Smarter Libraries through Technology: Evolution versus Revolution in Technology for Public Libraries

By Marshall Breeding

Each type of library faces a unique set of challenges. Despite a broad area of shared qualities and values, academic, public, school, and other libraries each also have their own specific characteristics. In many respects, each of these types of libraries has diverged even further in recent years. This divergence has implications for the strategic technology products that support their operations.

Academic and research libraries have been transformed by the almost complete transition of scholarly publishing to electronic formats. This dynamic has upended the way that they manage and provide access to their collections, giving rise to a new generation of library services' platforms which recognize the dominance of electronic materials, but are able to manage content of all formats. *Smart Libraries Newsletter* has chronicled the emergence and development of products such as Ex Libris Alma and OCLC WorldShare Management Services. These types of products have resonated with academic libraries seeking a comprehensive resource management approach delivered through a Web-native multi-tenant platform. Innovative and SirsiDynix continue to retain and gain new academic libraries via their evolved or hybrid integrated library system (ILS) products.

Libraries for the PreK-12 schools have quite distinctive technologies. They

Get Your Smart Libraries Newsletter Online in PDF!

Subscribers to ALA TechSource's *Smart Libraries Newsletter* can download PDF versions of the current and past issues at journals.ala.org/sln. Past issues will become open access six months after the publication date.

Visit Marshall Breeding's website "Library Technology Guides" (librarytechnology .org) for comprehensive and objective information technology products and services used by libraries. Covering the organizations that develop and support library-oriented software and systems, the site offers extensive databases and document repositories.

Thank you for subscribing! Your purchase funds advocacy, awareness, and accreditation programs for library professionals worldwide.

appreciate technologies able to manage library collections selected according to grade levels within a more carefully controlled environment of materials vetted by librarians and teachers. The thin budgets of schools demand very low per-library costs for technology and favor web-based automation systems that don't require dedicated computers or servers and that can be deployed centrally for districts or consortia of districts. Integration with district-wide administrative systems is essential for automatically populating student records, which must be entirely refreshed every term. Follett has developed its products around these characteristics and thoroughly dominates the school library sector in the United States. Softlink has a strong presence internationally.

Public libraries, the focus of this issue of *Smart Libraries Newsletter*, face their own distinctive set of challenges and requirements. Print and other physical materials remain a very strong part of public libraries' daily operations more than any other type of library. They generally continue to see growing demand for print materials. These libraries must acquire multiple copies of popular titles for each of their facilities and see high volumes of circulation, which require that they implement any strategy to help them meet intense demand, such as floating collections. Public libraries in urban areas must deal with incredibly high volumes of circulation transaction. New York Public Library, for example, reports circulation statistics around 27 million transactions annually. As a point of comparison, Harvard University—one of the largest and busiest academic libraries—recently reported 1.23 million circulation transactions.

The vigorous demand related to print materials tells only part of the story of public libraries. They also must respond to intense interest in e-books and other digital content. Toronto Public Library, for example, conducted over 3 million e-book lending transactions in 2015. These libraries must also provide a digital presence that reflects the many events and other services they offer. Public libraries deliver a variety of services that meet a diverse set of informational, cultural, and logistical needs of their patrons, which generally fosters engagement with the communities they serve.

The ILS continues to stand as the dominant force of automation for public libraries, often supplemented by a variety of additional technology components and interfaces. In the United States, products such as SirsiDynix Symphony and Horizon; Innovative's Sierra, Millennium, and Polaris; Library.Solution and Carl.X from The Library Corporation; and Koha and Evergreen as open source options all are based on products launched from 15 to 25 years ago and follow the long established functional model of the ILS. Each has evolved to adapt to more current technological underpinnings and new functionality, but much of the print-based orientation of the ILS remains intact, evoking the need to handle electronic and digital services in other ways.

These ILS products commonly used in public libraries also retain the client-server architecture. They reside on physical or virtual servers, where individual instances of the software serve each library or consortium. Most public libraries continue to rely on graphical client software that must be installed on the computer of each staff member or each service desk. There is considerable movement afoot to create web-based interfaces that obviate the need for client software, though they remain server oriented. Of this group of products, only Koha was created from the beginning with web-based interfaces.

