Discovery Comparison

Review Date: Spring 2016

In Spring 2016, selected members of the Council of Chief Librarians, Electronic Access and Resources Committee (CCL-EAR) undertook a comparative study of five discovery tools:

- *Ebsco Discovery Service (EDS)*
- *Encore Synergy*
- *Primo*
- *Summon*
- *Worldcat Local and Discovery*

The review focused on the coverage, search interface, cost, availability/accessibility of service, and customer service as well as customization, and mobile options for each product.

Method

During Fall 2015 and Spring 2016 CCL-EAR conducted a comparison review of Discovery Services for the California Community Colleges. To inform the comparison a survey was sent to the 113 colleges to learn if institutions were using Discovery Services, if so, what they were and what were their experiences with different aspects of the Discovery Services. If institutions did not have a Discovery Service they were asked why and if they were interested in having one. In February 2016 CCL-EAR hosted a Discovery Services meeting and panel where all 113 colleges were invited. The survey results were reported and a panel discussion followed. Open discussion after the panel revealed a number of concerns (See Summary of Shared Concerns at the end of this review) and CCL-EAR realized a comparison review would be challenging. Each interface was highly customizable. Content was based on the subscription databases the college had and the visibility and results ranking was based on the Discovery Service. Some products were integrated with Integrated Library Systems (ILS) and other were stand alone products.Reviewers were granted guest access to products across the state, CCL-EAR conducted this comparison review.

GLOSSARY

Application Programming Interface (API) — A method for programs to communicate with each other.

Discovery solutions — A search tool that relies on a unified index to search multiple resources.

Federated search — the process of searching multiple resources simultaneously and aggregating results. Process relies on live, real-time queries sent to multiple targets

File Transfer Protocol (FTP) — A method of transferring files between computers on a network

Integrated library system (ILS) — A tool used by libraries to run core services. Contains a backend used by staff for functions such as cataloging, maintaining course reserves, managing user accounts, etc. and a front end, called an OPAC, used by patrons.

Knowledgebase — A centralized collection of information. In a library context knowledgebases are collections of resources used to populate search tools such as discovery solutions.

Link resolver — A tool for connecting sources, such as bibliographic records in a database, with targets, or the full-text of the item itself.

Metadata — Data that describes other data. In a library context, metadata often refers to the information contained in a bibliographic or MARC record.

OPAC — Online Public Access Catalog, typically the front-end search interface that patrons see and use. OPACs are a feature of an ILS.

Proxy server — A tool used to authenticate patron identity by passing information to outside resources.

CRITERIA	**Ebsco Discovery Service (EDS)**	**Encore Synergy**	**Primo**	**Summon**	**Worldcat Local and Discovery**
Content/Search Interface	GVRL, EBSCOhost databases, PLoS, Sage Databases buried (Not showing up in the first three screens of results):: Sage, Opposing Viewpoints in	Ebooks from GVRL, ebook Collection (EBSCOhost). Articles from EBSCOhost <u>Relevancy Ranking:</u> Encore uses RightResult™ relevance ranking technology	EBSCOhost databases, Films on Demand, Ebrary Academic Complete; ABI-Inform (Proquest), Ebrary College Complete, Lexis-Nexis Academic, JSTOR, ProQuest Newsstand and international	ProQuest Educational Journals, ProQuest Newsstand, Gale's Academic OneFile, Gale's Science in Context, JSTOR, Lexis-Nexis Databases buried (Not showing	Ebooks from GVRL, Infobase, and EbscoHost. Articles from EBSCOhost, Gale databases Databases buried (not showing up in the first three

	Context, ScienceDirect, Lexis-Nexis, JSTOR Quality of metadata Varies. Metadata of local catalog is adapted from library's own MARC records, with added features e.g. "Books by same author" and "Reviews"; many EBSCOhost records include abstracts and subject headings; records from other vendors may include rich metadata or in some cases a total absence of abstract and subject headings. Some content from outside vendors can be searched full-text. Relevancy Ranking: Results are weighted to preference local holdings by default, but it can be changed if desired. The major contributing factor in relevance scoring is the frequency of the user's search terms in matching EDS metadata and full-text records. The most influential fields in EDS are: 1. Matches on subject headings 2.Term appearance in the title 3. Author-supplied keywords	which weights materials based on where the search term appears in the record data and assesses other factors such as the type of material and adjacency of terms.	newspapers Dbases buried: JSTOR, ScienceDirect, Sage, Emerald Relevancy Ranking: Primo uses ScholarRank™ technology which ranks query according to following methods: 1. Query-item match 2. Item's value score 3. User's characteristics 4. User's info. needs	up in the first three screens of results):: Westlaw, GVRL, most EBSCOhost databases, Ebrary catalog (books) Relevancy Ranking: Summon uses Dynamic rank and Static rank to the ranking of the record in the results. Dynamic rank focuses on matching up a user's exact query with all of the metadata and full text in the Summon index while Static rank helps boost relevance based on attributes of an item, such as content type, scholarly, publication date, citation counts. In addition, there is "Recommendations" which offers guidance to users at the point of need such as Best bets, Database recommender and related search suggestions	screens of results):: ProQuest databases (Alt-PressWatch, Ethnic NewsWatch, GenderWatch), LexisNexis, JSTOR Relevancy Ranking: Here are several components to the WorldCat Local relevance algorithm: 1. The search terms in the author then title fields are weighted first, then the rest of the fields of the record 2. Term frequency 3. Proximity of the terms to one another 4. Recency (more recent items are weighted more heavily) 5. How widely held 6. Locally held items are surfaced to the top of the results if the library chooses this as the default sort

