

# Looking Ahead:

## Technology Trends supporting Academic Library Cooperation

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May, 11 2021

GIL Users Group Meeting

# Abstract

- Academic libraries face incredible challenges following a year of disruption by a global pandemic in addition to adapting to longer-term trends including pressures with funding, rising expectations in service models, and changes in scholarly publishing. Large-scale projects such as GALILEO and GIL, enable libraries to increase the impact of their resources through resource sharing and collaborative workflows. Ongoing trends and developments in the library technology sector present important opportunities to strengthen the infrastructure in support of institutional priorities and consortial collaboration. Breeding will present an overview of the technology, product and business trends in the academic library sector, including proprietary and open source alternatives. The presentation draws on data collected through Breeding's ongoing research in the library technology industry.

# Library Technology Guides

## Documents, Databases, News, and Commentary

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**Library Technology Guides** provides comprehensive and objective information surrounding the many different types of technology products and services used by libraries. It covers the organizations that develop and support library-oriented software and systems. The site offers extensive databases and document repositories to assist libraries as they consider new systems and is an essential resource for professionals in the field to stay current with new developments and trends. Relevant news items are posted daily on Twitter:

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### Featured Content

#### Smarter Libraries through Technology: Trustworthiness and Competition



The news of the Federal Trade Commission's closing its review of ProQuest's acquisition of Innovative Interfaces evokes questions regarding competitiveness in the library technology industry. Throughout my career, I have observed a continual succession of business acquisitions and ownership changes among the companies involved in providing technology products to libraries. The net impact of these events can be seen in the current business environment. Responsibility for strategic technology products is concentrated in a relatively small number of large organizations, though there are definitely important players in the mid-sized and small tiers of the industry. Recent transactions have attracted considerable attention. While the consolidation of the industry is not new, the pace is unprecedented. We should also assume that this process will continue with other companies in the library tech industry are due for ownership changes and acquisitions in the next year or so. While delays in moves of ownership remain possible, it is more realistic to expect additional business concentration. (Smart Libraries Newsletter, December 2020)

#### SOLUS Expands through Acquisition of Boopsie

SOLUS has acquired the Boopsie Mobile division from Demco, Inc. The deal strengthens SOLUS's presence in the global library market. Boopsie was one of the pioneers of mobile technology in libraries, though its presence has since been eclipsed by SOLUS and other providers. The technology platform developed by Boopsie was quite advanced and forward-looking when it was launched in 2005, though it may not necessarily be optimal for the current generation of patron-facing mobile interfaces. This business event provides libraries using Boopsie's products an opportunity to shift to more recently developed technologies provided by a vendor with established success in the library mobile technology sector. While consistent with the pattern of consolidation within a market niche, it runs a bit counter to the trend for smaller specialized companies to be acquired by large businesses with diverse product portfolios. (Smart Libraries Newsletter, November 2020)

#### OCLC Acquires Capira Technologies, Strengthening its Mobile Offerings

OCLC has acquired Capira Technologies, a small firm specializing in mobile apps for libraries. In a deal concluded on July 1, 2020, OCLC assumes responsibility for the company, including the development and support of its existing mobile apps. The four employees of Capira Technology also joined OCLC, including company founder Michael Berse. (Smart Libraries Newsletter, October 2020)

#### Library Systems Report 2020: Fresh opportunities amid consolidation



### Industry News

Wednesday Mar 17, 2021 [RSS](#)

#### Full Automation News Report

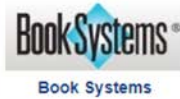
20 most recent items:

March 17, 2021. Kanopy Partners with Schweitzer to provide streaming video services to libraries throughout Germany, Austria and Switzerland. Kanopy has secured a strategic partnership with Schweitzer Fachinformation, a leading reseller of library products and services. Under terms of the agreement, Schweitzer will promote Kanopy's str ... <<more>>

March 16, 2021. El opac multidispositivo, una de las características más destacadas del nuevo AbsysNet 2.3. Cada vez está más cerca la nueva versión de AbsysNet cargada de nuevas funcionalidades y características. Una de las principales novedades de AbsysNet 2.3 afecta directamente al mOpac, el cual deja at ... <<more>>

March 16, 2021. LibraryWorld announces new integrated library system called WikiLibrary. WikiLibrary Basic is available immediately: designed for smaller libraries requiring professional features found in larger systems. It's easy to use and packed with powerful features that make managin ... <<more>>

March 16, 2021. RBmedia launches new Spanish-Language Audio Brand, BookaVivo. RBmedia, the largest audiobook producer in the world, today unveiled its new Spanish-language audio brand, BookaVivo. The new brand will be home to RBmedia's recently acquired Booka audiobook publi ... <<more>>





### Resource Management Products (ILS or LSP)



## Executive Leadership



**Oded Scharfstein**  
President



**Dvir Hoffman**  
Corporate Vice  
President, Resource  
Management Solutions



**Yaniv Cohen**  
Corporate Vice  
President, Global  
Professional Services



**Shlomi Kringel**  
Corporate Vice President  
for Learning and  
Research Solutions



**Ofer Mosseri**  
Corporate Vice President  
and General Manager  
EMEA



**Ido Peled**  
Corporate Vice  
President, Mobile  
Campus Solutions



**Barak Rozenblat**  
Vice President for Cloud  
Services at Ex Libris



**Yaniv Alus**  
Vice President Finance



**Jane Burke**  
Vice President for



**Eric Hines**  
President, North America



**Omri Gerson**  
Vice President for

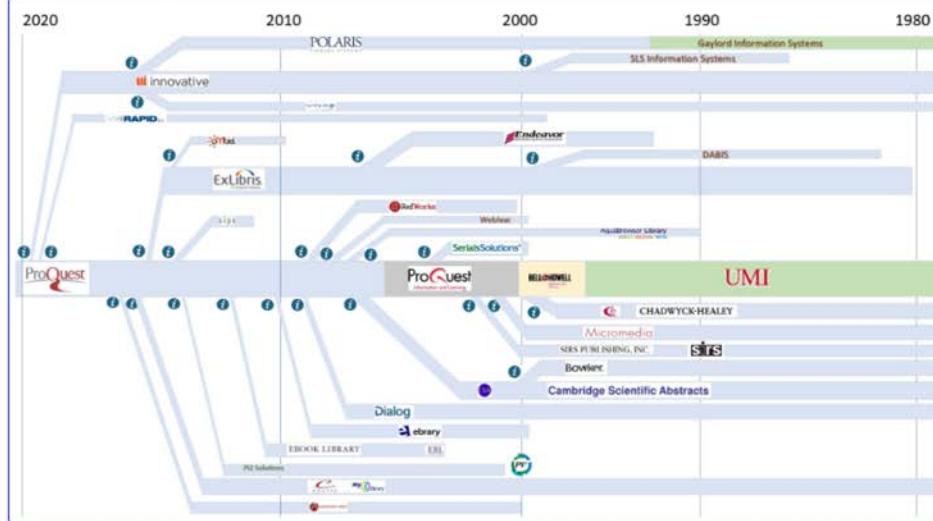


**Sarit Olamy**  
Vice President, Human

## Company Ownership

Ex Libris is a wholly owned subsidiary of ProQuest, which is owned by Cambridge Information Group and Goldman Sachs.

## Mergers and Acquisitions



### Personnel employed

[Data source: statistics supplied for the annual Library Systems Report or from public information]

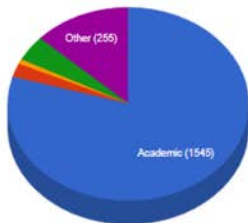
Company	Year	Development	Support	Sales	Admin	Other	Total
Ex Libris	2020	283	465	149	76		973
Ex Libris	2019	283	464	153	80		980
Ex Libris	2018	268	446	140	75		930
Ex Libris	2017	341	305	125	52	12	835
Ex Libris	2016	327	304	125	52	22	830
Ex Libris	2015	229	255	70	50	11	615
Ex Libris	2014	208	234	65	47	11	565
Ex Libris	2013	194	222	60	46	14	536
Ex Libris	2012	189	222	53	46	12	522
Ex Libris	2011	170	231	54	44	13	512
Ex Libris	2010	174	223	53	38	16	504
Ex Libris	2009	165	206	52	32	12	467
Ex Libris	2008	161	198	55	34	19	467
Ex Libris	2007	129	187	53	49		418
Ex Libris	2006	127	160	42	46	18	393
Ex Libris	2005	57	93	39	23	49	261
Ex Libris	2004	50	82	37	22	42	233
Ex Libris	2003	58	91	34	32		215
Ex Libris	2002	51	110	24	11	10	206

## Documents or articles featuring Ex Libris

**Breeding, Marshall** *New President at Ex Libris*. January 2021. *Smart Libraries Newsletter*. ProQuest has named Oded Scharfstein the new president of Ex Libris, effective January 2021. He will succeed Bar Veinstein. Ex Libris has been a portfolio company of ProQuest since October 2015.

