# Web Scale Discovery Tools

## **Prem Chand**

#### **Abstract**

Web scale discovery services for the library environment have the capacity to more easily connect researchers with the library's vast information repository. This includes locally held and hosted content, such as physical holdings, digital collections, and local institutional repositories. Perhaps more significantly, web scale discovery also accesses a huge array of remotely hosted content, often purchased or licensed by the library, such as publisher and aggregator content for tens of thousands of full-text journals, additional content from abstracting and indexing resources, and content from open access repositories. This paper defines web scale discovery and highlights importance of discovery tools being used by the libraries.

**Keywords:** Web Scale Discovery, Discovery Tools

#### 1. Introduction

Librarians around the world face an onerous task in handling the complex nature of information. Given the complex nature of electronic resources, the librarian's job of providing access can be quite challenging. This complexity is reflected on library websites, which typically feature an online public access catalogue (OPAC) as well as lists of database links, all of which function independently of one another. These distinct access choices require consolidation to facilitate efficient and effective searching for users who tend to engage in "Googlelike" search behaviours. Discovery tools have been developed to address this problem. A couple of years ago, libraries were excited by the idea of "next generation catalogues" that included "Web 2.0" features like tagging, submission of reviews, facets etc. Today Libraries are discussing beyond new generation catalogues and exploring discovery tools, both open source and proprietary web scale discovery tools developed by OCLC, Serials

Solutions, Ebsco, and Ex Libris ,Encore and , Aquabrowser etc. Libraries are beginning to adopt new discovery tools to effectively and efficiently streamline the search process in the hopes of facilitating better search results. Web scale discovery services are a tool with major potential to transform the nature of library systems. These services are capable of searching quickly and seamlessly across a vast range of local and remote content and providing relevancy-ranked results in the type of intuitive interface that today's information seekers expect.

A notable advantage of discovery tools is that they can provide access not only to proprietary electronic content but to local collections as well. In their quests for information, users are more likely to use search engines than local metadata tools which are essential for finding unique materials held locally. It is suggested that providing access to these materials should become the focus of libraries, if they are to remain viable in a changing information world. Libraries around the world are excited by the potential of web scale discovery tools.



8<sup>th</sup> Convention PLANNER-2012 Sikkim University, Gangtok, March 01-03, 2012 © INFLIBNET Centre, Ahmedabad

# What Is Web Scale Discovery?

Connecting users with the information they seek is one of the prime objective of our profession. Succinctly put, Web scale discovery can be considered as deep discovery within a vast ocean of content. The mechanics behind Web scale discovery are not necessarily new, though a commercial application of this approach within the library environment—efficiently and, it's hoped, effectively is very new. It certainly holds the potential to be the evolution that libraries have long sought for information discovery.

Web-scale discovery services enable single search box queries that reveal content from a variety of sources. Discovery tools, allow the user, through a single search box, to search a base index of metadata as well as many of the library's digital resources such as proprietary databases, the catalogue, and institutional repositories. Mimicking the Google experience, results from both internal and external sources can be served up in a single relevancy-ranked batch.

Web scale discovery services for the library environment are an evolution holding great potential to easily connect researchers with the library's vast information repository. By preharvesting and centrally indexing content sourced across multiple silos, Web scale discovery services hold the promise to fundamentally improve and streamline end user discovery and delivery of content. Such content includes physical holdings, such as books and DVDs; local electronic content, such as digital image collections and institutional repository materials; and remotely hosted content purchased or licensed by the library, such as e-books and publisher or aggregator content for thousands of full-text and abstracting and indexing resources.

Web scale discovery services provide discovery and delivery services that often have the following traits:

- Content: These services harvest content from local and remotely hosted repositories and create a vastly comprehensive centralized index—to the article level—based on a normalized schema across content types, well suited for rapid search and retrieval of results ranked by relevancy. Content is enabled through the harvesting of local library resources, combined with brokered agreements with publishers and aggregators allowing access to their metadata and/or full-text content for indexing purposes.
- **Discovery:** These services have a single search box providing a Google-like search experience (as well as advanced searching capabilities).
- **Delivery.** These services provide quick results ranked by relevancy in a modern interface offering functionality and design cues intuitive to and expected by today's users; such as faceted navigation to drill down to more specific results.
- Flexibility. These services are agnostic to underlying systems, whether hosted by the library or hosted remotely by content providers. These services are open compared to traditional library systems and allow library greater latitude to customize the services and make the service its own.

