

# Implementation Study

## *US Academic Libraries*

In support of this report, a systematic review was performed to gather data on the discovery services selected by academic libraries in the United States. This study focused on the libraries associated with colleges and universities in the US in selected classification categories assigned by the Carnegie Foundation for the Advancement of Teaching in 2000. The categories used are based on an older edition of the classification assessments now performed by the Center for Postsecondary Research at the Indiana University Bloomington.<sup>1</sup> The study is based on the Libraries.org directory of libraries maintained by the author as a component of Library Technology Guides. The entry for each academic library in the US has been populated with the 2000 Carnegie Classification designation.

*Libraries.org directory*

<https://librarytechnology.org/libraries>

The Libraries.org directory includes fields for multiple categories of technology products. Current and previous integrated library systems (ILSs) are the core focus of Library Technology Guides and therefore were already comprehensively represented. The database previously had fields for current and previous index-based discovery services and discovery interfaces, but these were not thoroughly populated. The author visited the websites of all the libraries with missing data to determine the discovery services offered. This effort resulted in a snapshot of current implementations and may not reveal implementations or migrations that are planned or in process.

This review focuses on colleges and universities

and does not include two-year community colleges or associate's colleges. The specific classification levels include the following:

- 15: Doctoral/Research Universities—Extensive
- 16: Doctoral/Research Universities—Intensive
- 21: Master's Colleges and Universities I
- 22: Master's (Comprehensive) Colleges and Universities II
- 31: Baccalaureate Colleges—Liberal Arts
- 32: Baccalaureate Colleges—General

A report was adapted to present the data according to each of the Carnegie levels. The report organizes the libraries according to the discovery service used, providing links to the Libraries.org profile of each library and the total counts for each discovery service within that Carnegie Classification level. A pie chart illustrates the distribution of discovery services among the libraries of each Carnegie level. Summarized data are also presented in a table. The report also presents data from the 2012 data set collected and made available from the National Center for Educational Statistics showing total and technology expenditures in aggregate for each level and the average expenditures per library. These reports can be generated dynamically on Library Technology Guides (see URL in gray box). Tables 4.1–4.2 and figure 4.1 provide data from the report generated for the top Carnegie Classification level (15: Doctoral/Research Universities—Extensive).

*Library Technology Guides, ILS Report by Carnegie Classification*

<https://librarytechnology.org/libraries/carnegie/>

**Table 4.1.** List of universities classified in level 15—Doctoral/Research Universities—Extensive—and the discovery service they’re currently implementing. For the complete table, view <https://librarytechnology.org/libraries/carnegie/>.