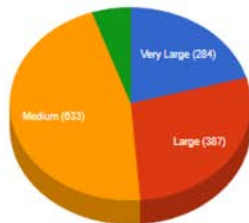
**Breeding, Marshall.** *Smart Libraries Q&A*. January 2021. *Smart Libraries Newsletter*. With the current ILS market constricting into only a few players for academic libraries, how sustainable for a long-term strategy is the current subscription pricing model of 5% annual increases? Especially when a library's ILS consumes a large block of operations budgets, which don't grow at that pace, if at all. Libraries can cut serials and book budgets, but there is little flexibility for an ILS. You either have one or you don't. Do you see a potential "crash" where the same libraries who migrated to Alma or World-Share a few years ago are forced to migrate to open source systems, given the projected declines in higher education in general? Also, what do you recommend as an appropriate ratio between the annual cost of a library's inventory management system

Distribution of 1,944 Alma implementations by Type



More Detailed View

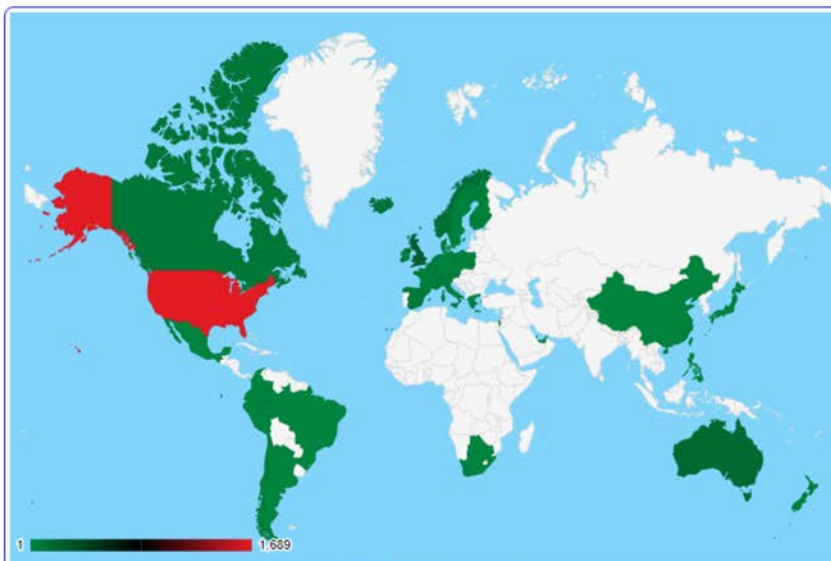
Distribution of 1,944 Alma implementations by Collection Size



More Detailed View

## Distribution of Alma sites by Country

[Data source: statistics derived from the libraries.org directory of libraries]

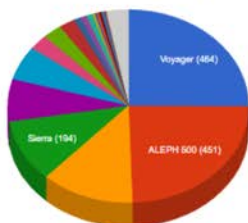


View Map of Library Installations

## System migration patterns for Alma

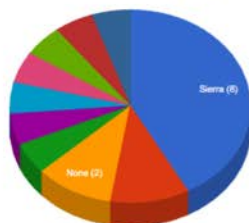
[Data source: statistics derived from the libraries.org directory of libraries]

Previous systems used by the libraries migrating to Alma



More Detailed View

New systems selected by the 19 libraries migrating away from Alma



More Detailed View

Sales and Installation Statistics for Alma

Product Name	CompanyName	Product Type	Year	Contracts	Libraries	Installed
Alma	Ex Libris	Integrated Library System	2020	114	177	2037
Alma	Ex Libris	Integrated Library System	2019	102	164	1769
Alma	Ex Libris	Integrated Library System	2018	115	448	1543
Alma	Ex Libris	Integrated Library System	2017	116	266	1095
Alma	Ex Libris	Integrated Library System	2016	132	203	829
Alma	Ex Libris	Integrated Library System	2015	88	220	626
Alma	Ex Libris	Integrated Library System	2014	43	77	406
Alma	Ex Libris	Integrated Library System	2013	31	170	329
Alma	Ex Libris	Integrated Library System	2012	17	71	126
Alma	Ex Libris	Integrated Library System	2011	24	24	55

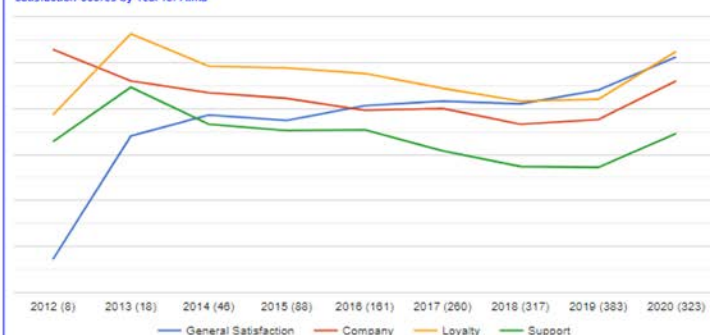
View detailed annual sales report for Alma

## Alma Satisfaction Ratings

[Data source: International Survey of Library Automation]

2019 Alma Responses by Sector													
Alma	all	Academic						Public			School	Consortium	
		n	avg	n	avg	n	avg	n	avg	n			avg
SatisfactionLevelILS	375	6.70	91	6.77	124	6.65	93	6.80	0	0	0	12	6.92
ILSFunctionality	376	6.88	92	7.11	124	6.95	93	6.83	0	0	0	12	7.33
PrintFunctionality	374	6.97	91	7.22	124	6.94	93	6.95	0	0	0	12	6.92
ElectronicFunctionality	372	6.65	90	6.53	123	6.85	93	6.54	0	0	0	12	6.92
SatisfactionCustomerSupport	375	5.86	93	6.02	123	5.88	92	5.73	0	0	0	12	5.58
CompanyLoyalty	371	6.60	93	6.52	122	6.72	91	6.67	0	0	0	12	7.17

Satisfaction Scores by Year for Alma



View Full Product Report

## Documents or articles featuring Alma

**Breeding, Marshall.** Ex Libris Completes Sweep of Higher Education in California. February 2020. *Smart Libraries Newsletter*. Ex Libris has now sold its Alma library services platform to all three of the public higher educational systems in California. A recent announcement from the Systemwide Integrated Library System taskforce of the University of California libraries announced the final selection of Alma and Primo from Ex Libris, now part of ProQuest. The University of California system joins the California State University System and the Consortium of Community Colleges in the selection of Alma to provide shared infrastructure for the management of their collections and Primo for discovery and access. Each of these projects on its own would be considered massive; together these three systems represent an unprecedented level of involvement by the libraries in a single governmental jurisdiction with a single vendor.

**Breeding, Marshall.** Update on Ex Libris Alma. December 2019. *Smart Libraries Newsletter*. The Alma library services platform (LSP) from Ex Libris, now part of ProQuest, continues to make gains in the academic and research library sector. The product's steady stream of product releases deployed monthly and new implementations by library have become routine. The dominance of Alma in this sector must be seen as the backdrop or context for other events that spark interest but tend to have smaller impact. Alma has seen strong and steady adoption since its initial implementations in 2012, including some of the largest university library systems and regional or national consortia.

**Breeding, Marshall.** A Progress Report on Library Services Platforms. August 2016. *Smart Libraries Newsletter*. Although each of the products offers its distinct approach to functionality and technology infrastructure, there are a set of products that have diverged significantly from the well-established category of ILSs. Many of these characteristics arise out of the current technology paradigm centered on services deployed entirely through the Web, oriented to collaboration and social interactions, and powered by massive data stores.

**Breeding, Marshall.** Shared Infrastructure Projects Gain Momentum. September 2015. *Smart Libraries Newsletter*. Recent months have



[illegible]



# Library Technology Industry

Recent Trends and Events

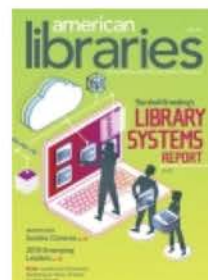




**Library Systems Report  
2021: Advancing library  
technologies in  
challenging times**



**Library Systems Report  
2020: Fresh  
opportunities amid  
consolidation  
[view on American  
Libraries]**



**Library Systems Report  
2019: Cycles of  
innovation  
[view on American  
Libraries]**



**Library Systems Report  
2018: New technologies  
enable an expanded  
vision of library  
services  
[view on American  
Libraries]**



**Library Systems Report  
2017: Competing  
visions for technology,  
openness, and  
workflow  
[view on American  
Libraries]**



**Library Systems Report  
2016: Power plays  
[view on American  
Libraries]**



**Library Systems Report  
2015: Operationalizing  
Innovation  
[view on American  
Libraries]**



**Library Systems Report  
2014: Competition and  
strategic cooperation  
[view on American  
Libraries]**

# Library Technology Industry Reports

## American Libraries

- 2014: Strategic Competition and Cooperation
- 2015: Operationalizing Innovation
- 2016: Power Plays
- 2017: Competing visions for Technology, openness, workflows
- 2018: New technologies enable an expanded vision of library services
- 2019: Cycles of Innovation
- 2020: Fresh opportunities amid consolidation
- 2021: Advancing library technologies through challenging times

## Library Journal

- 2013: Rush to Innovate
- 2012: Agents of Change
- 2011: New Frontier
- 2010: New Models, Core Systems
- 2009: Investing in the Future
- 2008: Opportunity out of turmoil
- 2007: An industry redefined
- 2006: Reshuffling the deck
- 2005: Gradual evolution
- 2004: Migration down, innovation up
- 2003: The competition heats up
- 2002: Capturing the migrating customer



Library vendors readily provided support during the pandemic, especially through rapid development or implementation of functionality that supported newly instituted workflows, such as online selection and checkout of materials and touchless curbside pickup. Abrupt building closures prompted a need to update policy calendars controlling due dates and notices, along with other operational changes. Almost all vendors described delivering system interventions or functional enhancements to assist their customers during this challenging period. Many of these changes will have enduring value. For some libraries, the crisis accelerated transitions to increased digital operations already under way.

In addition to changes in system policies and operations, some vendors mentioned other specific—and unprecedented—measures offered in support of their clients during the pandemic. Biblionix not only implemented 16 features designed to help libraries adapt to changes in lending and workflow but also offered financial relief to its clients. Since many experienced reduced lending during the pandemic, Biblionix lowered the fees for Apollo ILS according to use levels, an unusual practice in the library technology industry. Innovative Interfaces made its Circa Sierra mobile app free to libraries for a year to assist with curbside services. Ex Libris launched the “Best Practices for the Ex Libris Community during COVID- 19” initiative to provide guidance on building closures and reopenings. Soutron Global developed a Pandemic Recovery Program, providing customers with an extended support package, and donated 10% of its revenue to a financial assistance fund designated for Soutron clients. OCLC supported libraries implementing curbside pickup services through specialized workflows provided through its CapiraCurbside mobile app.

### Solidifying a consolidated industry

Business acquisitions spanning multiple decades have consolidated the library technology industry into one dominated by a handful of large companies. Organizations such as EBSCO Information Services, Follett, OCLC, and ProQuest have assembled diverse portfolios of products, some of which complement other content offerings and services not covered in this report. These organizations are massive: EBSCO Information Services employs 2,852 globally. Across its businesses, ProQuest has a workforce of 2,740—including 1,461 employed at the parent company and the rest via subsidiaries including Bowker, Ex Libris, and Innovative. Follett, with \$3 billion in revenue in 2020, employs 1,758 (including its subsidiaries). OCLC reports 1,238 total personnel. The remaining organizations that participated in this report employ a combined total of 1,316 people, reflecting the economic clout of the top tier.

