

# Smart Libraries Newsletter

News and Analysis in Library Technology Developments



50 East Huron Street, Chicago, Illinois 60611-2795, USA



## Smarter Libraries through Technology

### The Consolidation Continues

By Marshall Breeding

Consolidation has been a constant theme of the library technology industry for the last two decades. Through a relentless pattern of mergers and acquisitions, the number of companies offering integrated library systems (ILSs) and other strategic technology products has drastically reduced. This activity has included the acquisition of companies that directly compete with each other and the absorption of technology companies into larger organizations that offer content products or other services to libraries.

Below are some of the major events documented in this newsletter over the years:

- The merger of Sirsi Corporation and Dynix to form Sirsi-Dynix under the ownership of Seaport Capitol (Aug 2005), its sale to Vista Equity Partners (Feb 2007), the acquisition of EOS International (Dec 2013), and its sale to ICV Partners (Feb 2015)
- OCLC's acquisitions of technology companies, including Fretwell-Downing Informatics (Dec 2005), Openly Informatics (Feb 2006), Research Libraries Group (Jul 2006), DiMeMa and its CONTENTdm digital asset management product (Oct 2006), purchase of TechAtlas and its WebJunction service (May 2007), purchase of EZproxy from Useful

Utilities (Mar 2008), BOND and its Bibliotheca ILS used in Germany (Jun 2011), acquisition of HKA and its bicatWise ILS (Nov 2013), its acquisition of Relais International (Mar 2017), and its divestment of QuestionPoint to Springshare (Jul 2019)

- The acquisition of Geac by Golden Gate Capitol and merger into Infor (Jan 2006)
- The business transitions of Ex Libris, including its acquisition by Francisco Partners (Sept 2006), the purchase of Endeavor from Elsevier (Jan 2007), its sale to Golden Gate Partners (Jan 2013), the acquisition of oMbeil and its CampusM platform (Jun 2015), and its acquisition of RapidILL from Colorado State University (Aug 2019)
- Innovative's business developments, including its transition to private equity ownership (Apr 2012), its acquisition of Polaris Library Systems (May 2014), and acquisition of VTLS (July 2014),
- ProQuest's acquisition of Medialab Solutions and the AquaBrowser discovery interface (Aug 2007), acquisition of Webfeat (Apr 2008), its acquisition of Coutts from Ingram Content Group (June 2015), its acquisition of Ex Libris (Nov 2015), and the major investment made by Atairos (July 2019)
- Nonprofit mergers, including the merger of SOLINET, PALINET, and NELINET to form Lyris (Jul 2009), and the merger of DuraSpace into Lyris (Mar 2019),
- The consolidation of companies offering technology products to special libraries into Lucidea, including its acquisition of Inmagic (Dec 2011) and its acquisition of Eloquent Systems (Nov 2017)
- Business events related to Follett, including its purchase of Sagebrush Corporation (Sept 2006) and its acquisition of Baker & Taylor (Jun 2016) and NexTier Education (Jan 2019)

This list of transactions should not be taken as comprehensive. It only includes those that were specifically covered in this newsletter. Also note that the dates given are those of the *Smart Libraries Newsletter* issue in which the news article was published

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and not necessarily those of the event.

This issue features yet another business transaction, one which may have more impact on the industry than any of the preceding events. The acquisition of Innovative Interfaces by ProQuest represents one more step of consolidation in the

library technology industry and a significant expansion of the company's product portfolio into new areas of interest. This proposed transaction is expected to close early next year. Expect further coverage in *Smart Libraries Newsletter* as further developments occur.

## ProQuest to Acquire Innovative Interfaces

In a move that further consolidates the library technology industry, Ex Libris has entered into a definitive agreement to acquire Innovative Interfaces, Inc. from its private equity investors. Since December 2015, Ex Libris has been owned by ProQuest. In addition to its role as a major content provider to libraries, ProQuest is now responsible for a growing portfolio of library technology products, including major systems for resource management, content discovery, materials acquisition, reading list integration, and research services. While ProQuest faces major competition for each of its product categories, this move substantially strengthens its position in the sector and broadens its scope to include public libraries.