	4. Keywords within abstracts 5. Match on keywords in the full text				
CRITERIA	**Ebsco Discovery Service (EDS)**	**Encore Synergy**	**Primo**	**Summon**	**Worldcat Local and Discovery**
Customization	EDS offers interface customization via the administration site that includes: Logos Background Colors, Text/Link Colors, & Toolbars. Extensive further customization of the interface can be accomplished by means of embedded javascript; EBSCO hosts code samples in its wiki and for a fee will manage and host such "apps". The EDS API allows even more extensive interface customization, and can be used to host EDS content on a platform other than EBSCOhost. There are not many options for customizing results. Options include enabling the records your library subscribes to as a limiter, deciding which databases should be included in your listings, and setting the order for what	Encore Synergy advertises "extensive customization", but little information is available on those options other than what is available via integration with EBSCO's EDS (with the EDS being the back end and Encore being used as the user interface). Administrators can set the order of full text links that appear under a result for specific item. For more information, see EDS. In Encore it is possible to separate the results of a catalog search and articles or include them both in an integrated list. Logo can be customized.	Primo advertises that the user interface (both how users search and how results are displayed) can be customized. Logo & the banner area customizable. Primo advertisements indicate that "ranking algorithm, metadata, and UI can be customized". Libraries can indicate if they want Primo to search physical, online, or both types of resources. Primo offers an additional way to affect search results through personalization. Personalization allows users to change relevancy by discipline, publication date, or type of materials needed (article, book, etc.). Also allows LibGuides to be placed top in results.	There are many options for customizing the Summon interface, such as logos, colors, languages, citation formats, and additional options of turning on/off search counts, citation counts, and permalinks. Search facets can be customized by enabling/disabling options and choosing which order they should appear in. You can also customize the order of items in your library's collection; for example, reserves can be listed first over circulating books, reference books, etc. Summon also offers several customization options for search results. Administrators can choose an order of prioritization of meta-data for resources that Summon can directly link to. Two other customizable features include the database recommender and the "Best Bets" feature. The database	WorldCat allows customization of a logo, the text that appears when one hovers over the logo, the display colors, interface language choices, and the ability to add up to 7 custom links that appear in the banner. Additionally, you can customize some library holdings column labels and the prompts that appear when a user would like to link to content that is restricted. When it comes to the ability to customize search results, there is little one can do. There are limited options for sorting and scoping search results. The two choices for sorting results are library & relevancy or relevance only. Library and relevancy allows for your institution's results to be listed first before other

	resources are listed first with an item (which doesn't change relevancy, only how a user access relevant results). Additionally, you can choose to enable a "research starter" that links to general information (such as what is typically seen in reference materials) about the entered keyword search.			recommender allows you to suggest additional databases a user should try based on their search. They offer a top queries report to help librarians determine possible recommendations. The "Best Bets" options allows you to direct users to additional content, such as library hours, webpages, events, libguides, etc.	worldwide libraries are shown. Relevancy sorts results by relevancy only, regardless of your potential holdings in WorldCat. Scoping options can be set to either libraries worldwide (results include your library and other libraries worldwide) or your library (which limited results to only items you hold). There are no options to choose how your library's holdings, worldwide holdings, and content from connected databases are ranked or sorted.
Mobile or Multimedia Options	Mobile responsive interface is automatically supplied for small-screen devices. Sample code for creation of a mobile site using the EDS API is available. Application for smartphones & tablets in beta development.	Mobile responsive interface available (must set up with customer support).	Mobile responsive interface.	Mobile responsive interface.	Mobile responsive interface.
Citation Options	5 citation formats for books and 8 citation formats for articles are available to view/copy/paste with options for exporting citations which includes 8 direct export options and 4 options for other bibliographic managers.	Citations available to export to 3 bibliographic managers and to view/copy/paste from native UIs (if available) & not within the discovery layer.	3 citation formats are available to view/copy/paste and export to 2 bibliographic managers for both books and articles.	8 citation formats are available to view/copy/paste and export to 5 bibliographic managers for both books and articles. Includes limited RefWorks	3 citation formats are available to view/copy/paste and export to 2 bibliographic managers for both books and articles.