Events of the last year furthered the industry’s consolidation. The acquisition of Innovative Interfaces by ProQuest at the beginning of 2020 triggered a review by the Federal Trade Commission (FTC), the key US governmental regulator that challenges anticompetitive mergers and acquisitions. The FTC initiated its review in February and concluded it in November without imposing any restrictions.

While under active review, ProQuest agreed to operate Innovative as an independent company and separate its business and product activities. Going forward, ProQuest will operate Innovative as an individual business unit, parallel to Ex Libris. Each company will develop and support its own products, though they are no longer restricted from exploring synergies.

The FTC not imposing divestments suggests that company mergers within the industry have so far not crossed legal anticompetitive thresholds. Though product and vendor choices are narrow, libraries continue to have alternatives when procuring major technology systems. Even in the academic and school sectors mostly dominated by large companies, smaller and niche players—as well as open source alternatives—represent viable competition. The outcome of ProQuest’s FTC review validates the reality of a consolidated industry and may signal tolerance of other bold moves.

<https://americanlibrariesmagazine.org/2021/05/03/2021-library-systems-report>

# 2021 Library Systems Report

## Advancing library technologies in challenging times

By Marshall Breeding | May 3, 2021

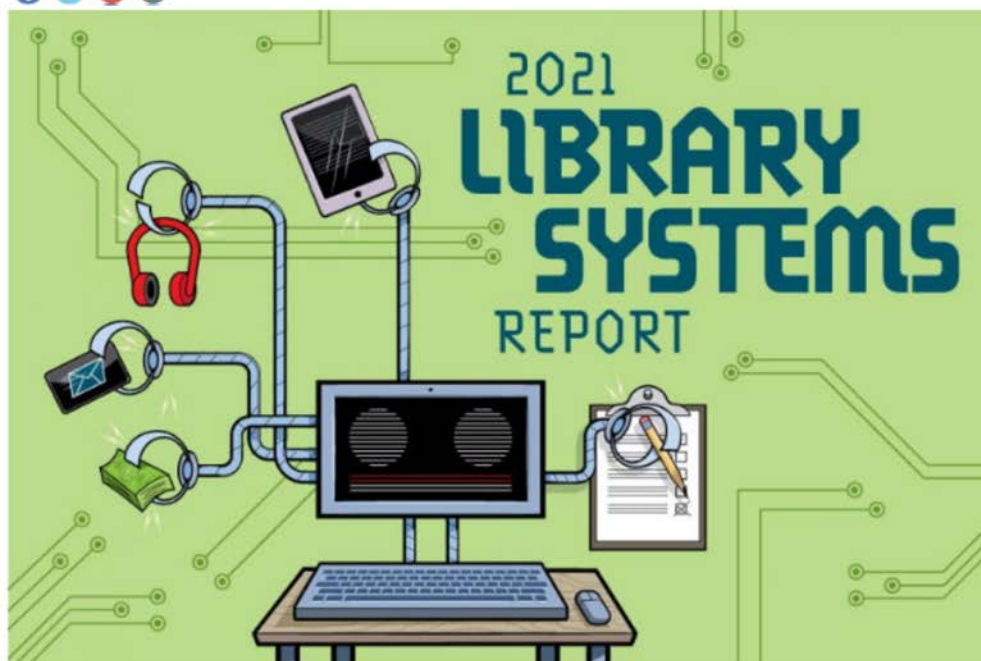


Illustration: Tom Deje

In a year complicated by a global pandemic, the community of vendors providing technologies to libraries made important strides to meet pressing needs and make ongoing progress in their longer-term initiatives. Though the pandemic disrupted library services—as well as funding—in 2020, concerted efforts were made to fulfill the demands of users to the extent possible. Almost all vendors made sharp turns to expand access to digital collections and services in order to compensate for diminished access to physical materials.



# Major 2019-2020 Events

## 2019

- Atairos invests in ProQuest
- ProQuest acquires Innovative
- Ex Libris acquires RapidILL
- Volaris Group acquires BiblioCommons
- OCLC sells QuestionPoint to Springshare
- Axiell acquires Bibbits
- DuraSpace merges into LYRASIS
- NFAIS merges into NISO

## 2020

- FTC review of Innovative acquisition
- OCLC acquires Capira Technologies
- Axiell acquires Musoft
- Axiell acquires CultureConnect
- EBSCO acquires Zepheira

# Major events in the 2021 Report

- Vendors and open source projects rally to deliver tools and technologies for library closures and re-openings.
- ProQuest clears FTC Review of acquisition of Innovative
- FOLIO moves into production
- Innovative launches Vega platform for discovery and patron engagement
- Ex Libris continues to report strong sales of Alma and related products