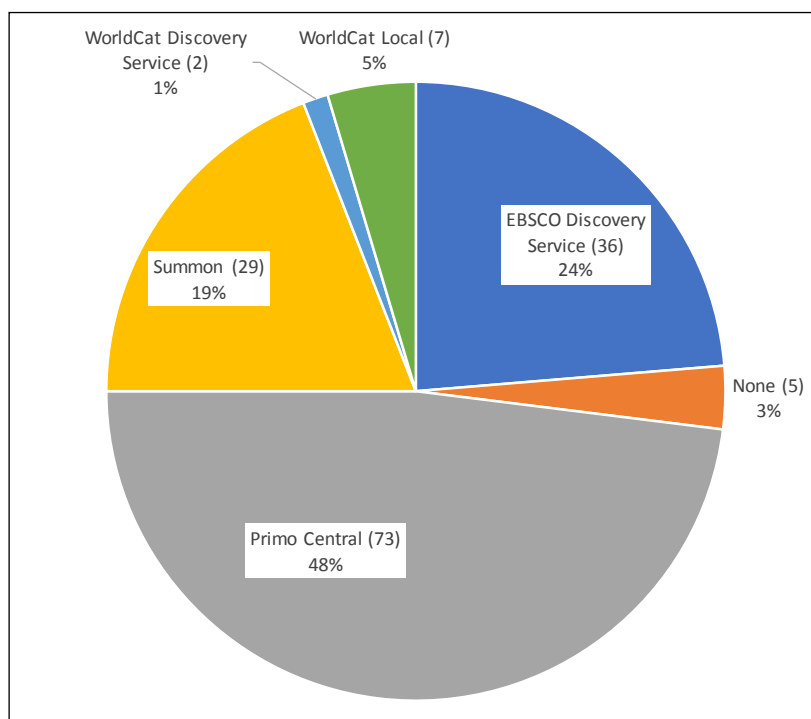
Discovery Product	Libraries	Count
EBSCO Discovery Service	Brigham Young University; California Institute of Technology; Florida International University; Florida State University; Fordham University; Georgia State University; Indiana University; Kent State University; Louisiana State University; Marquette University; and more. View the full list at <a href="https://librarytechnology.org/libraries/carnegie/">https://librarytechnology.org/libraries/carnegie/</a> .	36
None	Auburn University; Johns Hopkins University; Lehigh University; Northern Illinois University; University of Illinois - Urbana-Champaign	5
Primo Central	American University; Arizona State University; Binghamton University; Boston College; Boston University; Brandeis University; Carnegie Mellon University; Catholic University of America; Clemson University; Colorado State University; and more. View the full at <a href="https://librarytechnology.org/libraries/carnegie/">https://librarytechnology.org/libraries/carnegie/</a> .	73
Summon	Brown University; Case Western Reserve University; Columbia University; Cornell University; Duke University; Michigan State University; North Carolina State University; Pennsylvania State University; Princeton University; Syracuse University; and more. View the full list at <a href="https://librarytechnology.org/libraries/carnegie/">https://librarytechnology.org/libraries/carnegie/</a> .	29
WorldCat Discovery Service	Claremont Graduate University; University of New Mexico	2
WorldCat Local	Ohio State University; University of California - Los Angeles (UCLA); University of California - Riverside; University of California - San Diego; University of Delaware; University of Louisville; University of Maryland	7
Total		152

A total of 1,357 academic institutions are represented within these six categories (see table 4.3). These libraries represent the core market for index-based discovery services in the United States. Trends seen here may not necessarily be applicable to other geographic regions.

Limiting the review to these institutions does not represent the full installed base of any of the products involved since they are also implemented to a limited extent in two-year colleges in the US as well as in some nonacademic libraries. Each of the products has been implemented globally. This review does not cover regions outside the US, so it should be understood as a subset of global installations. That said, this systematic review of these libraries provides insight into the trends of discovery product implementations according to size and scope of academic libraries.

This review focuses on the index-based discovery product licensed, regardless of what discovery interface is used. A library, for example, that has developed an interface using VuFind that presents article content in its search results from EBSCO Discovery Service will be counted as EDS. Discovery interfaces are also tracked in Libraries.org, but not systematically.

A library is counted as using one of these products only if a search box on its website leads to results from



**Figure 4.1** Discovery products in Carnegie Classification 15 by percentage of current use

the service. Some may use another discovery interface but would be counted if their article search returns results from a given index-based discovery service. This approach does not count libraries that may have licensed the product, either directly or as part of a consortial or statewide arrangement, but do not present the search option dominantly on their website. Many libraries, for example, may have authorized access

**Table 4.2.** Aggregate expenditures per library classified in level 15

Category	Aggregate Expenditures	Libraries	Average per Library	Percentage
Total	\$3,387,652,935	152	\$22,287,190	
Technology	\$68,262,612	152	\$449,096	2.02%