CRITERIA	**Ebsco Discovery Service (EDS)**	**Encore Synergy**	**Primo**	**Summon**	**Worldcat Local and Discovery**
Initialization and Administration	Initialization needs at minimum databases selected and base links up. More time is involved if you want the Catalog implemented of which EBSCO will provide assistance for setup. The administrative interface is almost identical to the general EBSCOhost admin interface for all of the databases. One can preview changes by creating a secondary profile. Updates may happen quickly or up to 20 minutes after they are saved. Statistics are available in many varieties, including COUNTER and SUSHI compliant ones. One challenge working with the interface is some changes may seem "buried" in a 2nd or 3rd level layer, so if you are not seeing the desired changes you want, you need to double check at which layer (example: basic search vs. advanced search). Branding page makes it relatively easy to sure up the look you want.	Three phases to product implementation: Preparation, Software Installation, and Training & Evaluation. Set-up and implementation requires the installation of an active SSL. Libraries must submit network information for server type(s); configure the firewall for Encore; Register the Encore domain to the IP address of the Encore server. During the software installation period, the vendor installs the Encore and/or Synergy articles software and configures the system for training and evaluation. Before the scheduled date of installation, librarians must select up to 5 databases (or database "portfolios") to be added. (Libraries have the option to include more than 5 databases for a charge). Innovative's	**The review team never had an opportunity to see a Library's admin, nor was a Librarian that has Primo able to put in time for this portion of our review. CCL-EAR hopes to revisit this gap regarding Primo at a future date. Given that, at the forum, the two librarians from CSU Sacramento warned that maintenance of the admin interface regarded constant attention and needed significant staff time.**	Initialization requires time to map the catalog. Serials Solutions admin interface includes a Summon section of which the librarian first needs to put in the databases' at its institution in 360 Core and make sure linking capabilities are up with the 360 Link portions. One main challenge with the administrative setting is that it is slow, with long screens to scroll, and there is no way to preview changes that will not happen until one or two days later. Statistics are Counter and SUSHI compliant and there is a clear option to include Google Analytics for the Discovery site if one wishes for further statistics. There's an option by vendor how you want your results prioritized, but EBSCOhost is not included. Good branding sections to sure up the look you want for the page.	Initialization will take months if you are starting with the entire WMS catalog, but briefer if you already have Worldcat Local and want to simply move to the Worldcat Discovery interface. The administrative interface is three different places: The regular one which has the Collection Manager (linking to articles and databases content to be retrieved), the Config file (which has the Metasearch and search interface features) and the Firstsearch Statistics admin. Collection Manager is where either OCLC gets automatically from vendors or you through a vendor or on your own input your Knowledgebase database files (KBART files). And the separate Metasearch option in Config is where you can select the databases-- some of which require

		After installation, Innovative's SourceManager Tool allows libraries to manage the sources included in Synergy -- request cosmetic display changes and manage addition or removal of resources. Configuration options for Encore/Synergy include ability to choose between 2 "skins" (color schemes) add a footer with branding, search by call number and other standard number, Worldcat Integration, and Google Books preview.			authentication in order for them to be searched within the Discovery interface. Options for branding and look are very limited. Statistics are available for search and logins but do not contain full text retrievals or link clicks.
Availability/ Accessibility of Service	Product is able to be configured to pass web accessibility tests.	Product seems to be able to be configured to pass web accessibility tests.	Product is able to be configured to pass web accessibility tests.	Unsure. Product passes one accessibility tool but will not work with another one.	Product is able to be configured to pass web accessibility tests.
Customer Service and Technical Support (What types of customer and technical support are available for end user and administrator?)	Help option in EDS when students start first search. Help has a table of contents broken up by subjects. Help opens on the page with links to EBSCO Discovery Service Support Center available for end users. Support includes phone numbers, online form to submit a help request, support guides, and video tutorials. In addition, Librarians /	No help option in the product. Innovative, the parent company of Encore Synergy has a "Contact Us" option on their website where users can fill out a form for help or call a phone number. These options are for "innovative products or services". There is no contact for customer support.	Help option in PRIMO when students start first search. The help option was linked to a LibGuide created by the institution. Customer Service option linked from the Ex Libris web page> Contact Us> About Us> Customer Service. This option seems to be for admins and Librarians and covers all the Ex Libris products.	Help option in SUMMON is one page on search techniques. Support Center from ProQuest is the next option for Customer Support where customers can "Submit a Case" or Chat with a Support Representative M-F 8am-6pm ET. Resource seems to be for admins. SUMMON also has a LibGuide for users maintained by	No help option in the product. The Product Support is for Admins and Librarians. There is: Documentation Training FAQ Release notes Planned enhancements Contact Support by email or phone.

	Administrators can find help through the EBSCO Support page through a phone number. Current availability is in Eastern Time and as follows: M-F 24 hour support Sat - Sun 9-5 (eastern time)		.	ProQuest.	
CRITERIA	**Ebsco Discovery Service (EDS)**	**Encore Synergy**	**Primo**	**Summon**	**Worldcat Local and Discovery**
Cost	Consortia Pricing. Yearly Subscription. Individual Database Pricing: Set pricing based on the version of EDS that the college purchases. 1. EDS with Catalog (includes Full Text Finder and 5 free connectors on EBSCO Integrated Search). 2. EDS without Catalog (includes Full Text Finder and 5 free connectors on EBSCO Integrated Search). 3. EDS API (for integration with ILS or other front end system). 4. EBSCOhost Integrated Search additional connector charge with EDS (5 included, after 5, cost per connector). Package Options: Two EDS products are able to be added to	Encore Synergy is only available with the Sierra (Innovative Interface). The discovery service is an add on service to the ILS and the cost is inline with other products, but might be prohibitive for some colleges. Unless a college is looking to change there ILS, Encore Synergy would not be an option as it only works with Innovative's Sierra. The price of this product would include the catalog price and be much higher than the stand alone discovery services.	Primo is only available with Ex Libris Alma The discovery service is an add on service to the ILS and the cost is inline with other products, but might be prohibitive for some colleges. Unless a college is looking to change their ILS, Primo would not be an option as it appears to only works with Ex Libris Alma. The price of this product would include the catalog price and be much higher than the stand alone discovery services.	Consortia Pricing. Yearly Subscription. One time implementation fee. Serial Solutions Summon bundle includes: 360 Core, 360 Link, and Summon Discovery Service. Cost is based on FTEs and available in three tiers. The implementation fee is tiered as well. The cost is inline with other products of this nature, but might be prohibitive for some.	Worldcat Discovery is only available with the Worldshare ILS. The catalog includes Collection Manager (KnowledgeBase, link checker to collections, etc.) and the Meta-search portions of the Worldcat Discovery interface. Unless a college is looking to change their ILS, Worldcat Discovery would not be an option as it only works with the Worldcat Catalog. The price of this product is based on the catalog price and much higher than the stand alone discovery services.