Apollo from Biblionix stands apart as a public library system delivered via a modern multi-tenant platform with its capabilities provided through web-based interfaces. Its functionality is designed for very small public libraries and offers traditional print-oriented workflows. Apollo has been exceptionally well received among small public libraries. Much of that success can be attributed to staying true to the features that matter most to them and not venturing into the complex functionality needed by large public libraries. Apollo, for example, provides integration for the major e-book providers, but doesn't aim to be a comprehensive digital platform.

In broad terms, public library automation is dominated by a set of well-established and evolving ILSs. With Apollo as an exception, no entirely new product has been created for public libraries in the last decade. This pattern contrasts to the academic sphere which has seen three new platforms: Ex Libris Alma, OCLC WorldShare Management Services, and the recent EBSCO-sponsored open source initiative.

It is in this context that Axiell, a major company providing technology products to libraries, archives, and museums, has launched an effort to develop a library services platform designed specifically for public libraries. This new product, Axiell's Quria, has been designed with a digital-first vision of functionality and delivered through a multi-tenant web-native platform. Not unlike the technological approach articulated for the new EBSCO-sponsored library services platform for academic libraries, Quria will be based on a light-weight framework for common services and upon which pluggable application modules can reside. It is notable that two independent projects have landed on similar technical architectures.

It is naturally premature to make any predictions of any product, however promising, at its initial launch. Quria remains in its design and early development phase, with early versions expected to be available in 2017. Its position bears some resemblance to that of Alma in 2009 when it was announced as a new conceptual product at a time when academic libraries were mostly involved with print-oriented products with older technical architectures. It will be interesting to see how Quria fares as a product developed entirely from scratch in a library sector that until now has relied on long-standing and evolved automation products. Though not well known in the United States, Axiell is a major technology company oriented to libraries and similar organizations with considerable development capacity. This issue of *Smart Libraries Newsletter* provides a glimpse at the product characteristics and development agenda for Quria. Expect future coverage on whether the product is able to live up to Axiell's expectations.

Axiell Launches Quria: New Library Services Platform for Public Libraries

Although not a product that will be marketed in the United States in the near future, Axiell's Quria will be designed to accommodate the requirements of modern public libraries increasingly involved in digital delivery of content and services and will be based on current technologies. Axiell aims for Quria to help libraries cope with the shifts they are making toward digital services.

Axiell's development of Quria stands out as the first library services platform created especially for public libraries. The design of the product fully adheres to the model of the library services platform, in that it has comprehensive resource management that spans digital and print resources and the product is deployed through a multi-tenant platform with native web interfaces for staff workflows and patron discovery. Other products oriented to public libraries have evolved from traditional ILSs with large remnants of older technical architectures and resource management workflows. Although Quria remains in its development phase, it warrants attention to discern whether the library services model can succeed in the public library sector to the extent that it has for academic libraries.

Axiell, as one of the larger companies in the library technology industry, has a reasonable level of resources to take on the development of such an ambitious project. As of the end of 2015, Axiell reported a total of 274 personnel, with 85 devoted to software development. Axiell's most recent company brochure states 290 personnel employed. Axiell is somewhat smaller than other companies such as Ex Libris (615 personnel), SirsiDynix (416), and Innovative (329).

The current state of early development of this new product from Axiell does not afford the opportunity to gain external information about Quria. At this point, we can describe the design of the product and the ambitions that Axiell has for it. This coverage is not unlike what was given to the Kuali OLE project in 2010, Ex Libris Alma in 2011, or our recent feature on the new EBSCO-sponsored open source initiative. Such an early glimpse at a product, however promising, must thereafter be tracked in subsequent reports regarding the extent to which it meets expectations.

Functional Design

Consistent with the focus of Axiell's library division, Quria has been designed specifically for public libraries, whose needs differ substantially from those serving academic and research organizations. The company has acquired and continues to develop and support a number of ILSs for the public library sector. Each of these products was developed during the era when public libraries were primarily concerned with print materials and prior to the current age of web-based technologies.

Quria's functionality will be built around a fresh view of operational needs of public libraries. Developing a product from scratch means recreating some aspects of functionality that may already exist within the company's existing products. But the major changes that public libraries have experienced in recent years may warrant a fresh look at the requirements and workflows without the constraints imposed by traditional ILSs.