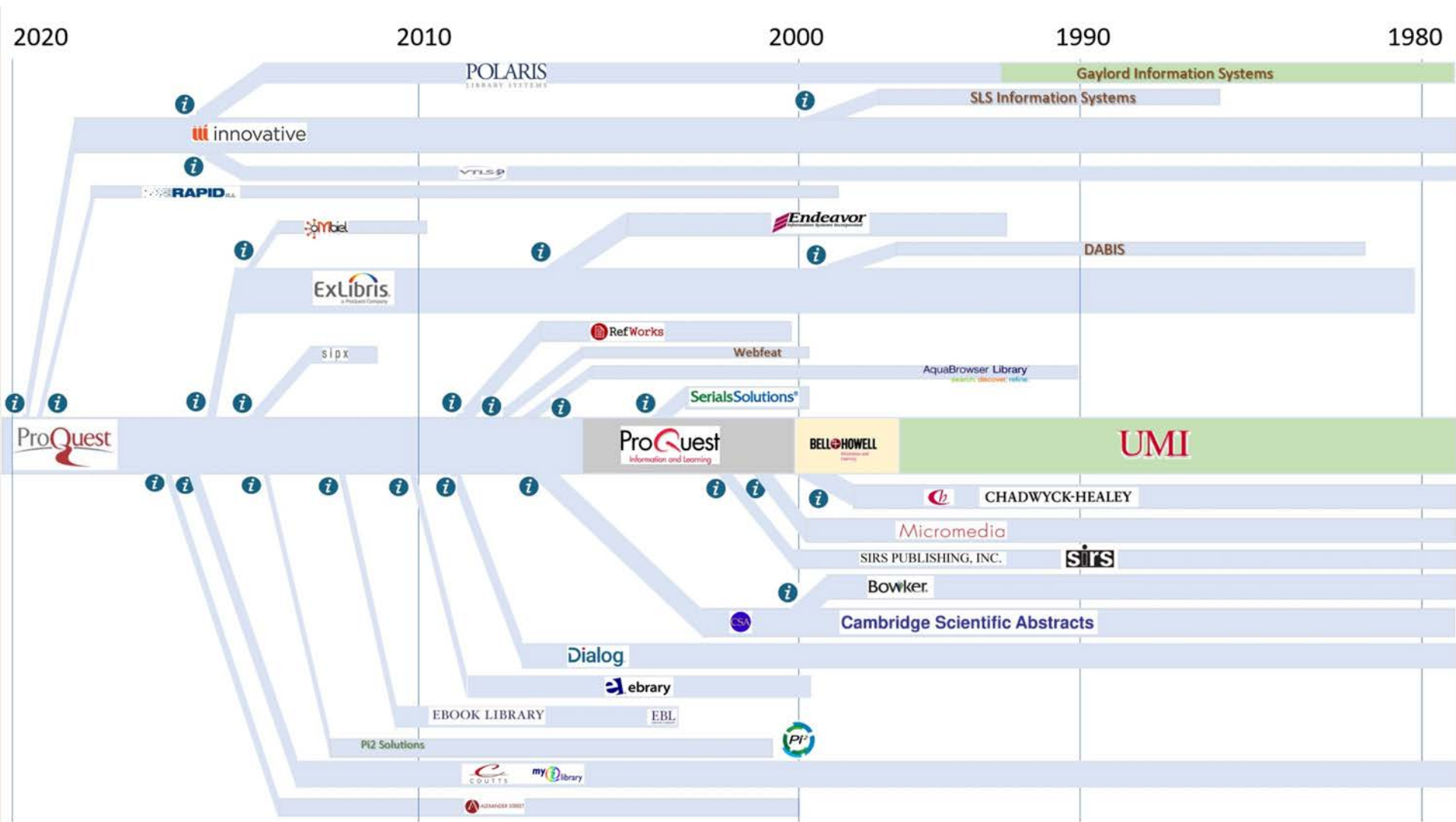
# Recent Business Events

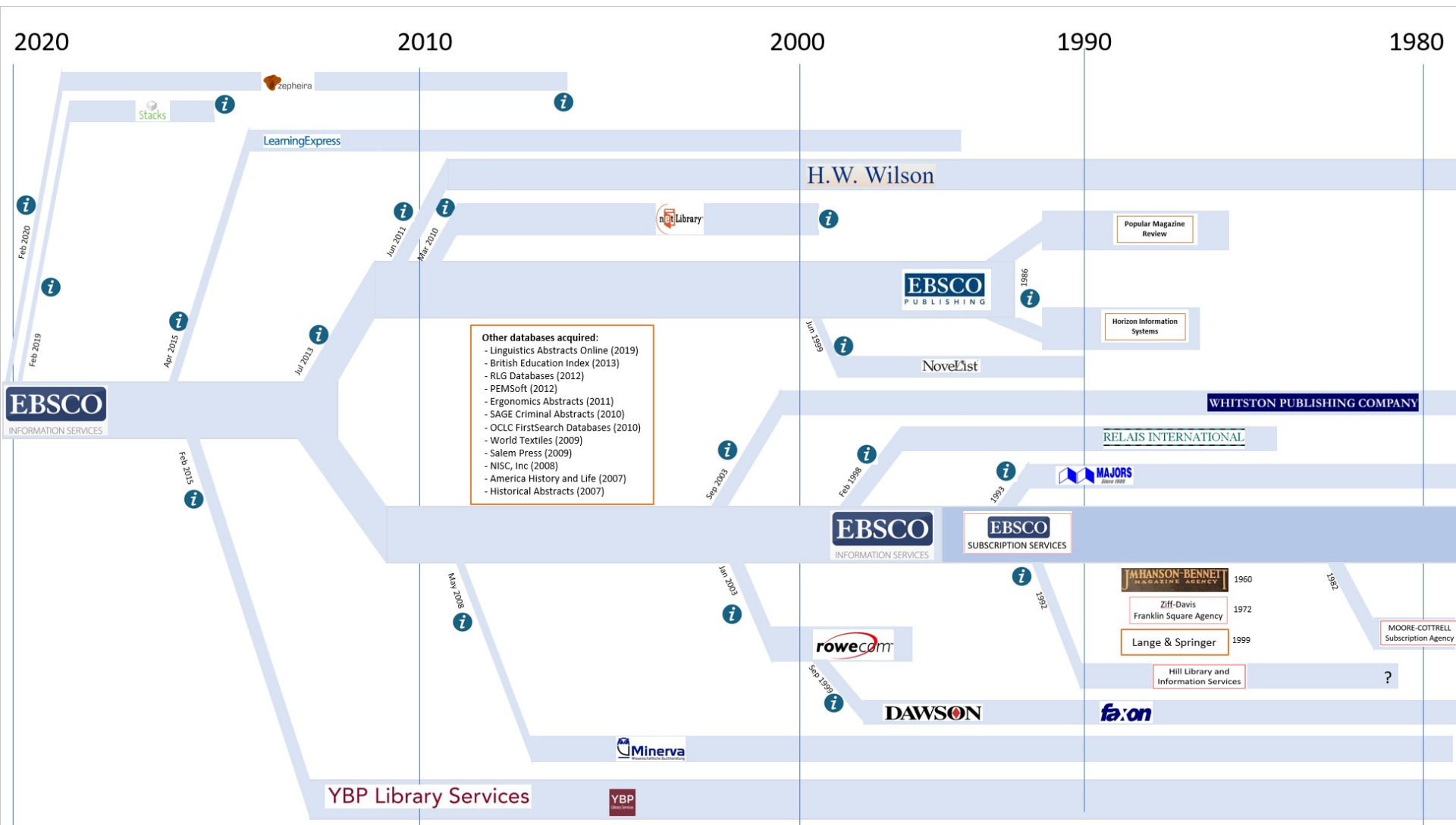
- Atairos invests in ProQuest (May 2019)
- ProQuest acquires Ex Libris (Dec 2015)
- Ex Libris acquires RapidILL (Jun 2019)
- ProQuest acquires Innovative (Jan 2020)
- Volaris Group acquires BiblioCommons
- EBSCO acquires Zepheira (Feb 2020)
- OCLC acquires Capira Technologies (Jul 2020)



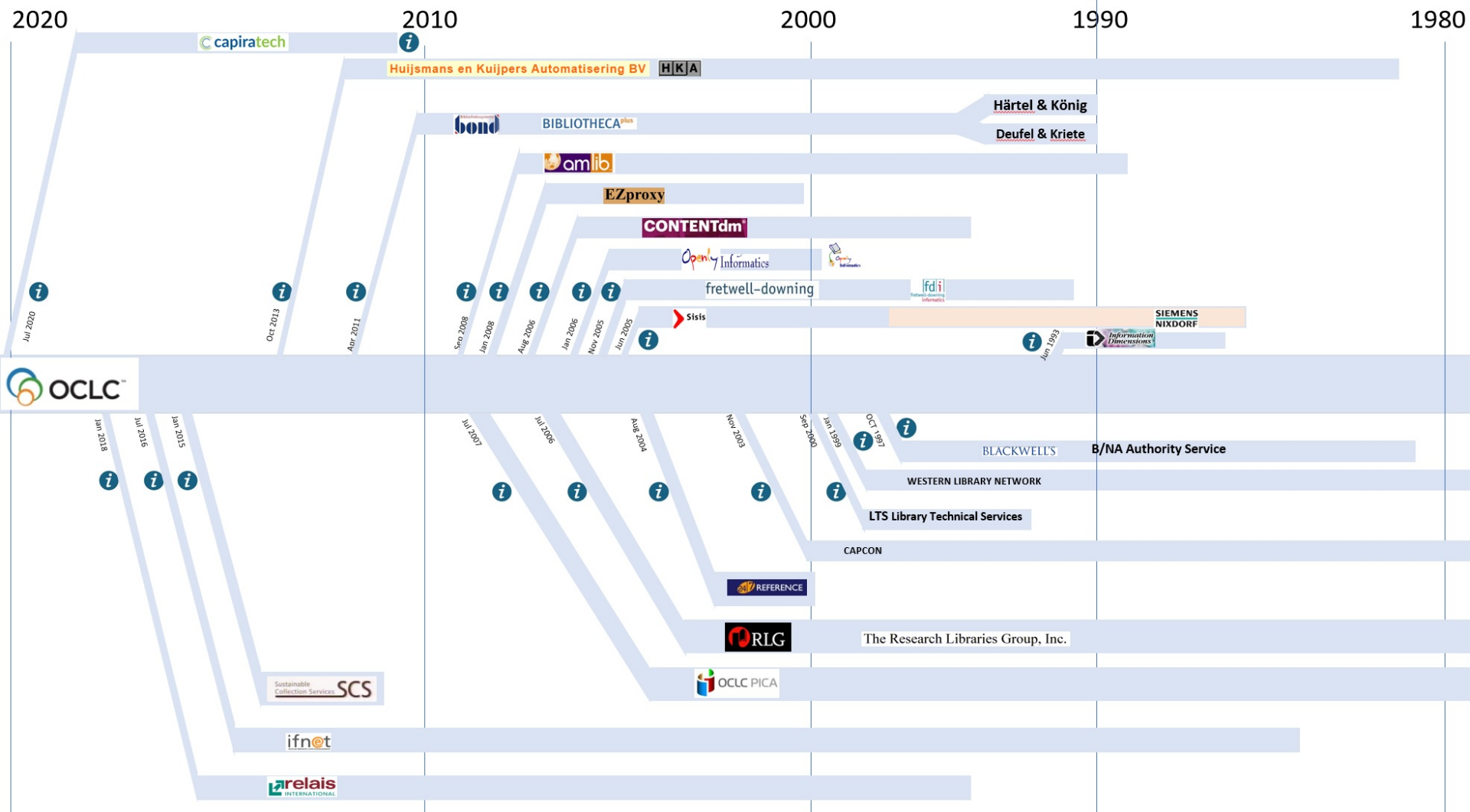
# Consolidation: deep and wide

- Horizontal consolidation: M&A among ILS and RFID companies
  - SirsiDynix
  - Bibliotheca
- Vertical Consolidation: Acquisition into top-level companies
  - Content + Technology + Services
  - ProQuest: Acquisition of Ex Libris, Innovative, Serials Solutions
  - EBSCO: FOLIO, Stacks, etc
  - Follett: Acquisition of Baker & Taylor



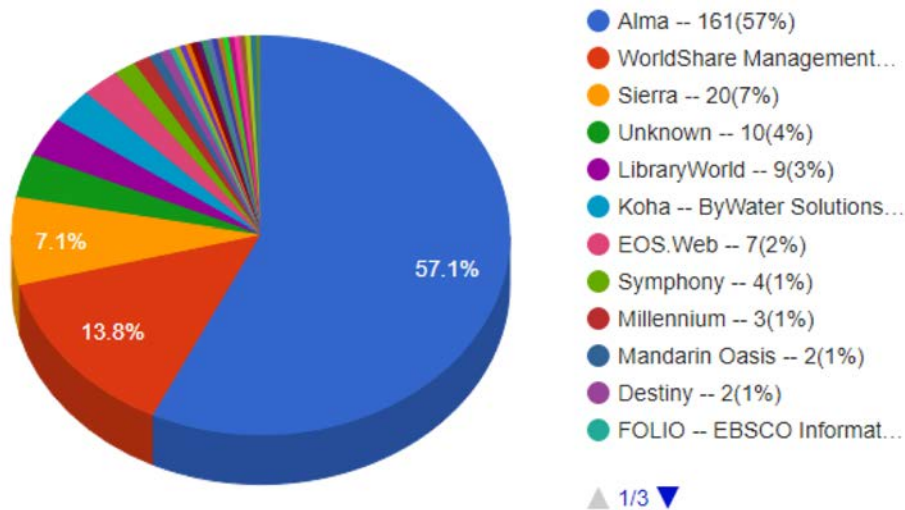




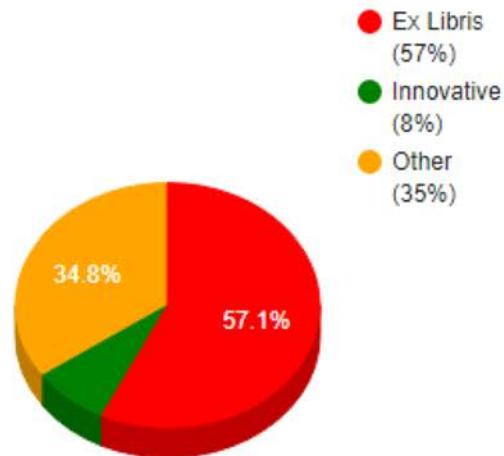


# All Academic Libraries in the United States

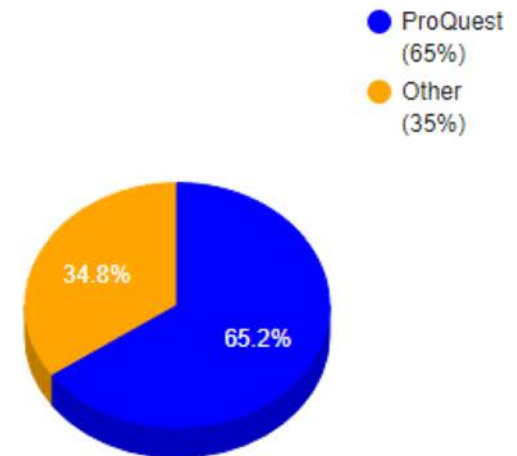
ILS implementations in Academic Libraries in California, United States by Library Organizations