**Table 4.3.** Discovery product installations by Carnegie Classification level

Carnegie Classification Level	EDS		Primo		Summon		WorldCat		None		Total
	# Using Service	% Using Service	# Using Service	% Using Service	# Using Service	% Using Service	# Using Service	% Using Service	# Using Service	% Using Service	
15: Doctoral/ Research Universities—Extensive	37	24%	73	48%	29	19%	9	6%	4	3%	152
16: Doctoral/ Research Universities—Intensive	40	38%	31	29%	17	16%	10	9%	8	8%	106
21: Master’s Colleges and Universities I	164	34%	151	31%	56	12%	65	13%	48	10%	482
22: Master’s (Comprehensive) Colleges and Universities II	28	27%	17	16%	11	11%	27	26%	21	20%	104
31: Baccalaureate Colleges—Liberal Arts	56	26%	36	17%	26	12%	58	27%	41	19%	216
32: Baccalaureate Colleges—General	96	32%	41	14%	15	5%	54	18%	91	31%	297
Totals	421	31%	349	26%	154	11%	223	16%	213	16%	1,357

to WorldCat Discovery Service through a FirstSearch subscription but opt not to use it as their primary discovery service. For this reason, the installation statistics given in this report may differ from the total number of sales or licenses reported by each vendor.

## Discovery Implementation Trends in US Academic Libraries

The implementation data for these libraries indicate a very high level of adoption of index-based discovery services. Only 16 percent of the libraries in the group under consideration have not yet implemented one of these products (213 out of 1,357). The adoption percentages vary according to advancement level: only 4 of the Doctoral/Research Universities—Extensive group and 31 percent of the Baccalaureate Colleges—General group have not implemented a discovery service. These statistics imply that the cost of these products may be out of reach to many of the smaller academic libraries. Libraries in the top tier of academic libraries that have not implemented an index-based discovery service seem more likely to have avoided

these products intentionally than from the lack of funding.

Of the three organizations offering index-based discovery services, ProQuest and EBSCO Information Services hold almost equal positions, with OCLC trailing these two substantially. Of the study group, 31 percent have implemented EBSCO Discovery Service (421 out of 1,357); ProQuest leads with 37 percent of the libraries (154 [11%] using Summon, 349 [26%] using Primo); OCLC follows with 16 percent (223 using either WorldCat Discovery Service or WorldCat Local). The proportion of libraries using Primo decreases with each academic level (level 15 = 48%; 16 = 29%; 21 = 31%; 22 = 16%; 31 = 17%; 32 = 14%). The same trend applies to Summon.

Statistics from the study group indicate that the higher-level academic libraries have implemented discovery products from Ex Libris in larger proportions than from its competitors. Among the Doctoral/Research Universities—Extensive institutions, 73 have implemented Primo (48%) and another 29 use Summon (19%) for a total market share of 67 percent. This top group of academic libraries has implemented resource management products from Ex Libris in similar

proportions: 68 use Alma, 20 use Voyager, and 13 use Aleph, totaling 101 out of the 152 installations or 66 percent.

Ex Libris discovery products hold a much smaller market share among the smaller academic institutions. Among the Baccalaureate Colleges—General group, only 5 percent have implemented Summon and 14 percent use Primo, well below the proportions using EBSCO Discovery Service or WorldCat.

EBSCO Discovery Service has been implemented in mostly consistent proportions among all the tiers of academic libraries. Percentages range from a high of 38 percent among Doctoral/Research Universities—Intensive institutions to 24 percent of Doctoral/Research Universities—Extensive. It is notable that EBSCO Discovery Service has been implemented in a higher proportion of the penultimate academic level than the other categories. These statistics suggest that this product has been well accepted by academic libraries ranging from the most complex to those with smaller collections.

EBSCO Discovery Service holds higher percentages than any of its competitors in several categories: Doctoral/Research Universities—Intensive (38%), Master's Colleges and Universities I (34%), and Baccalaureate Colleges—General (32%).

OCLC's WorldShare Management Services and WorldCat Local hold a smaller market share overall, though these two products are quite popular in the middle tier of academic libraries. In the category of Baccalaureate Colleges—Liberal Arts institutions, 27 percent use a discovery service from OCLC, more than any other discovery service, but slightly below the combined product totals from Ex Libris. Among the top two tiers of Doctoral/Research Universities, OCLC installations (5%) fall well below those from Ex Libris (58%) and EBSCO (30%).