In contrast to the current genre of ILSs, Quria first addresses the digital services of a library, although it will also

offer functionality needed for the management and circulation of print resources. Quria aims to help libraries better manage and provide access to their digital offerings in addition to their print materials, providing an environment for comprehensive resource management. Many public libraries now manage collections of digital assets and Axiell expects even more involvement over time. These libraries also offer programs and events, both within their facilities and online. Management of these digital materials has been addressed with the core of the system, rather than as add-on functionality. The platform aims to provide the means for more effective communication and engagement between the library and its patrons. Quria will include a customer service module, bringing to libraries the customer relationship management approach that has been a widely adopted by other business and non-profit sectors.

Public libraries see increasing demand for the lending of e-books and other digital materials. Addressing this need ranks as a very high priority for public libraries anxious to provide the easiest possible mechanisms for patrons to discover, select, and download e-books to their devices in a way that retains the identity and branding of the library.

Axiell has previously developed Arena as a patron-facing portal for its various resource management products. Arena will likewise work with Quria, but it will also offer its own patron interfaces.

Axiell is well positioned for the integration of e-books and other digital media via its eHUB platform, which aggregates digital materials from a variety of distributors. Agreements have been in place since October 2015 with both OverDrive and OneClickDigital, and the technical integration has been implemented to provide content from these platforms via its Arena patron portal.

In March 2015, Axiell acquired majority ownership of Elib, the largest distributor of downloadable e-books and streaming audiobooks. Elib was previously jointly owned by the four largest Swedish publishing firms. In April 2016, Elib was rebranded as Axiell Media. (See July 2015 issue of *Smart Libraries Newsletter*).

Quria will include a variety of built-in statistical and analytical capabilities to support the building and promotion of library collections. Traditional ILSshave offered a variety of reports, but libraries increasingly need more advanced decision-support tools offering capabilities of business analytics.

This new system will be positioned to strengthen Axiell's offerings for public libraries. Axiell executives state that Quria is being developed for the global public library sector and not necessarily tied to the specific needs of the libraries within its traditional geographic territory of Scandinavia and the United Kingdom. The company will initially focus its efforts for Quria on public libraries in countries where library automation products have not been widely adopted, especially France and Norway. While Axiell is one of the major suppliers of RFID products in Norway, its ILSs have not been offered there. Quria will also be a forward migration platform for its various ILSs used in the United Kingdom, Finland, Sweden, and Denmark.

Technical Characteristics

Axiell is developing Quria as a completely new platform, not based on the technology of any of its many existing products. This approach of starting afresh gives the company the opportunity to take advantage of current technology architectures, components, and development methodologies. Although Axiell has not provided the details of the components which comprise its new platform, the company has given a general outline of its broad technical vision.

Quria has been designed for deployment via software-as-a-service, based on a multi-tenant platform. All users of the service will share the same codebase. The platform will include a relatively small infrastructure layer that will provide common supporting services. Other mostly autonomous subsystems will operate on top of this lower-level integration platform. This design will enable Axiell to add or switch out components as needed to update or expand functionality.

All interfaces for the product will be provided via Web browsers. No additional software will be needed on the computers of library personnel who operate the system or by patrons. As a fully hosted multi-tenant platform, no local servers will be required in the libraries.

Given Axiell's involvement with libraries and archives in many regions, Quria will be designed for global deployment. In addition to distributed infrastructure support, it will be configurable according to language and functionality differences for each country or region in which it is offered. Individual users of the platform will be able to set personalized configuration options for the workflows related to their areas of activity for the library.

Developing the platform anew will also enable Axiell to incorporate modern approaches to data and metadata. Approaches to defining and describing resources can be defined apart from established or traditional structures. Linked data, which has gained ever increasing interest by libraries, will be part of its foundation. In Quria, Axiell has

embraced a policy of open data, enabling mechanisms for importing and exporting data from other sources, including other libraries and business partners.

The company has also tapped the expertise of Factor10, an external software development firm for specific aspects of development and design. The majority of the development will be performed by Axiell's own development team.

Deployment and Marketing Plan

Axiell will initially focus on marketing Quria to libraries in the United Kingdom, Norway, and France. The company has not previously sold its public library systems in France and Norway; its OpenGalaxy ILS continues to hold a strong position in the United Kingdom. The recent acquisition of Moby-doc, a company which produces software for museums reflects Axiell's recent interest in France as a potential new opportunity for its products. The company is already working with at least two libraries as test partners for the functionality and usability of Quria. The group of test partners will expand in coming weeks.