	EBSCO packages. 1. EDS (Includes A-Z service, LinkSource, and 5 free connectors on EBSCO Integrated Search). 2. EDS API (for integration with ILS or other front end system). For the Community College, the package option would be the most reasonable in terms of cost, but even then, might be prohibitive for some.			

Screenshots and Search

EBSCO Discovery Service (EDS) - Screenshots and Search

EBSCO Discovery Service's (EDS) **Basic Search** starts off with a single screen with option of doing a keyword (default), title or author search. There is an autocomplete feature which helps the user identify other related terms and helps reduce typing effort. Search Options are clearly presented via Search Modes and expanders such as for Boolean phrase and SmartText Searching where one can put more than a word and the system runs the search in the citation abstracts or article title if the abstract is not available. Results may be limited to local collection, location, scholarly (peer-reviewed journals), journal name, full-text, date of publication, image quick view types, langauge, and "Only show content I can access." The **Advanced Search** screen is typical with most of discovery systems in a guided-style field interface as the user simply chooses a field from a drop down list. Boolean operators are available to combine search terms.

The left column of the Results List screen is **Refine Results** where a user can revise search by applying limiters and expanders such as by local collection, full-text, and scholarly materials, etc. With each facet chosen one can see the number of results retrieved. Looking at the Results, it starts off with a Research Starter (an optional feature) which is an article from an encyclopedia, mostly from Salem Press Encyclopedia to give users a general overview of the topic. Clicking on the title displays a corresponding detailed record. Abstracts are mostly available on the articles retrieved. EDS has save, print, email, export and citation features. One can create personal Folders (My EBSCOhost) for saving searches and results across

sessions. There is a Search History feature where searches performed may be found where you can combine recent searches and retrieve previous searches save in your personal Folders.

Basic Search

Advanced Search

Encore Synergy - Screenshots and Search

Basic search screen has a Google-like feel with a single search box. The **Advanced Search** screen has guided search fields but limited to title, subject and author fields as what you can find on the basic search screen options of EBSCO's discovery service (EDS). A user can combine concepts by using Boolean operators (and, or, not). Format options are available (see screenshot).

Results may be arranged by relevance, date or title. Clicking on a title gives detailed information on the item. Search results can be refined by availability, format, location, language and tags. To choose a facet, you have to click on the wording itself.   Also on the left column are Related Searches. Further down the column are Recent Searches and Recently Viewed materials. Citations may be collected in a cart (My Book Cart) or email.

ARTICLES Search Tab

There is a separate tab for searching Articles. The left column of the Results list screen has databases listed A-Z with corresponding number that indicates the result found in the database. Users can further refine their search on EBSCOhost's Academic Search Premier by full-text, peer-reviewed, subject, thesaurus term, publication title, company and NAICS/Industry.

Basic Search

Advanced Search

PRIMO (ExLibris) - Screenshots and Search

A clean one search box is what you will see on the **Basic Search**. If one types in multiple words, Primo will return results that contain all of the specified terms. When using the **Advanced Search**, two choices from the drop down menus have to be made before typing up the search term. First is the drop down menu for limiting the term in the following fields: title, author, or subject. The second is the drop down menu for the

location/appearance of the term in the records: contains, is (exact), and starts with. Boolean operators in a dropdown menu may be easily chosen to connect terms. One can limit the search by Publication date by year and range of specific dates, material type and language.

Browse Search in Primo is the library's online catalog. A unique feature is the Virtual (shelf) Browse, where a user is taken to a virtual bookshelf to browse forward and backward through items in the library's local collection so users won't miss invaluable resources.

On the Results List screen, numerous facets (such as resource type, creator, publication date -with a very convenient slider feature, genre, journal title, language) and probably has the most compared with other discovery services, are available on the left column to further refine search. Once a user clicks on "More", located at the end of each facet, a pop-up screen would allow the user to include or exclude items in the facets.
There is an E-shelf feature which allows the user to rerun saved searches, request notification by email or via RSS of new results for a saved query, one just has to create an account or login for items to be saved permanently.

Basic Search

Advanced Search

Browse Search
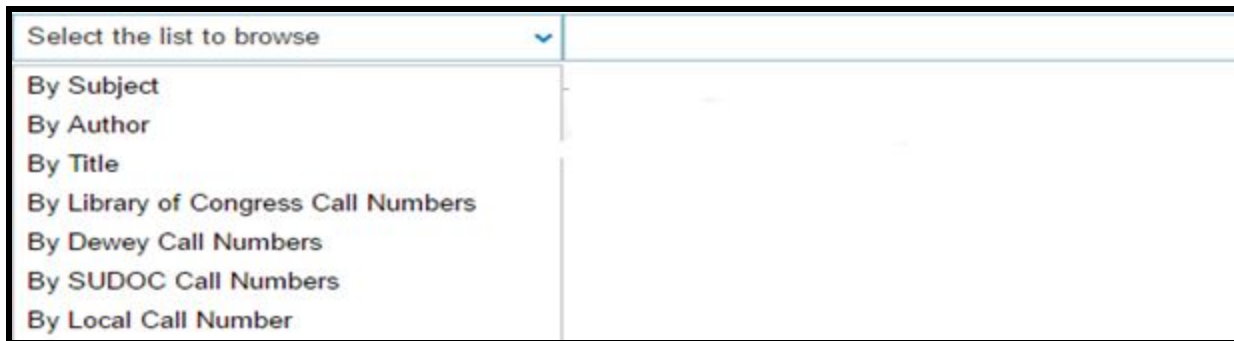
Summon (Proquest) - Screenshots and Search

Summon's **Basic Search** provides an autocomplete feature which predicts the word that a user is typing in. The **Advanced Search** has fields to choose from (see screenshot). Boolean options feature is a typical drop down menu to connect the terms. Search may be limited to publication date range, content type, language, full text, scholarly materials, and library catalog items only. In addition, certain formats may be excluded and allows one to expand results to more than the library's collection.