The members of the Association of Research Libraries (ARL) provide another view of the discovery services implemented in large academic libraries.

Out of 116 academic members of the ARL, 114 have implemented one of the commercial index-based discovery services.<sup>2</sup> Below is a breakdown by discovery service:

- Primo/Primo Central: 53
- Summon: 27
- EBSCO Discovery Service: 25
- WorldCat Local or WorldCat Discovery Service: 9
- None: 2

## Discovery and Resource Management

Whether discovery services should be bundled or acquired à la carte has emerged as one critical issue in

the current phase of library systems. Both high-stakes business interests and the technology strategies of libraries come into play.

Perspectives differ regarding the benefits of pairing a discovery service with the resource management system from the same vendor. Two arguments prevail:

- From one point of view, discovery services should be selected independently from whatever resource management systems are used by library staff members. A library wants the most appropriate patron-facing service based on usability, content coverage, and other distinctive criteria. Libraries should be able to evaluate and acquire their preferred products in each category and not be locked into a bundled package. A library's technical infrastructure should be modular so that the library can assemble the components best able to serve its needs. Each of the discovery services offers distinctive capabilities, warranting the additional effort needed for systems integration.
- It could also be argued that discovery services and resource management systems from the same provider can be better integrated in ways that can improve the patron's experience and produce search results with more reliable linking to full text. Patron profiles drive resource management functions such as circulation within the resource management system as well as request, fulfillment, and personalized features in the discovery service. Many libraries may be offered financial incentives to accept the discovery service bundled with a new library services platform compared to purchasing a discrete product from another vendor. The discovery services offer some differences in capabilities, but not to the level that justifies the additional effort involved in systems integration.

In the current phase of the library technology industry, academic libraries replacing existing ILSs tend to select a library services platform paired with the discovery service from the same vendor. Ex Libris dominates its competitors, with Alma and Primo as the top choice for academic libraries, both within the United States and internationally. Sales of OCLC's WorldShare Management Services fall well below those of Alma but are almost always paired with WorldCat Discovery Service.

Although most new Alma subscriptions are bundled with Primo, Ex Libris also supports some other discovery product combinations. The company also supports Summon as the patron interface and discovery service for Alma as well as open-source discovery interfaces such as VuFind and Blacklight. These open-source implementations will usually use the Primo Central index for article-level search results.

The pairing of Summon with Alma has so far been

**Table 4.4.** Ex Libris Alma installations from 2011 to 2017, including number of contracts, number of libraries, and number of installations

Year	Contracts	Libraries	Installed
2017	116	266	1,095
2016	132	203	829
2015	88	220	626
2014	43	77	406
2013	31	170	329
2012	17	71	126
2011	24	24	55

mostly seen with libraries that have previously implemented Summon. Although the indexes for Summon and Primo are populated with much the same content, they offer distinctive interfaces. Libraries acclimated to Summon may not necessarily appreciate the complexities of Primo. Eastern Michigan University, for example, has been an early adopter of Summon and chose to retain this discovery service as a condition of selecting Alma.

## Current Market Trend for Bundled Products

In the current phase of the academic library sector of the technology industry, Ex Libris has become established as the leading competitor for its Alma library services platform. Most new contracts for resource management systems have gone to Ex Libris (table 4.4), with OCLC's WorldShare Management Services attracting a smaller number of libraries (table 4.5). ILSs including Innovative's Sierra, SirsiDynix Symphony, and Koha also hold minority positions in new sales and continue to represent a large portion of incumbent installations.

Almost all the contracts for Alma and WorldShare Management Services also include a discovery service component. In this way, the trends for new library service platform selections favor three of the four discovery services: Primo and Summon from Ex Libris and WorldCat Discovery Service. This trend works against EBSCO Discovery Service, though it still holds a very strong position in the market and continues to see growth overall.