Axiell is working toward commercial availability of Quria in 2017.

Axiell Trend: A New Analytics and Reporting Tool

Responding to the need that libraries have for more sophisticated tools to manage their operations, Axiell UK has launched a new data analytics service called Trend. Deployed via a web-based service, Trend incorporates a methodology often referred to as "big data," continually harvesting raw data from the organizations ILS, which are then processed and analyzed to identify trends and to respond to questions or queries to support operational decisions.

The analytics provided with Trend are especially oriented to helping public libraries measure and improve the services it provides to their communities. It includes a variety of pre-configured reports oriented to common operational issues, as well as the ability to dynamically create specialized queries. The analytics from Trend can be used to identify patterns and relationships in library collections materials, creating the ability to automatically generate recommendations that can be offered as a patron views an item in the online catalog. Trend also helps the library manage its collections, providing data to support acquisitions decisions or weeding efforts. Since the data warehouse on the Trend spans many libraries,

libraries can benchmark their operations with selected peer organizations.

Trend can operate with any of the ILSs offered by Axiell. Its specific technical details and tools available vary according to the country-specific ILS products.

Axiell Corporate Background

Axiell is based in Lund, Sweden. In recent years, the company has expanded beyond its original base in Scandinavia and the United Kingdom, especially as it has acquired companies that produce archives or museum technologies involved in other global regions. Axiell currently has institutional customers in 55 countries. One of the larger companies in the library technology industry, Axiell employs a workforce of around 300 individuals. Axiell currently does not have a presence in North America for its primary library products, though its archival and museums products are used in North American cultural organizations.

Axiell publishes its overall financials in its publicly available annual report. In 2015, the company saw total revenue of 485.9 million SEC or $59.47 million dollars.

(See the April 2013 issue of *Smart Libraries Newsletter* for more details on Axiell, especially its acquisition of Adlib Information Systems.)

Axiell currently organizes its business into the following divisions:

- Axiell Public Library, which maintains and develops the diverse set of ILSs and discovery interfaces itemized below and leads the development of Quria as the company's forthcoming flagship library services platform. This is the largest corporate division of Axiell.
- Axiell Education, which produces tools for educational institutions.
- Axiell Media (formerly Elib), which is a major producer and distributor of e-books and audiobooks.
- Axiell Archives, Libraries, and Museum, which offers a variety of products for management and access to collections in museums or archives. Products include CALM, Adlib Museum, Adlib Archves, Emu, Mimsy, and various museum management products of Mobydoc.

Axiell continues to expand through business acquisitions. Consistent with its recent acquisitions, which expand its global presence in technologies for museums and archives, Axiell acquired Mobydoc in May of 2016. Mobydoc operates primarily in France, providing collection management systems for

museums, and is the leading vendor among the 1,200 French national museums (Musées de France). This acquisition is the latest in a sequence of business transactions that has built a large company with a product portfolio that is diverse both geographically and in the types of organizations addressed.

Acquisition Chronology
- 1985: Axiell Biblioteksystem AB founded
- 2001: Axiell Bibliotek AB formed through merger of Axiell Biblioteksystem AB and BTJ System AB
- 2004: Axiell acquires CSC's Consulting Group's Library Section
- 2007: Axiell acquires TietoEnator Libraries Oy
- Jan 2008: Company reorganized into Axiell Library Group
- Apr 2008: Axiell acquires DS
- Mar 2013: Axiell acquires Adlib Information Systems
- Apr 2014: Axiell acquires KE Software
- Oct 2014: Axiell acquires Selago Design
- Mar 2015: Axiell acquires Elib e-book distributor
- May 2016: Axiell acquires Mobydoc

Axiell Library Products
- Axiell Arena: A discovery interface initially introduced in 2007 to provide not only online catalog features, but also other website components. Arena was designed to work across its resource management products for libraries, archives, and museums.
- BOOK-IT: An ILS developed by Axiell and used primarily by public libraries in Sweden.
- OpenGalaxy: Originally developed by the United Kingdom company DS, which was acquired by Axiell in 2008. This ILS is currently used by over 40 library services in the UK. Axiell recently launched a major revision of OpenGalaxy branded as Spark.
- Axiell Aurora: An ILS with Web-based interfaces developed by Axiell based on the Libra and used primary in Finland.
- Libra: The Libra family of ILSs has distinct versions for Sweden and Finland:
    - Libra.se (Sweden)
    - Libra.fi (Finland)
- DDElibra: Originally developed by Dansk Data Electronic and is used by around 80 public libraries in Denmark. Despite the similarity in names, DDElibra is a distinct product from Libra.se and Libra.fi.
- PallasPro: An ILS supported by Axiell and used by public libraries in Finland.