Ex Libris is acquiring Innovative from its private equity investors HCCG (formerly Huntsman Gay Global Capital) and JMI Equity. These firms made an initial investment to gain majority position in the company in March 2012 and acquired the remaining shares of the company from co-founder Jerry Kline in February 2013, giving it full ownership. Following close of this transaction, Innovative Interfaces will be fully owned by ProQuest. Innovative was founded in 1978 by Jerry Kline and Steve Silberstein. The eight-year term of the incumbent ownership arrangement falls on the outer edge of typical private equity investment horizons, so the sale is not unexpected. With this acquisition complete, Innovative can move past shorter-term strategies focused on positioning the company for sale and on to expanding its longer-term prospects within a large and stable corporate umbrella.

The acquisition of Innovative comes on the heels of Atairos' new major investment in ProQuest. With the infusion of new capital, it is also not surprising to see the company expand through new acquisitions and product developments.

Ex Libris is a wholly owned business of ProQuest, which is in turn owned by Cambridge Information Group (CIG) and Atairos. CIG, owned by the family of Robert N. Snyder, holds the majority ownership of ProQuest with Andrew Snyder serving as the chair of its board of directors.

As a company with deep involvement with libraries, ProQuest brings significant perspective and experience compared

to capital investment companies from outside the industry. A lateral ownership change to another private equity firm likely would have only solidified the constraints Innovative faced in product innovation and in its ability to expand market share.

### Details of the Acquisition

The transaction is expected to close in early 2020. Until that time, the two companies will continue to operate independently. Financial details of the acquisition were not disclosed publicly.

Following the acquisition, Innovative will become a wholly owned business unit of Ex Libris and will report through its President, Bar Veinstein. No public announcements have been made regarding changes in Innovative's current executive management.

The board of directors, currently constituted by representatives of the outgoing investment organizations, will be displaced by the ProQuest board.

### Product Strategy

ProQuest executives stress that this move will not disrupt the libraries using Innovative's products, which will continue to see the same levels of support and development as they had prior to the acquisition. Ex Libris has a reliable record with continuing products gained via business acquisitions. Voyager, for example, was acquired by Ex Libris in 2006 and has seen ongoing development and support ever since. Major institutions, including the Library of Congress, continue to use Voyager.

No changes can be made in advance of the closing. ProQuest executives Matti Shem Tov, Chief Executive Officer, and Oren Beit-Arie, Chief Strategy Officer, emphasize that strategies for current and future products will emerge over time in consultation with Innovative customers.

## Innovative's Position in the Industry

Innovative ranks as one of the major library technology companies in the industry, similar in size and impact to Sirsi-Dynix, though smaller than top-level companies such as ProQuest, EBSCO, Follett, and Gale. Innovative is about half the size of OCLC in terms of annual revenue. Innovative's products have been deployed in all types of libraries, especially academic, public, law, and medical libraries. The company is active in almost all global regions, though most of its revenue comes from US libraries.

The company has a broad suite of products, which include the following:

- **Sierra**, the latest iteration of the ILS internally developed by Innovative (This product carries forward functionality from antecedent systems including INNOPAC and Millennium, with significantly enhanced capabilities and a new services layer enabling integration into modern technology environments.)
- **Millennium**, a predecessor of Sierra, which continues to be used by libraries
- **Polaris**, an ILS designed specifically for public libraries that was acquired by Innovative (This product was developed by Polaris Library Systems, which marketed it primarily in the United States. Since its acquisition by Innovative, Polaris sales have declined; however, it continues as a major competitor in the US public library arena. Polaris is based on Microsoft technologies, including Windows Server and SQL Server. The product follows a client/server architecture, with new LEAP clients enabling increasing areas of functionality through a web-based interface.)
- **Virtua**, an ILS gained through the acquisition of VTLS (Innovative no longer actively develops or markets Virtua, and its implementations are rapidly diminishing. Two major municipal libraries, Queens Borough Public Library and Hong Kong Public Library implemented Virtua in 2008. Both have entered review and procurement processes, initiated well in advance of this announcement.)
- **Inspire Discovery**, which is the initial product developed on Innovative's next generation technology platform (Although several libraries have committed as development partners or early implementors, no libraries are known to have implemented Inspire Discovery as a production service. An important conceptual design feature of Inspire Discovery involves its concept engine, which delivers search results based on additional factors beyond the basic query text to improve relevancy. Innovative had not previously developed an article-level index of its own but has taken initial steps in this product via harvesting metadata from CrossRef.)
- **Encore**, a discovery interface, which has been widely implemented by many libraries using Sierra (Encore provides modern features, such as faceted navigation and relevancy ranked results, and it may be used to supplement or replace the WebPAC Pro online catalog delivered with Sierra.)
- **Encore Duet**, which expands the scope of search to also include articles, book chapters, and other content via the EBSCO Discovery Service index (Although this product has been widely implemented in many academic libraries using Sierra, it is no longer offered to new customers since the launch of Inspire Discovery.)
- **INN-Reach**, a resource sharing and interlibrary loan platform originally developed for OhioLink, which has been implemented in several other major consortia
- Innovative's **SkyRiver** bibliographic service, which was launched as a competitor to OCLC's cataloging service (Although the momentum of the service has not seen a high level of adoption, its large-scale bibliographic database and high-quality cataloging services, including BIBCO, NACO and CONSER, can be seen as important assets for Ex Libris relative to the Community Zone resources provided on its Alma platform.)

Innovative's position in the academic market has been slipping in recent years, due primarily to the availability of Alma and WorldShare, both developed specifically for academic and research libraries. Although Sierra delivers sophisticated capabilities for managing print collections, it is perceived as less able to manage electronic resources, which represent the largest component of academic library collection expenditures. Innovative had not developed its own e-resource knowledge base or article-level discovery index. Innovative's position with academic libraries was strengthened through a partnership with EBSCO Information Services for access to its discovery index for Encore Duet as well as other electronic resource management tools. The loss of the partnership with EBSCO can now easily be replaced via components available within the Ex Libris product suite, especially the Primo Central Index as well as its knowledge base and link resolver technologies.

The company's prospects were initially bolstered in the academic library sector when it was awarded a major contract to provide Sierra and Encore for Florida Academic Library Services Cooperative (FALSC), which represents all the public university and community colleges in Florida. However, when Innovative was not able to meet the contracted requirements, both parties withdrew from the agreement. FALSC has since entered into negotiations with another vendor, as

yet undisclosed. As academic libraries increasingly move toward shared technical infrastructure in large-scale cooperative implementations, the loss of this deal weakened Innovative's ability to compete for future large-scale projects, an area where Ex Libris has become well established.

Although Innovative's customer base spans all types of libraries, its position with public libraries makes its acquisition by Ex Libris especially notable. Although in earlier phases of its business history, Innovative's products were used by more academic, law, and medical libraries than public libraries. In recent years, its public library customers have become the majority (see table 1). Given that nearly 64 percent of libraries using Sierra and almost all those using Polaris are public libraries, this acquisition gives Ex Libris a very strong entry into the public library sector.

The acquisition of Innovative also alters the dynamics relative to EBSCO Information Services, one of its principal competitors in both the content and technology sectors. EBSCO is overall a larger company and commands a bigger share of the market in the content sector. EBSCO Discovery Service leads in the index-based discovery product category, and its products for linking and electronic resource management are very widely deployed, though exact market share statistics are not available. EBSCO in recent years has strengthened its technology offerings, especially those based on software-as-a-service. The company works with almost all ILS companies to facilitate integrations with EDS and electronic resource management components. EBSCO's acquisition of the Stacks website management system strengthens its presence on patron-facing technologies. Most importantly, however, EBSCO's involvement with FOLIO can be seen more as a head-on competitor to Alma, though in very early stages in its product cycle. The mantra behind FOLIO involves giving libraries choice, both within the platform in a library's selection and deployment of components, but also in expanding the options for libraries in an extremely narrow field of viable products. EBSCO's message of enabling choice may be timely in this era of deeper consolidation.