Several very large systems and consortia have selected Alma and Primo, which can mean displacement of multiple ILSs and discovery services. In the last few years, major contracts for Alma that displaced EBSCO Discovery Service installations included Partnership among South Carolina Academic Libraries, State University of New York Libraries Consortium, Rutgers University, and other individual academic libraries. Just as in the resource management arena, the trend toward contracts involving large numbers of libraries

**Table 4.5.** OCLC WorldShare Management Services installations from 2010 to 2017, including number of contracts, number of libraries, and number of installations

Year	Contracts	Libraries	Installed
2017	52	54	521
2016	83	97	440
2015	68	73	386
2014	79	90	303
2013	92	140	177
2012	163		73
2011	184		38
2010	130		5

through statewide systems or large consortia often results in a “winner-take-all” scenario that displaces many previously diverse implementations, which are consolidated into a unified system sharing a single resource management and discovery product suite.

Given the strong momentum of Alma and its tendency to displace EBSCO Discovery Service, the launch of FOLIO with strong backing by EBSCO can be seen as a proactive measure to introduce a new option into the marketplace that favors the concept of modular, unbundled application components. EBSCO will naturally promote EBSCO Discovery Service as the discovery component for the libraries that engage for FOLIO services.

The University of Pennsylvania libraries have implemented Alma, but with their locally developed discovery interface based on Blacklight that relies on the Summon index for article-level search results.

## Resource Management/Discovery Service Market Study

Table 4.6 describes the resource management and discovery products implemented among the libraries in the study group.

Several patterns can be seen in this group of US academic libraries relative to resource management systems and discovery services.

These implementation statistics confirm the trend that library services platforms are usually bundled with a discovery service from the same vendor. Of the 316 Alma sites in the study group, 293 have implemented Primo and 7 use Summon. In other words, 95 percent of libraries implementing Alma use a discovery service from Ex Libris. Out of the 206 libraries using WorldShare Management Services, 185 match it with WorldCat Discovery Service or WorldCat Local (90%).

It is notable that among the libraries using ILSs from Ex Libris, more are currently using EBSCO Discovery Service than Ex Libris's own Primo or Summon products. Of the 54 Aleph implementations in

**Table 4.6.** Number of implementations of resource management and discovery service products among university- and college-level libraries in the study

	<b>EBSCO Discovery Service</b>	<b>Primo</b>	<b>Summon</b>	<b>WorldCat Discovery Service</b>	<b>Total</b>
<b>Symphony</b>	85	2	22	4	113
<b>Horizon</b>	4	0	3	2	9
<b>Sierra</b>	139	2	67	2	210
<b>Millennium</b>	30	4	9	3	46
<b>Alma</b>	15	293	7	1	316
<b>Aleph</b>	30	17	4	3	54
<b>Voyager</b>	51	15	27	12	105
<b>WMS</b>	19	0	2	185	206
<b>Koha</b>	25	1	9	6	41

this group, 30 institutions use EBSCO Discovery Service, 17 use Primo, 4 use Summon, and 3 use OCLC's WorldCat Local or WorldCat Discovery Service. A similar pattern applies to Voyager (EBSCO Discovery Service = 51; Primo = 15; Summon = 27; WorldCat = 12).

Almost all libraries using OCLC's WorldShare Management Services have gone with WorldCat Local or WorldCat Discovery Service (185 out of 206 institutions); 19 use EBSCO Discovery Service for searching articles; 2 libraries use Summon; none use Primo.

One exception to the bundled options from Ex Libris can be seen in the University System of Georgia (USG) consortium of academic libraries. The consortium has licensed EBSCO Discovery Service for its members, most of which have implemented it as their primary article-level search service. The consortium selected Ex Libris in Alma. Most of the libraries in the consortium use Primo as their interface for books, e-journal titles, and other materials managed directly in Alma but continue to use EBSCO Discovery Service for searching articles. Within the USG system, Georgia Institute of Technology used both Primo and Primo Central instead of EBSCO Discovery Service. Since no direct integration is currently offered between the products, EBSCO Discovery Service cannot be used with Alma as a catalog replacement option as it can with most ILSs.