# 3. OPAC, Federated Search Engine and Discovery Tool

A discovery tool is often referred to as a stand-alone OPAC, a discovery layer, a discovery layer interface, an OPAC replacement, or the next generation catalog (NGC). Unlike the front end of an integrated library system or ILS OPAC, a discovery tool is defined as a third party component whose purpose is to "provide search and discovery functionality and may include features such as relevance ranking, spell checking, tagging, enhanced content, search facets" (OLE Project, 2009). Discovery tools should not be confused with federated search products. The former promise to provide a single interface to multiple resources based on using a centralized consolidated index to provide faster and better search results, while the latter search remotely, rely on connectors, and provide only partial and limited solutions. In addition, a federated search tool usually requires user logon and works in a protected environment, while a discovery layer is open to the public

## 4. Why Web Scale Discovery?

Why users begin their research using Google and Wikipedia when they know your library has better quality resources? They want immediate and relevant results without knowing anything about the location of the content they are searching. There is, of course, a downside to this ease of use. The results they receive do not represent the credible, reliable content your library has to offer.

User's expectations are increasingly driven by their experiences with search engines like Google and online bookstores like Amazon. When end users conduct a search in a library catalogue, they expect their searches to find materials on exactly what they are looking for; they want relevant results.

Unfortunately, searching library collections often has been confusing and slow, with many steps involved: knowing what to search, where to search, and how to navigate different types of interfaces. The continuing proliferation of formats, tools, services, and technologies has upended how we arrange, retrieve, and present our holdings. Our users expect simplicity and immediate reward and Amazon, Google, and iTunes are the standards against which we are judged. It is our responsibility to assist our users in finding what they need from different locations. Web scale discovery can secure library's role as the primary place for research and help users in finding relevant information. It provides a complete family of e-discovery tools that can help libraries to provide a comprehensive approach to accessing library collection.

# 5. Discovery Tool Evaluation Check-list

The web discovery tools are new and under development. While there is not yet much user data, encouraging information has been learned about the capabilities and limitations of these tools. Vendors keep on announcing about the new features of their tools, highlighting expanded content agreements, interface improvements, and important new customers. Proper evaluations of these tools are yet to be done. Following points can be considered for evaluation of discovery tools.

I. Single point of entry for all library information. The library catalogue should be a single search or federated search for all library materials, including pointers to the articles in electronic databases as well as records of books and digital collections. One search should retrieve all relevant materials. Presently, patrons have to search the catalogue for books and videos, databases for journal articles, and digital collections and archives for local images and materials.

- **ii. State-of-the-art web interface.** Library catalogue should have a modern design similar to commercial, e-business sites. This criterion is highly subjective and as such is difficult to quantify. A next-generation catalogue should look and feel like popular sites such as Google, Netflix and Amazon.
- **iii. Enriched content.** Library catalogue should include book cover images, user driven input such as comments, descriptions, ratings, and tag clouds. Traditionally, only professionally trained cataloguing librarians have the ability to create or add content to bibliographical records.
- iv. Faceted navigation. Library catalogues should be able to display the search results as sets of categories based on some criterion such as dates, languages, availability, formats, locations, etc. Users can conduct a very simple, initial search by their preferred keyword method and then refine their results by clicking on the various results facets.
- v. Simple keyword search box on every page. The next generation catalogue starts with a simple keyword search box that looks like that of Google or Amazon. A link to advanced search should be provided. The simple search box should appear on every page of the interface as users navigate and conduct searches. Though this feature is considered to be one of the important characteristics in a next-generation catalogue, in reality it is not implemented widely. Our survey of sites shows that most libraries do not offer a simple keyword search box as a default start page. Librarians prefer an advanced search and feel that the quick search is more likely to produce results with less precision.