The result list screen has 3-column layout. The right column contains an entry from a reference material to give user an overview of the topic. Below the reference entry are links to Related Topics. The left column has facets to modify one's search term by content type, publication date, subject terms, language, and library location. Limiting result by Discipline is unique compared to other discovery services. Take note that search facets are customizable by enabling/disabling options at the back end. One finds the result in the center column. Hovering on the title, instead of clicking, displays the abstract and citation information on the right column replacing the reference entry. Read Online, Cite and Email tabs are available features on top of the abstract to retrieve the article. A free RefWorks account may be established to store saved searches permanently

Basic Search

Start your research

Find books, journals, and more   SEARCH

Advanced Search

All Fields ▾		AND ▾
All Fields ▾		AND ▾
All Fields ▾		AND ▾
All Fields ▾		Add a row

Publication date range: from   📅   to   📅

Show content type: ☑ Any Type
                      ☐ Audio Recording
                      ☐ Book / eBook

Language:

Show only: ☐ Items with full text online
              ☐ Scholarly materials, including peer-reviewed
              ☐ Items in the library catalog (includes mostly print and physical material)

Exclude from results :   ☐ Newspaper articles
                          ☐ Book reviews
                          ☐ Dissertations

Expand your results: ☐ Include results from outside your library's collection
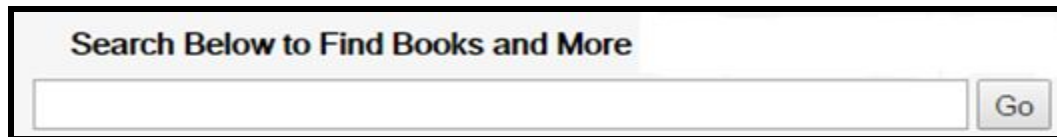
Search   Clear Form   Back to basic search

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WorldCat Local Discovery - Screenshots and Search

WorldCat Local has one box Basic Search interface. The Advanced Search has a variety of search fields users can choose from. Note that Worldcat added the term "phrase" in major fields (ex. author phrase, source phrase, language phrase) making them as field options. Users can limit search by content, formats, publication year and location, including Libraries Worldwide. Also, on the Advanced Search screen users can deselect from the default databases. Database groups may also be configured at the back end.

The Result List has 2 columns. The left one is a column to modify results which seems to be standard location among the Discovery Services. Note that facets may be further subdivided into specific fields which creates or presents a long list. Users can limit result by content, format, date, databases, publication year, language, location and author. Clicking a title on the result list leads to source information, including libraries' catalogs nearby. Items in the search results will include icons for users to quickly add records to a list, email a record or a list of records, copy a record link, or export a citation.

Basic Search

Advanced Search

Keyword   ▼

AND   ▼   Title   ▼

⊕ Add row

Clear   **Search**

Abstract
Accession number
Author
Author Phrase
ISBN
ISSN
Journal Source; Source
Journal Source; Source Phrase
Keyword
Language
Language Phrase
Notes
Publication type
Publication type Phrase
Publisher
Standard number
Subject
Subject Phrase
Title
Title Phrase

Limit your search

☐ 🔒 Only return peer-reviewed articles

Format   All Formats   ▼

Year   [   ]   through   [   ]
                e.g.,2010   Optional

Location   Libraries Worldwide   ▼
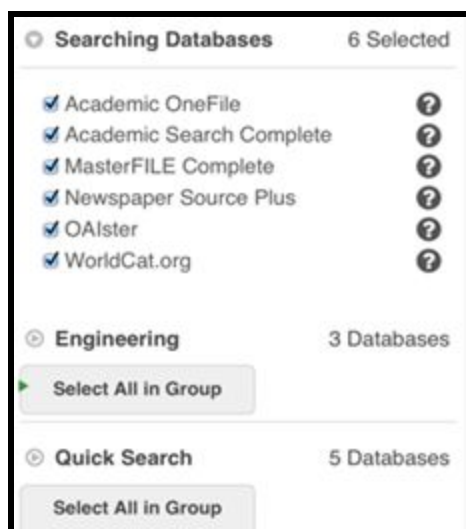
Discovery Searching "Showdown"

Note--please keep in mind there are many variables in place including: 1. Customization decisions of an institution 2. The issues of Open URL compliancy of products out there (that either may be based on the linking aspect of the product or the linked vendor product, itself) 3. The metadata or other aspects that a competitive vendor may suppress to certain discovery systems. 4. That if separate from the ILS, the catalog itself may have certain linking features to ebooks distinct from the discovery vendor, itself. Given that, the review team believed it was still crucial to perform this test just to get some ideas of the searching experience for each product.

Search #1: Climate Change					
	EDS	***Encore Synergy***	***Primo***	***Summon***	***Worldcat Discovery***
# of results	703,159	263 (books & ebooks), 235,199 (academic Search Premier)	981,826	4,228,046	739,944
Relevance	Books listed first, very relevant	Very relevant	Very relevant, all mixed (articles show up on first screen)	Very relevant, but words always appear in the title	Very relevant, words usually appearing in the title. If limited to articles, by the third page, false drops appear earlier than one would expect.