- Origo: An ILS originally created by Akateeminen Tietopalvelu ATP Oy, which was acquired by Axiell in 2008 and used primarily by public libraries in Finland.
- Adlib Library: An ILS developed by Adlib, which is used primarily in special libraries.

In addition to these products for libraries, Axiell offers a variety of products for archives and museums:

- CALM: A product for the management of archival and museum collections originally developed in collaboration with DS, which it later acquired.
- Adlib Museum: A system for managing museum collections developed by Adlib Information Systems, acquired by Axiell in 2013.
- Adlib Archive: A system for managing archival collections developed by Adlib Information Services, which was acquired by Axiell in 2013.
- EMu: A collections management system, the leading product for Natural History collections. The solution was developed by KE Software, which was acquired by Axiell in 2014.
- Mimsy XG: This product is focused on managing collections for cultural history and multi-disciplinary collecting institutions. Mimsy was developed by Selago design and acquired in 2014.

In recent years, Axiell has seen both gains and losses in its library business. The company has held a dominant position among the public libraries in Denmark with its DDElibra ILS. The public and school libraries in Demark are currently in the process of implementing a new national system, Fælles Bibliotekssystem, being created by a competing company Systematic. To date only a small number of libraries have transitioned to the new system, with the vast majority remaining on DDElibra. Within the next year, the remaining libraries are scheduled to migrate to Fælles Bibliotekssystem. In Finland, about one fourth of the public libraries (176 out of 700) are planning to implement the open source Koha ILS by the end of 2016, moving primarily from ILS products from Axiell. Despite these losses, Axiell continues to make gains in its overall business, reporting increased revenue and customers year over year. Axiell has especially seen gains in its museums and archives products. The launch of Quria provides the potential for Axiell to expand its library business with a newly designed product in a global field of public library products that struggle to evolve form their legacy roots.

DuraSpace Not to Merge with Lyrasis

The March 2016 issue of *Smart Libraries Newsletter* included coverage of the planned merger of DuraSpace into Lyrasis. The boards of both organizations had voted to pursue combining the organizations and had moved into a public comment phase. The final phase of due diligence and negotiations, however, did not result in a merger. Both organizations will continue to operate independently under their individual boards and organizational structure. Although the merger discussions have terminated, both organizations have strong issues related to open source governance and will continue informal collaboration.

Executive Changes at The Library Corporation

The Library Corporation has recently made changes in its executive team. Company co-founder Annette Harwood Murphy continues as President and Chief Executive Officer. Given the company's founding in 1974, Murphy ranks as the longest serving executive in the library automation industry. The company has made several promotions from within its ranks to fill other top executive positions.

Rich Jacobson was named in June 2016 as the company's new Chief Operating Officer, a newly defined position. Jacobson will oversee the daily operations of the company's operations of its Inwood, WV headquarters. He has been with the company since 2005 managing its inside sales processes.

John Burns, with The Library Corporation since 2000, was promoted to Vice President of Sales. He previously worked in the company as a sales development specialist. This position was previously held by Bradley Cole who left the company in January 2016.

Sherry Banks, with The Library Corporation since 1990, now serves as the Director if its Inwood Operations and will be responsible for several customer-oriented areas, including project management, implementation, and support.

Questions or suggestions for topics in future issues?

YOUR COMMENT COUNTS!

Contact Marshall Breeding at
marshall.breeding@librarytechnology.org

ALA Tech Source
alatechsource.org

July 2016
Smarter Libraries through Technology

Smart Libraries Newsletter

Marshall Breeding's expert coverage of the library automation industry.

TO SUBSCRIBE

To reserve your subscription, contact the Customer Service Center at **800-545-2433, press 5 for assistance**, or visit **alatechsource.org**.

The 2016 subscription price is $85 in the United States and $95 internationally.

ALA Techsource purchases fund advocacy, awareness, and accreditation programs for library professionals worldwide.