Innovative has had a relatively tumultuous business history since its transition from private ownership. The company has experienced the exit of many experienced personnel and multiple transitions in executive management (as noted in the June 2019 issue of *Smart Libraries Newsletter*). These changes at the CEO level are especially disruptive since they also involve the reformation of a new executive management team and adjustments in strategic and operational priorities. In contrast, Ex Libris has had an exceptionally stable leadership team. Matti Shem Tov led Ex Libris through multiple ownership changes and now heads the entire ProQuest organization.

With a stable of aging product with aging technical architectures, Innovative recently developed a next-generation technology platform, branded as Inspire, to support a suite of new product offerings. The initial component is Inspire Discovery, with plans to eventually create additional components to form a complete library services platform. Given the nascent state of Inspire and mature and modern platforms already within the Ex Libris portfolio, it will be interesting to observe whether its development will continue under the new ownership arrangement.

Ex Libris has consistently followed a business strategy focused on development and expansion. The company has passed through multiple ownership arrangements and has leveraged the investments to create or acquire new products and services to fulfill anticipated demand in the library community.

Such a business strategy comes at a high financial cost. The typical private equity playbook prescribes minimizing development and maximizing sales and marketing. Ex Libris, in contrast, has devoted a much higher portion of its operations to product development. This approach may result in lower short-term profitability, but it has apparently worked well in terms of long-term value of the company and its ability to attract new investors. This strategy can also be interpreted as more beneficial to the library community since it has resulted in the development of new offerings rather than extending the life of legacy products.

**Table 1: Innovative Interfaces, Inc.**

	Sales Statistics for Library Systems Report				Installations in libraries.org			
	Total Contracts	Academic	Public	Special	Total Libraries	Facilities	Academic	Public
Polaris	557	38	497		1,539	3,723	49	1,356
Sierra	931	579	281	66	2,180	4,407	562	1,383
Millennium	358	226	50	79	321	818	145	53
	<b>1,846</b>	<b>843</b>	<b>828</b>	<b>145</b>	<b>4,040</b>	<b>8,948</b>	<b>756</b>	<b>2,792</b>



## Scale of the Acquisition

ProQuest ranks as one of the larger companies offering products and services to libraries. Innovative, though one of the larger companies in the ILS sphere, is relatively small compared to the entire ProQuest organization and is also much smaller in terms of customers and revenue than Ex Libris.

When counting active contracts to library organizations, Innovative has a customer base of about 1,846 compared to 4,656 for Ex Libris. These contract counts include those made with consortia, multilibrary systems, and standalone libraries, as reported for the annual *American Libraries* “Library Systems Report” by Innovative in 2017 and Ex Libris in 2018. The profiles of customers across the two companies also differ. Ex Libris has been more successful in projects for libraries and consortia with very large collections with premium financial value. Since many of Innovative’s contracts are for public libraries, the number of libraries and facilities involved are larger.

## Impact on the Academic Library Sector

That said, this acquisition strengthens Ex Libris’s position in the academic library sector. Among the Association for Research Libraries (ARL), for example, Ex Libris currently serves 85 out of the 125 members (65 on Alma, 6 on Aleph, and 14 on Voyager). Adding Innovative’s customers, Ex Libris’s presence among the ARL expands by an additional 19 (14 on Sierra, 4 on Millennium, and 1 on Polaris), resulting in 104 ARL members overall. It should be noted that in the global sphere of 20,000 higher educational institutions, its total market share is more modest.

Prior to this acquisition, academic libraries using traditional ILS products, such as Symphony and Horizon from SirsiDynix and Millennium and Sierra, were shifting to library services platforms, including Ex Libris Alma and OCLC WorldShare Management Services. With Innovative now part of Ex Libris, we can anticipate financial incentives and streamlined migration processes for libraries using Sierra and interested in moving to an LSP to transition to Alma. Likewise, libraries using Sierra along with EBSCO Discovery Services may be enticed to shift to Primo.

## ProQuest Enters the Public Library Sector

With this acquisition, ProQuest makes its first entry into the public library automation arena, though its content products are well represented in this sector. Ex Libris has previously been exclusively focused on technologies for academic libraries. The products it has launched more recently, including

Leganto and Esploro, expanded its focus beyond the library and into the broader institution. Public libraries have distinct strategic technology requirements.