Databases or Links to Them Listed First (after Catalog)	GVRL (first entry by book title, link coming from library catalog), Environment Complete, Business Source Complete	GVRL (first entry by book title), eBook Collection (EBSCOhost), self-identified databases (Academic Search Premier is the default under articles)	EBSCOhost databases, Films on Demand, Ebrary Academic Complete,	public WWW (quality), EBSCOhost (no direct link), Academic OneFile, ProQuest Educational Journals (mostly ProQuest on first screens). If I limit to full text online ProQuest especially dominates on the first screen.	Ebooks come first (Gale Virtual Reference Library, Infobase eBooks, EBSCOhost Ebook Collection, Ebrary). First page had false drops/links to Hathi Public Trust (turns out is in one of Library's databases, but link did not appear). Of articles, EBSCOhost databases populate the list, Gale databases by third list of results (Biography In Context, Literature Resource Center)
Databases or Links to Them Buried (Not Seen in First 2-3 Result Pages)	Sage (#53), ScienceDirect (starting at #95), Opposing Viewpoints in Context, JSTOR, LexisNexis Academic, etc.	As Synergy goes to individual databases as a filter, this is not applicable.	JSTOR (#42), ScienceDirect	Westlaw, Gale Virtual Reference Library, Science InContext, most EBSCOhost databases	ProQuest Databases (Alt-PressWatch, Ethnic NewsWatch, GenderWatch), LexisNexis Academic, JSTOR
Databases or Links to Them Not Listed At All (Note: Reasons can include lack of agreement between vendors, or vendor does not have its content be open URL compliant)	CQ Researcher, Films on Demand, ProQuest eBook Central, CountryWatch	As Synergy goes to individual databases as a filter, this is not applicable.	Appears to have limited "collections", so no article databases listed as a limiter (on the left there are limiters to Films on Demand, eBooks. Oddly enough only 1 result to Gale Virtual Reference Library. DId not see any Firstsearch or CQ Researcher, for sure.	CQ Researcher, CountryWatch, JSTOR, Project MUSE, Infobase Publishing (Issues and Controversies), Films on Demand	While searches CQ Researcher index, no full text links available. Some EBSCOhost databases do not have Knowledgebase files (such as Environment Complete and Food Science Source), Poetry & Short Story Reference Center, CountryWatch,
Link to Article Most Often?	Yes to most. GVRL links to ARTICLE level, but No to the following: Informlit (leads to	Link to Ebook at book level, articles have PDF that usually works (Gale ones do not	At the intermediary level. Sometimes an error screen comes up after SFX gateway.	About 40% of the time directly to article. Never for EBSCOhost articles. Either a 360 Link record	If to an Ebook, 99% of the time successfully links, but always at book level. For articles around 55% of the time. Otherwise goes to

	Google results), Error screen on SciTechConnect, Infotrac (search results matching search term), Opposing Viewpoints (sometimes--goes to search results or error screen), GPO leads to error screens, CGI error screens for some free open access content, Pubmed (search results), LexisNexis Academic (introductory search screen with a citation term entered),	always connect), article links go to article but sometimes screen appears strange.		or have to reproduce search in EBSCOhost. Sometimes even ProQuest articles go to the 360 Link record. Most of the time the 360 Link does not go to article level and goes to the search screen of the database instead. Sometimes goes to an error screen from the database. Westlaw will not authenticate through the system.	journal/magazine level, search screen, or search results (search reproduced). Occasional error screen in a database.
Leads to Subject Terms?	Yes in records and subject terms on left. "Climactic changes" found easily by these methods.	At record level and under Tags on the left side for books and E-books. For articles, no. Maybe once you click on link and go into the database, the record may tell you.	Student has to click on "Details" and even then, not always there. "Topics" on the left by very broad terms. Controlled vocabulary (LCSH, etc.) is very hidden.	Subjects is on the left, but you had to click "See All" to find Climactic Changes (which would have limited search to 82,250)	Left column has only broad topics (discipline areas, really). Given that 6 main topics (before expanding) are: Geography and Earth Sciences, Meteorology, Government Documents, Business & Economics, Engineering & Technology, and Environmental Technology. Subject headings can only be discovered by clicking on Description and scrolling down until you can find clickable links (only way to find "climactic changes.")
Full Text limiter works as it should?	"Only Show Content I can Access" (Library's Collection)--appears to do the trick better than the separate Full Text limiter.	Online. Yes.Do not see any E-titles (ebooks/articles) eliminated with full text limiter.	Review team did not have authentication rights to the Library's databases, so unknown.	Yes.	No. All full text from databases that require permsision/authentication to be searched are automatically eliminated with full text, Chabot College Library, or peer-reviewed limiters. In addition for full text

					some of the full text items that even are searched publicly get eliminated. So much so, it's safe to say at least 50% is eliminated
Noteworthy	Able to limit by TYPE of article (newspaper, magazine, journal, etc.) in left column as well as indexing subject terms by EBSCO that sometimes include other databases such as Gale.			Able to limit by TYPE of article (newspaper, magazine, journal, etc.) Database recommendation was appropriate (GreenFile) listed on top.	