Ex Libris / Innovative Market Share

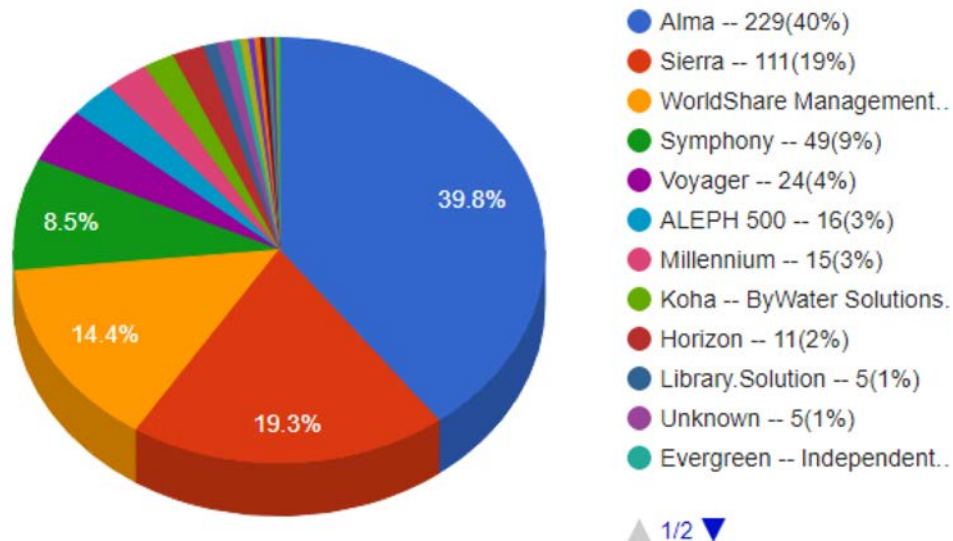


Total ProQuest Market Share

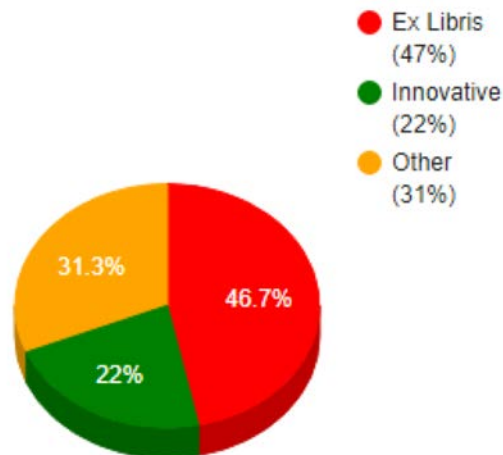


# Mid-Sized Academic Libraries in the United States

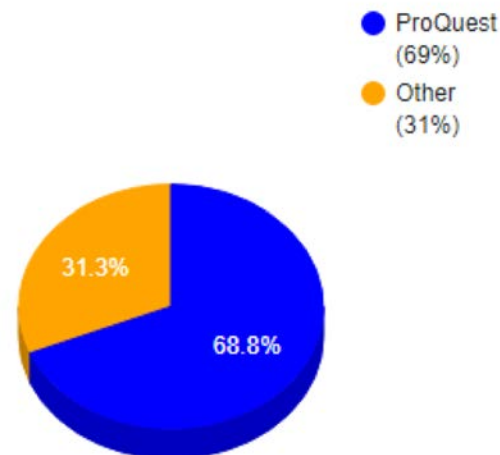
ILS implementations in Academic Libraries in United States by Library Organizations



Ex Libris / Innovative Market Share



Total ProQuest Market Share







# Open Source Opportunities

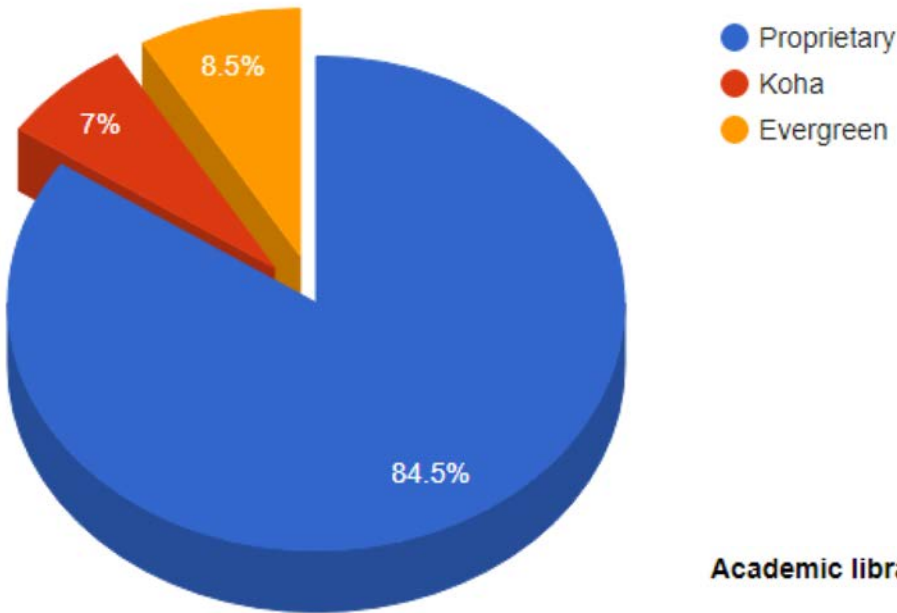
# Strategic Technology

- ❑ What to build?
- ❑ What to buy?
- ❑ Focus resources on technology strategies that add value and impact to the institution
- ❑ Open source and proprietary software have been implemented successfully in library systems
- ❑ Innovation? Library systems enable efficiency so that organizations can concentrate on delivering innovative services.

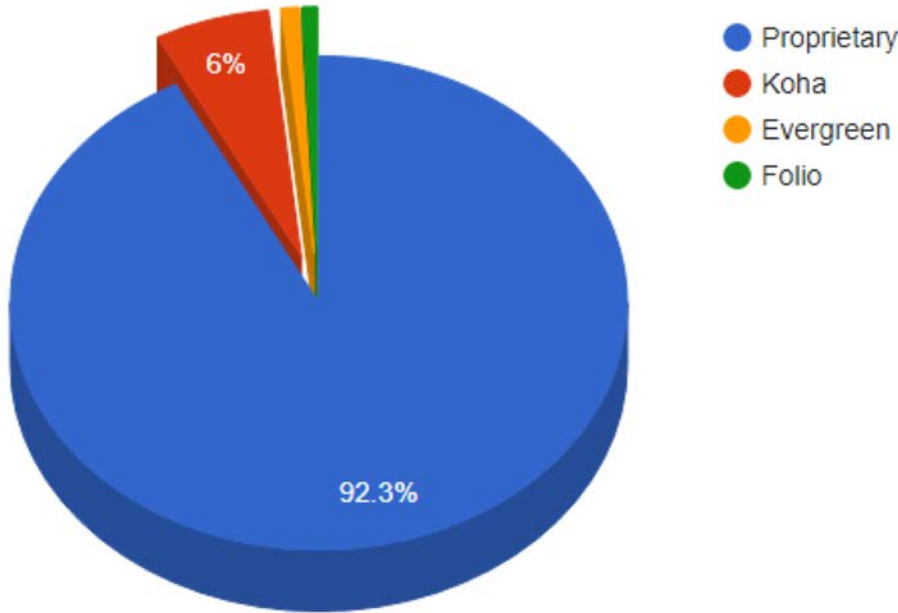
# Major Open Source products

- ❑ Koha: traditional ILS, mostly standalone institutions, but some public library consortia
- ❑ Evergreen: public library consortia
- ❑ FOLIO: library services platform for academic libraries
- ❑ VuFind: discovery interface (sans index)
- ❑ Blacklight (discovery interface (sans index)
- ❑ DSpace / Fedora institutional repositories
- ❑ SimplyE: ebook management and delivery platform

Public libraries in United States (Open source: 15.5%)



Academic libraries in United States (Open source: 7.7%)



# Open Source opportunities

- With commercial support services, organizations do not need more technical expertise compared to proprietary solutions
- Options to influence product design and contribute to development
- Possibilities for local customized deployment
- May need to assemble consortial infrastructure from multiple open source and proprietary components
  - ▣ FOLIO + EDS + Knowledge base
  - ▣ Koha + CORAL + Discovery + Knowledgebase



# Koha implementations: ByWater Solutions

Product Name	CompanyName	Product Type	Year	Contracts	Libraries	Installed
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2020	44	44	1340
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2019	38	75	1296
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2018	43	225	1221
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2017	47	54	996
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2016	70	91	949
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2015	40	76	919
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2014	53	94	879
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2013	68	150	785
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2012	34	40	554
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2011	54	231	446
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2010	40	155	167
Koha -- ByWater Solutions	ByWater Solutions	Integrated Library System	2009	7	77	78

# Map of Libraries: the library automation system used is Koha





This map displays the geographical distribution of red and green location pins across North America. The pins are heavily clustered in the western United States, particularly in the Pacific Northwest (Washington, Oregon, and California), and in the central US, especially in the Great Lakes region (Michigan, Wisconsin, Illinois, Indiana, and Ohio). There are also significant clusters in the Northeast (New York, Pennsylvania, and New Jersey) and along the West Coast (California). The map includes labels for major cities like Los Angeles, San Francisco, New York, and Chicago, as well as state and provincial boundaries. The Google logo is present in the bottom left corner.

# EBSCO FOLIO

- EBSCO offers diverse content and technology products and services
- EBSCO Discovery Services most widely deployed index-based discovery service globally
- Enters ILS space not by acquisition but through new open source initiative
- Multiple service providers: EBSCO, Index Data, ByWater Solutions
- EBSCO FOLIO includes EDS integration, eresource knowledgebase, hosting, and support services.