- vi. Relevancy. Librarians complain that OPAC relevancy results are problematic or that they do not understand how relevance is determined. The next-generation catalogue does better in relevancy ranking with increased precision. In addition circulation statistics should influence the relevancy results. More frequently circulated books indicate popularity and usefulness. They should be ranked higher in the display. Items deemed important enough to have multiple copies should lso receive higher relevancy ranking.
- vii. Did you mean . . .? A spell-checking mechanism should be present in a next-generation catalogue. When an error appears in the search, there should be a pop-up with the correct spelling or suggestions from a dictionary. Clicking on any of these runs a search.
- Commonplace in e-commerce sites, the customer is shown additional items with a suggestion like "Customers who bought this item also bought . . . "Likewise, a next-generation catalogue should recommend books for readers on transaction

viii. Recommendations/related materials.

- logs. This should take the form of "Readers who borrowed this book also borrowed the following . . . " or a link to "Recommended Readings".
- ix. User contribution. The next-generation catalo allows users to add data to records. The user input includes descriptions, summaries, reviews, criticism, comments, rating and ranking, and tagging or folksonomies. Today's users increasingly look for what other users have to say about items found online, and value what they feel to be their peers' review of items. Tagging clouds can serve as access points and descriptive keywords leading to frequently used items.

**x. RSS feeds.** Really Simple Syndication allows users to connect themselves to content that is often updated. Next-generation interfaces include RSS feeds so that users can have new book lists, top-circulating book lists, canned searches, and "watch this topic" connections to the catalogue on their own blog or feed reader page.

## xi. Integration with social network sites.

When a library's catalogue is integrated with social network sites, patrons can share links to library items with their friends on social networks like Twitter, Facebook and Delicious.

**xii. Persistent links.** Next-generation catalogue records contain a stable URL capable of being copied and pasted and serving as a permanent link to that record

## 6. Discovery Tools

New discovery tools to provide a single interface to multiple resources based on using a centralized consolidated index to provide faster and better search results. There are commercial and open source tools which are being used by libraries. I have made an attempt to list open source and propriety discovery tools used by libraries across the world. In India, except, Indian Institute of management, Ahmedabad Library is using EBSCO discovery tool, apart from IIM, no other library is suing such tool.

# 6.1 Open Source Discovery Tools

Several open source discovery tools are being used by libraries. Some of the important open source discovery tools are:

# 6.1.1 Blacklight

It is a discovery interface, next-generation catalog especially optimized for heterogeneous collections.

Library catalog can be used as a front end for a digital repository, or as a single-search interface to aggregate digital content. The University of Virginia, Stanford University, Johns Hopkins University, and WGBH are the principal contributors to the code base and use it heavily at their institutions. There are dozens of sites worldwide that use Blackligh.

# 6.1.2 Fac-Back-OPAC (Kochief)

Fac-Back-OPAC is a faceted back- up OPAC. This advanced catalogue offers features that compare favourably with the traditional catalogues for today's library systems. Fac-Back-OPAC represents the convergence of two prominent trends in library tools: the decoupling of discovery tools from the traditional integrated library system and the use of readily available open source components to rapidly produce leading-edge technology for meeting patron and library needs. Built on code that was originally developed by Casey Durfee in February 2007.

# 6.1.3 LibraryFind

Oregon State University (OSU) Libraries has designed and deployed LibraryFind, a meta search system. It has important features like; Built-in OpenURL resolver, ability to search locally index collections, web-based administration and customizable user interface

## 6.1.4 Rapi

An open-source project of the WING group in the School of Computing, National University of Singapore licensed under the MIT license. Rapi provides an OPAC package that allows you to build a Lucene index from your MARC files. The user interface supports a variety of features including

tabs, an overview, details view and a suggestion bar etc.

#### 6.1.5 Scriblio

Scriblio formerly known as WPopac is an award winning, free, open source CMS and OPAC with faceted searching and browsing features based on WordPress. Scriblio is a project of Plymouth State University, supported in part by the Andrew W. Mellon Foundation.

#### **6.1.6 SOPAC**

Social Online Public Access Catalog is a module for the Drupal CMS that provides true integration of library catalog system with the power of the Drupal content management system. It has features of **tag, rate, and review** of the library holdings.