EBSCO Discovery Service has the most diversity in terms of integrations with resource management systems. Combinations include Symphony: 85 out of 113; Horizon: 4 out of 9; Sierra: 139 out of 210; Millennium: 30 out of 46; Alma: 15 out of 316; Aleph: 30 out of 54; Voyager: 51 out of 105; WorldShare Management Services: 19 out of 206; and Koha: 25 out of 41. This pattern is consistent with EBSCO's strategy of entering partnerships with the vendors of ILS products and open-source projects to develop technical integrations and business relationships in support of EBSCO Discovery Service.

Many libraries in the study group using Sierra and

Millennium have implemented EBSCO Discovery Service, either integrated with its Encore discovery service (marketed as Encore Duet), offered as a separate nonintegrated discovery service, or using EBSCO Discovery Service as the full patron interface. Out of the 210 libraries using Sierra, 139 also use EBSCO Discovery Service; 30 out of the 46 libraries using Millennium use EBSCO Discovery Service.

Out of the 41 academic libraries in the group using the open-source Koha ILS, 25 have also implemented EBSCO Discovery Service.

Other ILSs were also represented in this group, but with few installations. These include Virtua (4), Quali OLE (2), TIND ILS (1), Evergreen (1), Library Solution (14), Mandarin Oasis (2), Follett Destiny (3), EOS.Web (1), Polaris (9), LibraryWorld (1), Spydus (1), None (3), AGent VERSO (3), Alexandria (1), Insignia (1), and Mandarin M5 (1).

It is important to keep in mind that the academic library sector is very much in motion in terms of resource management systems and discovery services. Ex Libris continues to announce new Alma sales regularly, most of which also include Primo.

The statistics given in this issue are a snapshot of implementations as of August 2018. The reports developed for the issue can be accessed from Library Technology Guides. They are likely to have changed since the writing of this report because the entries in the Libraries.org database are continually updated to reflect new selections and implementations of resource management systems and discovery services.

Given the strong momentum toward adoption of library services platforms in academic libraries, those vendors offering only an ILS are vulnerable targets for Ex Libris and OCLC. Companies such as Innovative and SirsiDynix that have not created their own index-based discovery services and knowledge bases have formed partnerships with EBSCO as a defensive measure. In the long term, it will be interesting to see whether the libraries using SirsiDynix and Innovative ILS products paired with EBSCO discovery and

knowledge base components remain loyal or eventually gravitate toward bundled library services platforms and discovery services.

As a broad characterization based on available data, almost all large academic libraries and the majority of midsized and smaller libraries have implemented an index-based discovery service. Primo and Summon from Ex Libris have been implemented in higher proportions among large academic libraries; EBSCO Discovery Service is used by larger proportions of midsized and small academic libraries. OCLC's WorldShare Discovery Service and WorldCat Local are used as the primary discovery service in much smaller numbers.

Public libraries tend to prioritize the online catalog of their ILS. As these libraries acquire increasing proportions of e-books via packages from OverDrive, Bibliotheca, or Baker & Taylor, they often incorporate these titles into their ILS for discovery and access

through their online catalog. Public libraries focus more on enrichment and integration arrangements for the online catalog provided with their ILS than on third-party replacement products.

## Notes

1. Carnegie Foundation for the Advancement of Teaching (2001), *The Carnegie Classification of Institutions of Higher Education*, 2000 edition, Menlo Park, CA: Author. Referenced from <http://carnegieclassifications.iu.edu/>.
2. For a complete listing of which ARL libraries are using which discovery service, view the complete table at Marshall Breeding, "Academic Members of the Association of Research Libraries: Index-Based Discovery Services," *Library Technology Guides*, 2018, <https://librarytechnology.org/libraries/arl/discovery.pl>.