# FOLIO Status

- Initial version of FOLIO complete
  - ▣ Substantial (dominant?) funding from EBSCO
- Governance via the Open Library Foundation
- Recent changes for FOLIO SMLLC (Single Members Limited Liability Company) to manage project funds and resources under OLF
- Ongoing development to be shared between EBSCO and other stakeholders
- Sustainability is a shared responsibility



# FOLIO Implementations

## Print + Electronic

- ❑ Chalmers University
- ❑ Lehigh University
- ❑ Saint Vincent College
- ❑ Washington and Jefferson College
- ❑ Michigan State University
- ❑ National Central Library of Florence
- ❑ University of North Alabama
- ❑ Warner University
- ❑ University of Alabama

## Electronic Only

- ❑ Cornell University
- ❑ Leibniz University
- ❑ Duke University

# FOLIO implementation planned

- Caltech Library
- Oberlin Group
  - ▣ Drew University
  - ▣ Skidmore College
  - ▣ Lafayette College
- University of Zaragoza
- Texas A&M University
- University of Chicago (from Kuali OLE)
- Spokane Public Library
- Shanghai Library

# 2020 Migration Intentions

2020 Migration Intentions

Current ILS	Resp	Shopping	Percent	Academic	Alma	WorldShare	Polaris	Sierra	Symphony	FOLIO	Koha	Evergreen	TIND
ALEPH 500	40	26	65.0	18	20	3	0	0	0	6	1	0	1
Horizon	82	28	34.1	10	8	5	3	0	5	4	1	2	0
Library.Solution	58	6	10.3	2	0	0	2	0	0	0	2	0	0
Millennium	16	14	87.5	10	6	3	1	2	0	4	1	0	0
Sierra	299	94	31.4	54	27	12	3	3	7	38	10	2	2
Polaris	163	12	7.4	0	0	0	1	0	1	0	2	2	0
Symphony	331	58	17.5	26	9	5	6	0	2	9	14	2	2
Voyager	32	24	75.0	17	11	4	0	1	0	6	3	0	0
Any Product					104	40	18	8	21	88	54	11	5

# Academic Discovery Trends

- Discovery does not drive resource management selections
  - ▣ Libraries seem generally willing to accept discovery service provided with their resource management system
  - ▣ Library-provided discovery services see limited use by students/researchers
- Limited realm of index-based discovery services:
  - ▣ EBSCO Discovery Service
  - ▣ Ex Libris Primo Central / Summon (CDI)
  - ▣ OCLC WorldCat Discovery
- Continued challenge of coverage or performance between EBSCO and ProQuest discovery and content products
- Very high bar of investment for others to develop products
- Yewno Discover: interesting specialized discovery tool based on concept extraction and machine learning



# Alma ecosystem

- Alma address a broad core of functionality: cataloging, acquisitions, circulation (consortial / institutional), analytics
- Usually bundled with Primo or Summon (CDI)
- Supplemental products require Alma
  - ▣ Marketed as Ex Libris Higher Education cloud
  - ▣ Leganto (course list management)
  - ▣ Esploro (Research services)
  - ▣ Rapido (ILL workflows) / RapidILL (non-Alma)
  - ▣ ProQuest Rialto (content acquisitions marketplace)

# EBSCO FOLIO ecosystem

- FOLIO modules address broad core of functionality: cataloging, acquisitions, circulation,
- Panorama Analytics
- GOBI integration
- Most implementors using EBSCO Discovery Service, ERM, and knowledgebase tools
- Options to use ReShare for inter-institutional resource sharing
- Gaps remain for course list integration, research data management



# Consolidation and Cooperation

Libraries moving from individual to collective automation for greater efficiency and impact

# Decline of standalone implementations

- Trend toward shared infrastructure
- Standalone systems are the most expensive model
  - ▣ Each institution bears full cost of implementation and management
- Lost opportunities for collaboration and resource sharing



# Collaborative Infrastructure



- Build on existing trends for increased collaboration among libraries
- Shift from individual library automation to shared technology platforms
- The age of the stand-alone ILS is passing in favor of collaborative systems

# Alma vs FOLIO deployment options

- Alma: Single global multi-tenant platform. All libraries share the same codebase and access to shared resources (community zone)
  - ▣ No possibility for an independent customized deployment
- FOLIO: multiple instances of multi-tenant platform.
  - ▣ Per institution: some universities plan to deploy their own independent installation
  - ▣ Per vendor: EBSCO, Index Data, and others will deploy instances, shared or independent, among their customers

# Shared Technology Infrastructure

- Increasing interest in shared technology infrastructure among members of library systems and consortia
- Shift from stand-alone implementations to shared infrastructure
- Remove obstacles to strategic collaboration
  - ▣ Collaborative Collection Development
  - ▣ Shared access to collections
  - ▣ Re-distribution of technical services
  - ▣ Ability to share language experts and subject specialists

# Benefits of shared infrastructure



- ❑ Increased cooperation and resource sharing
- ❑ Collaborative collection management
- ❑ Lower costs per institution
- ❑ Greater universe of content readily available to patrons
- ❑ Avoid add-on components for union catalog and resource requests and routing

# Shared infrastructure Projects

- OhioLink
- Orbis Cascade Alliance
- WHELF
- BIBSYS
- Bureau de coopération interuniversitaire
- South Australia (public)
- Ireland Public Libraries
- JULAC: Public Universities in Hong Kong
- Marmot
- OCUL
- California State University
- University of California
- California Community Colleges
- University System of Georgia
- Florida Academic Library Services Cooperative
- PASCAL
- PALNI
- SUNY
- CUNY
- CARLI



# University of California

Table 1: University of California Campuses

Campus	Incumbent ILS	Number of Volumes (2018-19)	Enrollment (FTE)
UC Berkeley	Millennium	12,984,693	39,946
UC Davis	Alma	5,715,576	35,202
UC Irvine	Alma	4,079,195	35,267
UC Los Angeles	Voyager	10,911,750	39,649
UC Merced	WMS	2,103,239	8,570
UC Riverside	Alma	4,365,790	23,038
UC San Diego	Millennium	5,288,731	36,296
UC San Francisco	Millennium	1,202,970	
UC Santa Barbara	Alma	3,019,866	26,019
UC Santa Cruz	Alma	2,513,432	19,837
Totals		52,185,242	263,824

# California Community Colleges

- The libraries of the statewide consortium of California Community Colleges selected Alma. This implementation includes 110 institutions serving a total of 2.1 million students. Funding supported through a \$6 million grant
- The California Community Colleges is the largest system of higher education in the nation, composed of 73 districts and 115 colleges serving 2.1 million students per year.

# California State University System

California State University Libraries				
Institution	Incumbent ILS	Titles	Volumes	Circulation
Bakersfield	Voyager	473,134	637,606	15,714
Channel Islands	Voyager	100,433	255,594	
Chico	Sierra	850,000	1,265,907	32,182
Dominguez Hills	Millennium	628,193	637,064	8,456
East Bay	Millennium	944,415	1,139,057	33,491
Fresno	Millennium	1,928,624	1,345,398	208,491
Fullerton	Millennium	1,153,714	1,256,867	61,486
Humboldt	Voyager	692,017	807,101	30,300
Long Beach	Sierra	1,198,788	3,073,252	147,461
Los Angeles	Millennium	926,498	983,229	35,665
Maritime Academy	Millennium	42,854	154,820	5,439
Monterey Bay	Voyager	277,228	333,982	27,768
Northridge	Millennium	1,575,695	2,170,589	130,322
Pomona	Sierra	776,251	1,058,236	43,514
Sacramento	Alma	1,189,093	1,415,562	98,675
San Bernardino	Millennium	935,366	868,453	29,001
San Diego	Sierra	2,340,641	2,513,984	46,402
San Francisco	Millennium	1,524,464	1,677,437	89,161
San Jose	Sierra	1,505,676	1,441,279	94,745
San Luis Obispo	Millennium	805,508	724,531	38,895
San Marcos	Alma	441,812	538,203	17,071
Sonoma	Sierra	506,040	585,082	191,187
Stanislaus	Millennium	344,311	513,565	31,611
Total		21,160,755	25,396,798	1,417,037

# Resource sharing

- Fulfill the information needs of library users beyond the holdings of local collections
  - ▣ Interlibrary loan and resource sharing is well established but may not meet expectations in times of crisis
- Resource sharing of electronic materials
  - ▣ Better technical capacity: possibilities for immediate digital fulfillment
  - ▣ More complex legal restrictions
- Physical materials: how to emulate the scale and simplicity of the e-commerce sector
  - ▣ Regional or national networks
  - ▣ Centralized technical infrastructure
  - ▣ Unmediated patron requests
  - ▣ Rapid fulfillment



# Vendor and Tech Dynamics



# ProQuest – EBSCO dynamic

## ProQuest

- Content: ProQuest platform
- OASIS acquisitions
  - Rialto – next gen acquisitions
- Ex Libris
  - Alma
  - Primo, Summon, (Central Discovery Index)
  - Leganto
  - Esploro
  - Preservation: Rosetta
- Resource Sharing: INN-Reach, RapidILL, Rapido
- Strategy of platform bundling: Alma + Primo

## EBSCO Information Service

- EBSCOhost
- EBSCO Discovery Service
- GOBI acquisitions service
- Strategy of Integrating discovery into all other platforms
- Preservation: partnership Arkivum Perpetua
- Stacks: website management
- Open Science:
  - Protocols.io
  - Code Ocean
- Open Source Strategy:
  - FOLIO
  - Koha

# Ex Libris academic strategy

- Starting point: Management, discovery, and access to digital and print collections
- Leverage platforms to address new areas of library involvement
  - ▣ Curriculum support: Leganto
  - ▣ Research services support: Esploro
    - Increase visibility, efficiency, and impact of institutional research
- **Academic Libraries seek opportunities for greater impact and involvement in other services of strategic value to the institution**

# Ex Libris: beyond Alma

- Well established provider of library technologies
  - ▣ **Alma** selected by over 2,000 academic and research libraries
  - ▣ Voyager and Aleph continue as viable products (installations rapidly declining)
- **Leganto** supports library involvement with curriculum
- **Esploro**: new product to address academic research management
  - Stakeholders: Library + Office of Research + Researchers
  - Competes with Elsevier Pure, Kuali Research, etc
- **Rialto**: New concept for materials acquisition based on Alma

# New System sales churn

- Larger numbers of migrations among academic libraries
  - ▣ General acceptance of library services platform as appropriate model of resource management for academic and research libraries
  - ▣ Alma and WorldShare have been available since 2012 and are not currently perceived as high-risk solutions
  - ▣ ILS companies struggle to retain or attract academic libraries
  - ▣ Possible disruption: FOLIO