Search #2: Futurologists					
	EDS	***Encore Synergy***	***Primo***	***Summon***	***Worldcat Discovery***
# of results	3,439	0 for books and ebooks, 1036 for Academic Search Premier	122	8309, need to limit to Library catalog to find books	First time it timed out. 373 results, 2nd time.
Relevance	Relevant, but no books appeared. Needed other search terms to find books.	No books. Not really relevant after first three. Occasional relevancy after. Biography In Context only to articles so not really relevant. In fact, hardly relevant or fruitful in any of these databases (closest was Academic Search Premier).	3 books, so articles dominated, but one relevant book showed up as item #2. Very relevant.	Very relevant. Words focused of what's in the title.	Very relevant
Databases or Links to Them Listed First (after Catalog)	EBSCOhost databases (Business Source Complete, MasterFILE Premier, Environment Complete, SocIndex with Full Text), one	See Above.	EBSCOhost databases (general set), ABI/Inform (ProQuest), Ebrary College Complete, LexisNexis Academic, JSTOR (page 2 of	Science InContext, ProQuest Health and Medical Complete, JSTOR, Academic OneFile, Academic Search Complete (via 360Link), ProQuest Newsstand,	eBook Collection (EBSCOhost), false drop to a periodical citation (1994 citation when library only has previous year. Result #3, false drop in Biography In Context

	Sage on first two pages of entries.		results), ProQuest Newsstand and International Newspapers (page 2)	ProQuest Education Journals, LexisNexis Academic, SocIndex with Full Text	(#4)--listed bunches of articles not that one in a results list, error screen from Biography In Context #5), No result from Academic search Premier (#6).LexisNexis (#7 and #8--link to article worked) #9 not full text at all (though sort of claimed MasterFile Premier. Probably not a matching year).
Databases or Links to Them Buried	Opposing Viewpoints in Context (54 articles), JSTOR, LexisNexis Academic	See Above.	ScienceDirect, Sage, Emerald, Films on Demand	Ebrary, Catalog (books), most EBSCohost databases (though a few did show up higher in this search such as the ones on the left)	As there were only 22, buried issue not relevant.
Databases or Links to them Not Listed At All	See Above	See Above	See Above	See Above	See Above
Link to Article Always?	See Above	See Above	See Above	Maybe day was off for climate change as I more often linked to article for EBSCO and others. Still sometmes ended up on error page or search page.	Terrible article linkage on top results. After 22, no more available in collection or full-text. And most of the 22 did NOT link successfully. User needs to use a different SUBJECT heading to find more
Leads to Subject Terms?	On the side is futurologists, forecasting and technological innovations. Granted student may need to be more specific if they were looking for human evolution or cyborgs. New search (or clicking on a	"Did you mean Pathologists?" it asked. Not helpful at all.	Need to go to Details to discover subject headings (buried). In the left column--Topics: None were useful except for Economic Conditions and Forecasts	Disciplines not exactly helpful (outside of business)-left column. Subjects such as forecasts and forecasting may show up in records showing up on the right for each selected for glancing. Not as fruitful as EBSCO or Primo.	Topic list not really fruitful (on left side). Need to go to Description to find Forecasts, Forecasting, Futurism, etc.

	record's subject heading's link) would be the only way to find books.			
Full Text limiter works as it should?	See above	See Above	See Above	See Above	Full text limiter leads to 16 when there should theoretically be 22. #2-5 and #9 led to error screens or publication title.
Noteworthy					Timed out the first time. In general, some searches will time out and lead to an error message.

Screenshots and the Administrative Interface

Note: At this time, the review team only had the opportunity to view and evaluate three administrative interfaces. Most comments about them are described in the comparison grid at the beginning of this review.

EBSCOhost Discovery Services (EDS)

The EDS interface should be very familiar to those working with EBSCO's regular Research databases. Customization features are very numerous with respect to look options of how results should be viewed, whether the user wants basic or advanced features as default. The Holdings Management and Local Collections are where information of key database collections and eBooks are inputted for the Discovery system to search. There are little customization features for determining how results would be prioritized between databases. The separate Full Text Finder feature, which is usually included with an EDS subscription will determine further linking to databases (only here can non-cooperative vendors such as ProQuest can be included). Note: since 2013, EBSCO has an arrangement to search the index of most Gale databases including Academic OneFile, Literature Resource Center, and GVRL, although not all (LCO has yet to be added).

Branding features include some good options of word choice and determination of look and feel of the searching experience. Branding can include the header and footer features, colors, font style, etc. that can match your website's look and feel. Many widgets can be inserted on the right side or can appear as a placard on top of the search results page (the usual default placard is the "Research Starter" entry if the librarian has selected it as a "database"-- an encyclopedia passage (general or subject) that may appear depending on the user's search terms.

Given that,, options are not as numerous for different circumstances as they are in Summon, unless the institution chooses to subscribe to the additional EBSCO Apps and Cloud services. Given that, compared to WMS Discovery, there's a lot more room for determining the brand and look/feel compared to Worldshare.

Worldshare Administrative Interface

In Worldshare, you manage your databases in its Collection Manager. Many databases' collections (such as some EBSCOhost databases, though not all) can be looked up and added into the Library's catalog. If a collection is not here, the librarian can request the vendor to provide compatible spreadsheets called KBART files where the librarian can then add (although the librarian will then need to request the vendor for updates from their end).

Once the librarian selects a collection, the librarian can then view each individual title, choose to omit any titles if they wish, and add individual titles when needed (such as Gale Virtual Reference Library when the library makes a new acquisition).