Although a new area for the company, ProQuest enters the public library sector with some experience. While the Ex Libris ILS products were designed primarily for academic libraries, they have also been implemented by a substantial number of public and special libraries. Many large public library system and multi-type consortia have implemented Aleph. In 2018, Ex Libris reported that 558 of its 2,362 remaining implementations of Aleph were in public libraries.

Innovative holds about a 30 percent market share between its Sierra and Polaris ILS products.

## Impact of Consolidation

Consolidation in the library technology industry has been aggressive in the last couple of decades. It is important to note that while there has been a narrowing of vendors, the diminishment of products has been remarkably gentle. Very few products have been eliminated through business acquisitions that would not been discontinued by the incumbent companies. Legacy products, even when seriously outdated, follow a long trajectory as they are phased out in favor of modern products.

The consolidation of vendors in general, and this acquisition of Innovative by Ex Libris in particular, puts an enormous burden of responsibility for product development and support in the hands of a small number of companies. The key questions lie in whether the customer support and business infrastructure of these large companies can scale and provide better service than the incumbent companies and whether their development capacity will result in more capable products. As companies grow larger, they inevitably face challenges to deliver favorable customer support relative to smaller organizations often perceived as offering more of a personal touch with their library customers.

The ever more deeply consolidated library technology industry contrasts with previous phases characterized by a larger number of smaller companies. In such a state of fragmentations, the companies developed largely undifferentiated products through much smaller development teams. The standalone ILS companies struggle to develop products able keep up with the rapidly changing challenges faced by libraries. Much of the development energies of the ILS companies in the last decade have gone into the redevelopment of existing legacy products to move forward existing functionality into web-based interfaces and to enable APIs for systems integration.

We can anticipate additional consolidation in the library technology industry in the near-to-mid-term future. The age of the standalone ILS company may eventually pass in favor of a business environment where library technology is increasingly offered via companies with diverse portfolios of products and services. While the ILS continues to provide essential business infrastructure that libraries depend on for their daily operations, it can also be viewed as a diminishing component of their overall technical ecosystem. Ever more substantial value comes through additional software and content components delivering patron-facing services and that interconnect the library more deeply within their parent institutions, business partners, and peer institutions. While standalone companies generally address these needs through business partnerships, these capabilities can be organic within a large diversified services organization.

The library technology industry, not unlike most other business sectors, favors consolidation and large companies. A business environment where each product falls within a discrete company with its own executive management, financial administration, sales and marketing forces, and development teams involves far more costly overhead than the same products offered under a unified umbrella organization. In sparsely capitalized industries, such as a business sector serving libraries, the pressure to consolidate has reshaped the industry, including both for-profit and nonprofit organizations. Libraries naturally fear price increases as a result of reduced competition as well as less innovation and product volatility. These valid fears should also be seen in a context where the incumbent arrangements may not have been sustainable and were also not necessarily meeting library expectations for innovation and affordable pricing. Ex Libris executives state that they are committed to not

raising prices as a result of this acquisition.

Many small and mid-sized companies continue within the industry. These companies are often more narrowly focused and address segments of the library community not likely to interest the larger players. Examples include Keystone Systems, which serves libraries for the visually disabled and Biblionix, which provides the Apollo ILS for small public libraries.

## Implications for Open Source Products

We can also anticipate that the consolidation of Innovative within ProQuest will further spark interest in community-owned open source technologies. Libraries generally react negatively to perceived aggressive moves by vendors and especially to the narrowing of options. The acquisition of Sirsi-Dynix by Vista Equity Partners and its rash moves to sunset Taos and Horizon drove many libraries to open source alternatives in the mid-to-late 2000s. Open source ILS products like Koha and Evergreen have continued to see a moderate level of adoption, with a cadre of for-profit and nonprofit organizations providing support services meeting or exceeding those from vendors of proprietary products. The open source FOLIO library services platform has crossed important benchmarks and has been implemented in production by at least one library. A large handful of other libraries and consortia have implementations in progress, some pending next phases of development. The community spirit of open source software resonates with the strategies and values of many libraries. Even though open source today ranks as a small portion of the market, we can expect increased uptake in the mid-to-long-term future.