# OCLC strategies

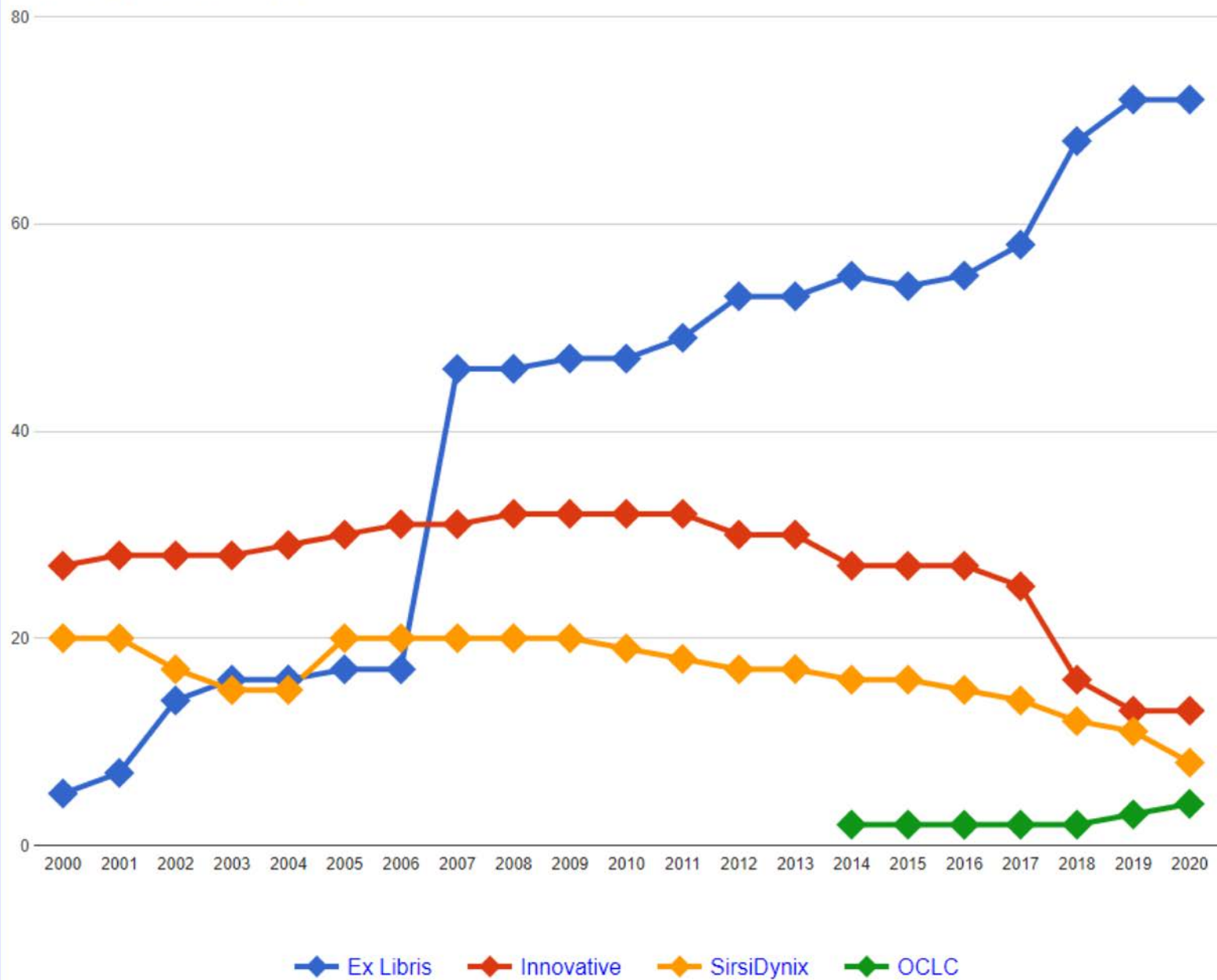
- Consolidation of resource sharing tech: WorldCat ILL, Relais, Tipasa
- Ongoing deployments of WorldShare Management Service for academic libraries
- Launch of OCLC Wise for public libraries
  - ▣ Based on bicatWise product from HKA
    - Implemented in two-thirds of public libraries in The Netherlands
    - Library consortium in Flanders
  - ▣ Positioned as a patron engagement platform
    - First live implementation in Allen County Public Library (Indiana)
  - ▣ Acquisition of Capira Technologies for patron mobile services



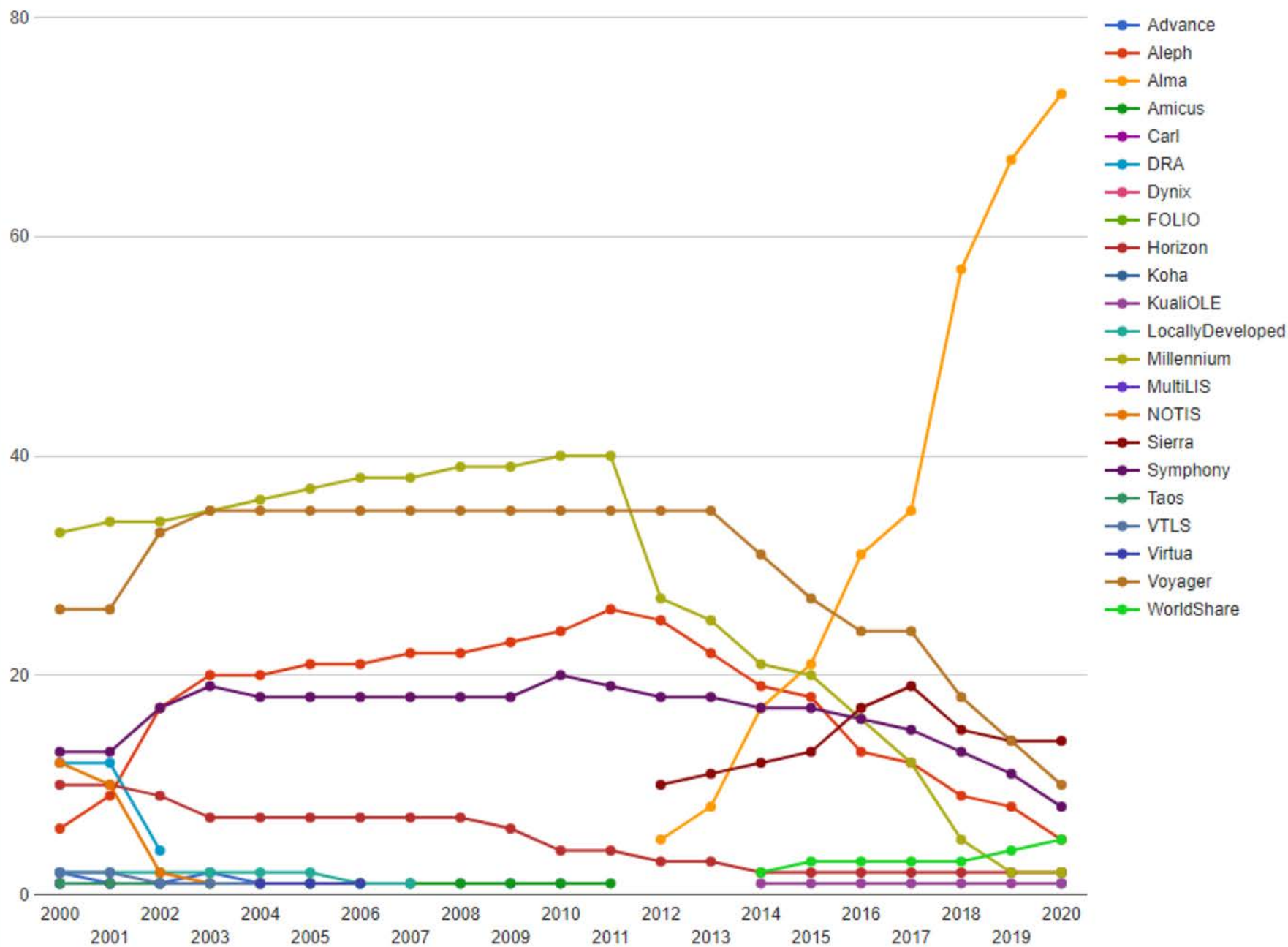
# Impact of Industry Consolidation



ARL Market Share: Major Vendors



ILS implementations in ARL Libraries



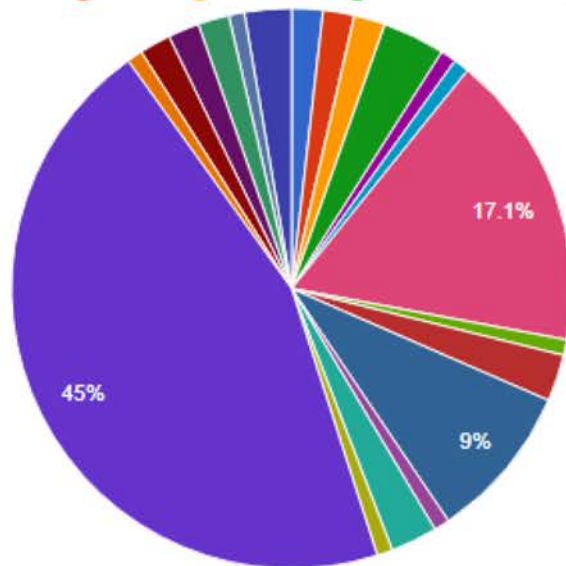
### 1990 Systems and Vendors

Year	Category	Count	Systems / Vendors
1990	Systems	20	Millennium (1) INNOVAQ (1) Carl (2) DataPhase (1) Symphony (2) DOBIS (3) NOTIS (50) Advance (1) LCS -- Library Control System (2) PALS (1) Innopac (3) LS/2000 (2) TOMUS (2) OCAT (1) BLISS (2) VTLS (3) DRA (4) GLIS (19) Locally developed (10) PLUS (1)
1990	Vendors	16	Innovative Interfaces, Inc. (5) Carl Corporation (2) DataPhase (1) Sirsi (2) IBM (3) NOTIS Systems (50) Geac Library Solutions (21) Ohio State University (2) Unisys (1) OCLC (2) Carlyle Systems (2) OCAT (1) Biblio-Techniques (2) VTLS (3) Data Research Associates (4) Independent (10)