In Worldshare's Configuration interface, the Librarian selects the databases that can be cross-searched in the Worldshare platform. The librarian selects the Add/Remove databases when the Library's suite changes, or if a database service a Library already subscribes has since been added into the OCLC system.
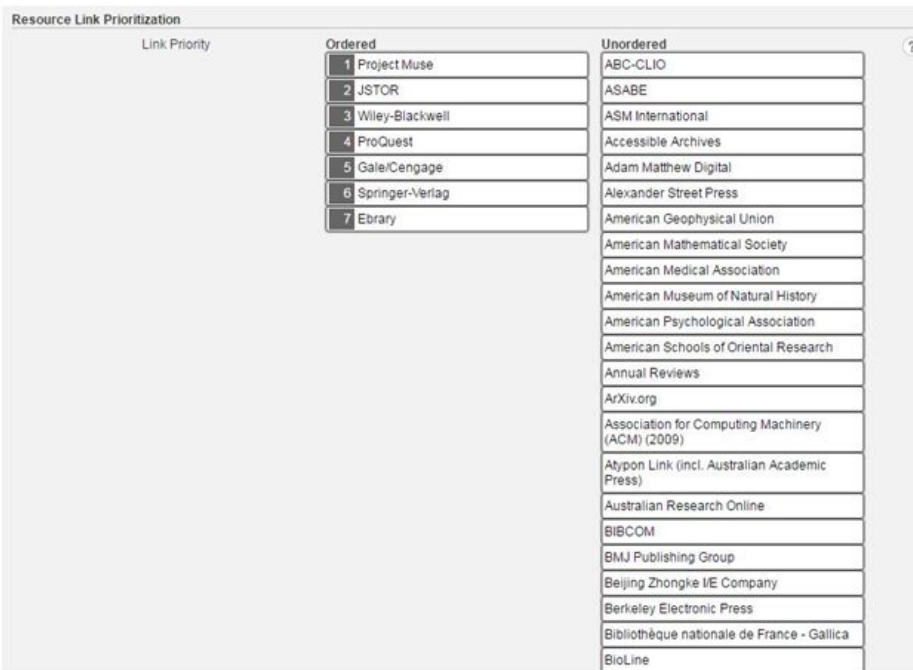
Once the librarian selects Add/drop database, the librarian can then select the databases, which once selected will appear in the right "Selected databases" column. Those databases marked with an asterisk can only be cross-searched in the Discovery platform once the user provides authentication credentials.

Summon

The Summon editor provides ample options for customization of look and feel. The most often being used would be the Settings tab where selections such as the databases being searched, logos (including three sizes for how it would appear in different circumstances), URL for home pages, facets (determining what fields will appear and in what order in the records retrieved) and chat widgets are made.   One unique option not available in the other search interfaces is selecting the language options of the interface. Another is with ProQuest's cooperation with Springshare key areas in the interface allow the librarian to put in URL's and coding that work with Libguides easily (likewise the librarian can submit their Serials Solutions data into Libguides for their Databases A to Z list). Two challenges for the librarian include a very slow speed for the Settings page (and most administrative pages) to load and a minimum of 24 hours for a change to occur (with no preview option). By contrast, Worldshare and EDS changes happen much sooner (often within minutes) and in EDS the librarian can preview changes.

Summon does have a feature where the librarian can prioritize "Resource Links." WMS lacks this feature completely while EBSCOhost's Holdings Management of its Full Text Finder has number prioritization rankings (which do not seem to respond as well as Summon's).

Summary of Shared Concerns

Numerous issues were described that are common for all discovery solutions, including:

● Link revolvers not resolving (granted this problem can rest with either the vendor providing the link resolving, the vendor being linked or the

failure of frequent enough updates between the two vendors. For example, LexisNexis tends to have a very frequent OpenURL failure rate)

● Uneven content neutrality/relevance ranking

● Uneven database/content integration support

● Immature or non-existing course reserve modules (except OCLC's Worldcat Local/Discovery)

- Delay in catalog record updates appearing live (except OCLC's Worldcat Local/Discovery and Innovative's Synergy)
- Known item searches can be surprisingly difficult with all products. It should be noted that with Innovative's Synergy, known item searches for book and media records in the catalog are quite good, with the most relevant items appearing at the top of results
- Call number browse not supported
- System response downtime, especially during peak times or heavy demand (e.g. lots of integrated databases).
- Substantial tech support requirements (e.g. staff resources) for implementation and maintenance, including regular updates to sync the discovery solution with the underlying ILS (except OCLC, because they're closely linked)
- Discovery not quickly adopted or embraced by librarians or patrons

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Conclusion

The review of Discovery products in Spring 2016 proved to be more difficult than first anticipated. Some products were true Discovery Services while other products were linked to ILS systems and would only work if an institution had that ILS system. Content suppression among competing vendors created problems in ranking coupled with some content not showing up at all based on indexing issues between vendors. Each system is highly customizable and the reviewers were sometimes left wondering if the product was designed a certain way or if an institution had set it up a certain way. All of these variables made it difficult to have a true comparison of Discovery Systems, but the reviewers did the best they could with what they had. With that being said, there was no Discovery Service that outranked the other. There were a lot of issues discussed (SEE: Summary of Shared Concerns above) and it seemed that Discovery Services have room to grow. Institutions considering a Discovery Service are encouraged to look at this review, the notes from the CCL-EAR Discovery Services meeting on 2/4/2-16 and the CCL-EAR survey results as well as their own institutions ILS and other products. We hope these resources can be a guide when considering a Discovery Service. We would also encourage Institutions to reach out to other colleges using Discovery Services for more detailed information.

Other Reviews

Bibliography