able to receive and manage funds. Rather, the OLE libraries have worked in partnership with other legal entities for financial and administrative support. During the time in which it was involved with the Kualo OLE software, the project relied on the Kualo Foundation for its legal and administrative governance. The grant funding from the Mellon Foundation was awarded to key participating institutions, including Duke University and the Indiana University. Once the project pivoted to FOLIO, it relied on the Open Library Foundation for financial and administrative support.

Libraries that join the Open Library Environment pay membership dues scaled according to their relative support of the development of the FOLIO software. Other financial assets of the organization include funding provided by the Andrew W. Mellon Foundation to pivot from the Kualo OLE project to FOLIO. The Mellon Foundation has authorized the use of these funds for FOLIO developers, community engagement, and sustainability planning. The administrative support of financial resources of OLE membership dues is managed via its governance organization, currently the Open Library Foundation. Funding from the Mellon Foundation is managed by Duke University.

Michael Winkler served as the executive director of OLE from November 2015 through his retirement in August 2019.

Ginny Boyer succeeded Winkler, while also currently holding the role of Managing Director of OLE.

Members of OLE include some of the libraries that were involved with Kualo OLE and now plan to implement FOLIO. One of the key roles of OLE involves promoting FOLIO among the academic library community and recruiting additional participants. These efforts have seen limited success. Recent expansion of the FOLIO implementation community has come through procurements awarded to commercial support providers.

The Open Library Environment will be dissolved at the end of this fiscal year in June 2021. This transition will mark a shift in the financial support of FOLIO. The membership dues of the OLE members represent a modest portion of the overall costs of the FOLIO project. The in-kind commitments from OLE members have been substantial and represent the majority of personnel actively involved in design and development of FOLIO. As the software moves into production, the sustainability of the project will be strengthened through wider adoption of FOLIO. Although not yet fully realized, the financial ecosystem of FOLIO may increasingly rely on the fees paid by implementing libraries for hosting and support services. Many libraries involved with FOLIO through outside commercial service arrangements will continue to contribute personnel and other resources to the project.

The planned dissolution of the Open Library Environment does not signal a faltering of the FOLIO project. Rather, it represents a simplification of its complex governance and financial arrangement, removing a layer of organizational expense and overhead.

It is anticipated that as new libraries select FOLIO, they will enter commercial service contracts without the need to also pay dues toward governance organizations. This arrangement has been well established in the open source Koha and Evergreen communities. The transition from acquiring and managing funding needed for software development via a membership organization to that of commercial and independent implementors can be seen as a step in the evolution of the project that may strengthen its long-term sustainability.

### *Open Library Foundation*

The Open Library Foundation is a 501 (c) (3) nonprofit organization to provide governance for open source projects. The organization was established by EBSCO Information Services and the Open Library Environment in 2017.

The Open Library Foundation and Open Library Environment have considerable overlap in their missions related to facilitation of open source software. While OLE is dedicated solely to FOLIO, the Open Library Foundation supports

multiple projects. In addition to FOLIO, it provides governance services for the GOKb, VuFind, and Project ReShare.

The two organizations also overlap in administrative personnel. Winkler served as the executive director of the Open Library Foundation from its founding until his retirement. Ginny Boyer likewise administers both organizations and has served as the Managing Director of the Open Library Foundation since March 2019.

The Open Library Foundation has decided to scale back some of its operational expenses. It plans to eliminate its managing director position as it is currently structured at the end of the 2020 calendar year, according to David H. Carlson, Dean of University Libraries for Texas A&M University and President of the board of directors of the Open Library Foundation. Instead, the organization will define a new part-time position for its administration. The organization will continue to provide a set of financial, legal, technical tools to manage the multiple open source projects for which it provides governance services.

## Shifting Model of Sustainability

The crucial consideration for library purchase of any major software product is sustainability. Before committing to a major component of their strategic technical infrastructure, libraries need a high level of assurance that it will remain viable for the long term – usually measured in decades. For proprietary products, this assurance of sustainability usually lies in the long-term viability of the companies that develop and support products. With ongoing mergers and acquisitions, these prospects warrant scrutiny.

For open source projects, ongoing sustainability likewise depends on confidence in the organizations involved. In some cases, this organization will be a loosely knit community of libraries and support organizations. For FOLIO, this community involves EBSCO, one of the largest companies in the library industry, along with a network of other commercial support companies as well as major libraries committed to the product and contributing financial and in-kind resources.

As FOLIO enters this implementation phase, the business environment will naturally shift accordingly. Revenue from commercial services will increasingly fund ongoing development. While EBSCO continues to fund FOLIO development at large, it has stated that it will need to focus its investments in development on the needs of its own customers. Much of that development will be of interest to the entire FOLIO community. Libraries implementing independently or via other support providers will likely do the same.

This model of supporting an open source project via revenues generated through commercial services and community participation has been well established as a successful sustainability model in the library arena. The community surrounding the open source Koha ILS, for example, has seen success with this approach for more two decades. Any additional funds gained through grants or voluntary contributions can further enhance the resources available to advance the project. Any project that depends entirely on voluntary contributions or even on grant funding will have a lower confidence in long-term sustainability relative to those with a vigorous commercial environment.

Questions or suggestions  
for topics in future issues?



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