20 Systems Active in 1990

● BLISS ● Carl ● TOMUS ● DRA

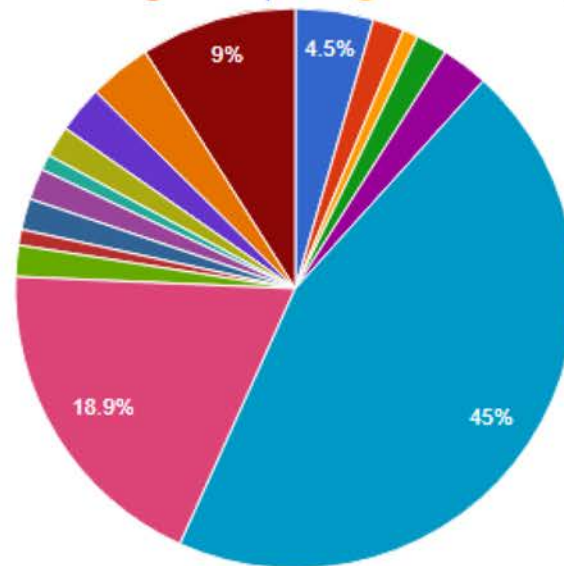
◀ 1/6 ▶



16 Vendors active in 1990

● Innovative... ● Carl Corpo... ● DataPhase

◀ 1/5 ▶

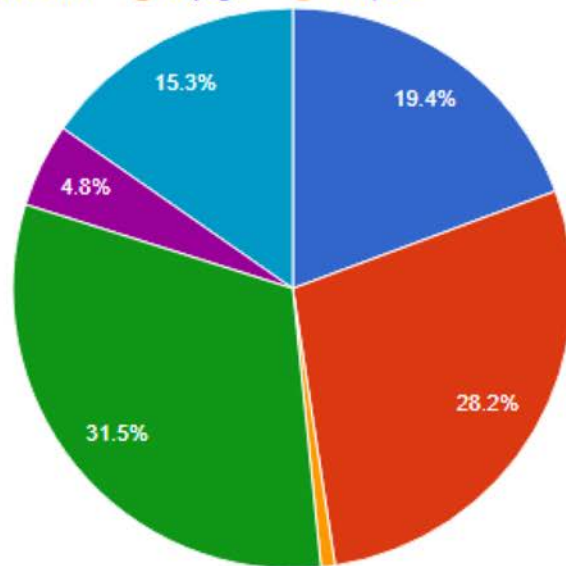


2008 Systems and Vendors			
Year	Category	Count	Systems / Vendors
2008	Systems	6	Innopac (1) Horizon (6) Symphony (19) Voyager (35) ALEPH 500 (24) Millennium (39)
2008	Vendors	3	Innovative Interfaces, Inc. (40) SirsiDynix (25) Ex Libris (59)

6 Systems Active in 2008

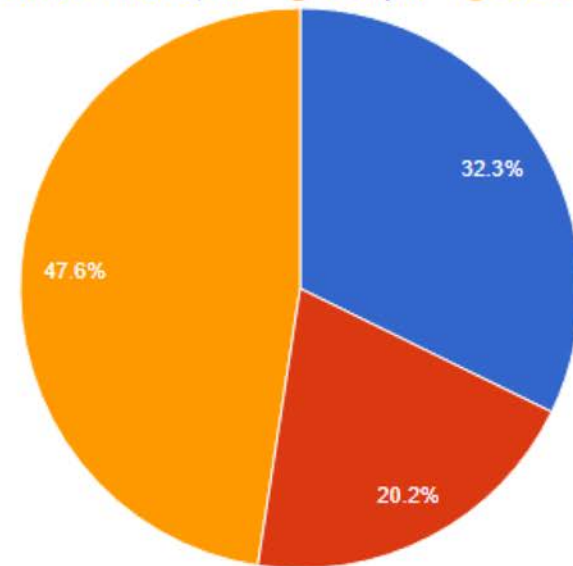
● ALEPH 500 ● Voyager ● Innopac

◀ 1/2 ▶



3 Vendors active in 2008

● Innovative Interfaces, Inc. ● SirsiDynix ● Ex Libris

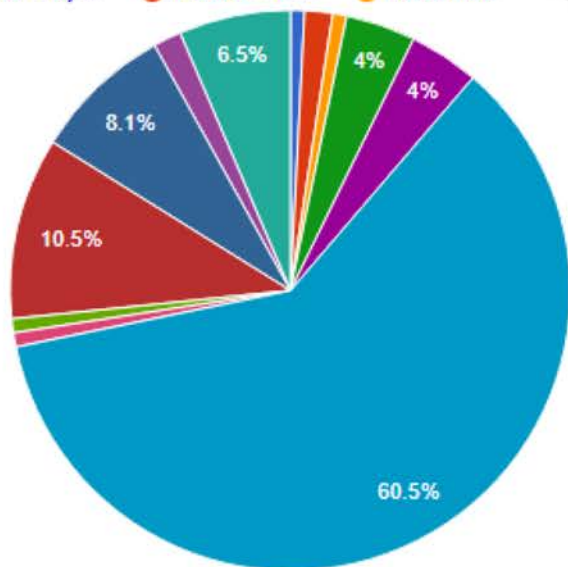


## 2020 Systems and Vendors

Year	Category	Count	Systems / Vendors
2020	Systems	12	Voyager (10) Polaris (1) Millennium (1) Symphony (8) FOLIO -- EBSCO Information Services (2) Sierra (13) WorldShare Management Services (5) Kuali OLE (1) ALEPH 500 (5) Horizon (2) Alma (75) Koha -- ByWater Solutions (1)
2020	Vendors	6	ProQuest (105) SirsiDynix (10) EBSCO Information Services (2) OCLC (5) Independent (1) ByWater Solutions (1)

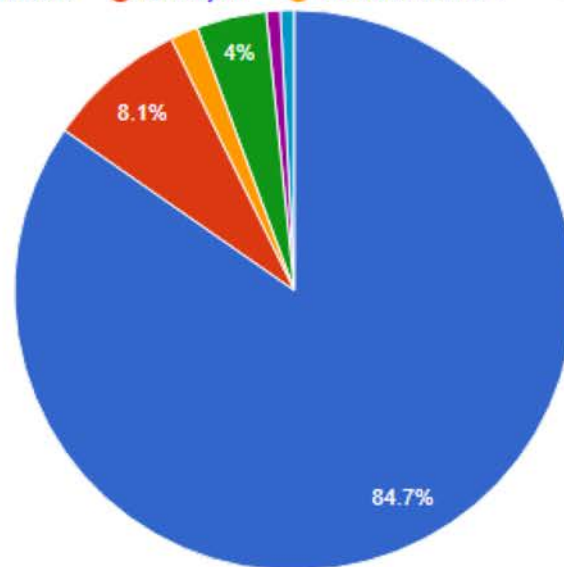
12 Systems Active in 2020

● Koha -- By... 
 ● FOLIO -- E... 
 ● Kuali OLE 
 ◀ 1/4 ▶



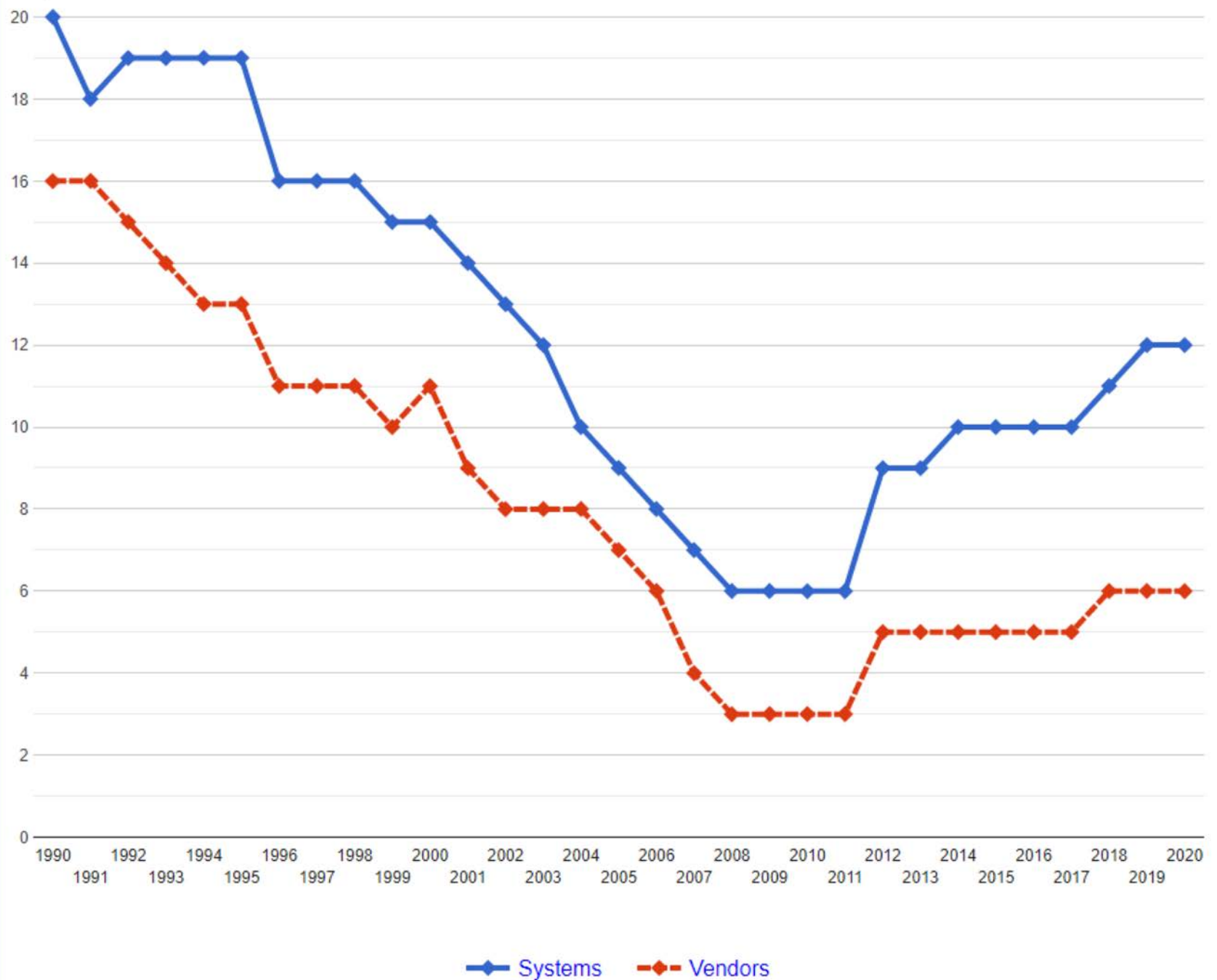
6 Vendors active in 2020

● ProQuest 
 ● SirsiDynix 
 ● EBSCO Inform... 
 ◀ 1/2 ▶





Systems and Vendors in Association of Research Libraries members







# Questions and discussion