## Smart Libraries Q&A

Each issue Marshall Breeding responds to questions submitted by readers. Email questions to Samantha Imburgia, Managing Editor for ALA TechSource, at [simburgia@ala.org](mailto:simburgia@ala.org).

*What are the top 5 “new” technologies that librarians should be expected to answer questions about or see students using in the next few years?*

There are a few technologies that have become well established by today and are likely to have even greater impact on society in a mid-term future of five years. I see the following five

technologies as ones that potentially impact the way that individuals access information, which would be especially important for librarians and students to explore and understand.

1. **Internet of things (IoT):** The types of devices and products used in daily life that connect to the internet has proliferated already and will become even more ubiquitous in the future. This evolving ecosystem of interconnected devices offers its users new conveniences and personal benefits. Our homes are becoming smarter with automated thermostats, motion-sensitive lights, and security

monitoring, with new capabilities continually emerging. It's important to keep in mind that these smart devices are not just programmed for our convenience, but many also collect data for the benefit of their manufacturers. From a privacy and data literacy perspective, it is important to look beyond the superficial functions of these devices but to also be aware of how any data generated behind the scenes is generated, transmitted, and shared. Hopefully device manufacturers or distributors make this information available through their privacy disclosures and terms of service statements. Individuals with the technical skills may also want to analyze their actual communications streams to assess what data are collected and transmitted.

2. **Personal digital assistants**, especially smart speakers, fall within the internet of things category, but warrant special attention. Originally launched as “smart speakers,” new versions of these devices are equipped with video screens and cameras. These devices provide extraordinary convenience, with a voice-driven interface for answering questions, playing music or other media, and for controlling devices. The privacy concerns of these devices are obvious since they have the capability to listen in—or watch—any person or activity within their range. The major devices in use today, including Google Home and Amazon Alexa, provide clear statements regarding when these devices are actively listening, what is recorded, and what is transmitted to their servers. In the future, we can expect these devices to be enhanced with even greater capabilities. I anticipate that many tasks now performed on personal computers, tablets, and phones will shift on to these devices. As these devices gain greater power and penetrate into more homes, workplaces, and public settings, it will be important to likewise understand whether the rules related to the transmission of personal data and behaviors change from those in place today.
3. **Big Data and analytics** will become an even more powerful aspect of technology in the next five years. Organizations will increasingly rely on data collected about their customers, clients, or other stakeholders to shape their services. The consumer arena exploits big data at a massive scale today, and libraries are joining the fray. The body of big data includes that generated by our phones and computers, by in-person buying and browsing, and

increasingly through IoT devices and personal digital assistants. Librarians in the future will increasingly need to understand how to incorporate big data into their own services as well as be vigilant regarding how patron interactions with information resources and other library services might be channeled into the big data arena.

4. **Biometrics, especially facial recognition**, have become incredibly reliable in recent years. These technologies are increasingly replacing passwords and other mechanisms for authentication and authorization. Phones, tablets, and computers routinely use facial recognition for sign-on. Airports and other secure facilities increasingly use facial recognition as one of the methods for controlling access. This technology trend will only become more powerful and prevalent in the future. Librarians will need to learn to take advantage of this technology as this becomes an expected means of access to systems that otherwise would require a password or pin. In a library context, however, it would be essential to ensure that using biometrics for authentication does not compromise patron privacy.
5. **Deep fakes**, where video, or other media, can be convincingly altered has become possible today through advances in digital animation technologies. The tools for creating these deep fakes are widely available and do not necessarily require deep expertise. “Fake news,” a well-known issue today, means that it has become essential to validate the truthfulness of news items we read on the web and other media. Deep fakes mean that we can't even trust our eyes to know if a person actually said what is shown in a video. As the technologies for forging content become more powerful, it will be essential for librarians and other information professionals to give guidance regarding what content can be trusted.

These five technologies represent some obvious examples of the roles that librarians might play in the future in an incredibly complex information environment of interconnected systems and data. These new roles will likewise shape the skills that librarians will need to develop to give well-informed guidance to the individuals and communities they serve. Mastery of these technologies will enable libraries to take advantage of them when appropriate as well as to find ways to mitigate impact when they run counter to library values.



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