## 6.1.7 VuFind

It is an open source library search engine that allows users to search and browse beyond the resources of a traditional OPAC. Developed by Villanova University, version 1.0 was released in July 2010 after two years in beta. VuFind operates with a simple, Google-like interface and offers flexible keyword searching. While most commonly used for searching catalog records, VuFind can be extended to search other library resources including but not limited to: locally cached journals, digital library items, and institutional repository and bibliography. The software is also modular and highly configurable, allowing implementers to choose system components to best fit their needs. A few libraries and institutions running and testing VuFind include the Georgia Tech Library, the London School of Economics, the National Library of Ireland, Yale University, and the DC Public Library.

## 7. Proprietary Web Scale Discovery Tool

OCLC WorldCat Local, released in November 2007, can be considered the first Web scale discovery service. Another product, Serials Solutions Summon, was released in July 2009, and together these two services were the only ones publicly released when the Discovery Task Force began its work. The three additional vendors were working on their own version of a Web scale discovery service and recently released. They are EBSCO EDS in January 2010, Innovative Interfaces Encore Synergy around May 2010, and Ex Libris Primo Central in June 2010. While each of these three were new in terms of Web scale discovery capabilities, each was built, at least in part, upon earlier systems from the vendors. EDS draws heavily from the EBSCOhost interface (the original version of which dates back to the 1990s), while the base Encore and base Primo systems were two next generation catalogue systems each debuting in 2007. The brief description of these tools is given below:

#### 7.1 WorldCat Local-OCLC

OCLC released the initial version of WorldCat Local in November 2007, following an earlier development period with trials dating to spring 2007. The experience of a pilot development partner, the University of Washington, was profiled in the August 2008 issue of Library Technology Reports. The UW pilot went live in spring 2007, and thus, for the library environment, represents the first single search discovery service combining millions of physical and electronic items within a single search result set. Approximately thirty million article-level items were intermingled with the WorldCat database in the UW pilot. In 2009,

OCLC ramped up WorldCat Local and entered into additional partnerships to include substantially greater amounts of article-level content, all within an interface utilizing a single search box, relevancy-ranked results, and a back-end centralized index. Two versions of the discovery platform exist, the full-fledged WorldCat Local and the streamlined WorldCat Local "quick start." Over 1,000 sites in North America and Europe have implemented either WorldCat Local or WorldCat Local "quick start".

Regardless of version, the interface and discovery service for WorldCat Local is hosted by OCLC. Product support is offered through various modes (phone, e-mail, website) and available 24/7. Assuming a library has holdings within the WorldCat catalog and a FirstSearch WorldCat subscription, WorldCat Local "quick start" is included in an institution's base subscription at no additional cost. The full version of WorldCat Local has a one-time implementation fee and is available as a yearly subscription, with pricing based on the library's user population. Regardless of version, OCLC updates and enhancements are provided; interface and functionality updates are currently provided and installed on a quarterly basis.

The central index associated with WorldCat Local includes nearly a half billion items (over half of these being articles), with content sourced from journal publishers, article citation aggregators, and the WorldCat database. Updates to content, ranging from daily to annually, are provided by publishers; once provided, such content is loaded and indexed within a few days at most. Article citation content is sourced from four major pools. First, journal publisher agreements with Springer, Taylor and Francis, Wiley, IGI Global, Nature, Sage, Emerald,

and others contribute over seven million records directly into the WorldCat Local central index. Second, article citation aggregators such as ArticleFirst, Medline, ERIC, British Library Inside Serials, JSTOR, OAIster, and Elsevier provide over 100 million citations open to search to all WorldCat Local customers. Third, the WorldCat database contains millions of article citation records. Content from the first three pools is discoverable for all WorldCat Local customers; content from the final pool is scaled and included in the discovery experience for those libraries that maintain matching subscriptions to these third-party databases.

WorldCat Local provides access to more than 740 million items, including articles from partners such as EBSCO, Elsevier, Gale, H.W. Wilson, and LexisNexis; the digital collections of groups like HathiTrust, OAIster, and Google Books; and the collective resources of libraries worldwide.

Users can find library holdings in search results from Google, Yahoo!, Bing, and Google Books using a portable search box that makes these library holdings visible on any website. They can also access materials from wherever they are with the WorldCat Local mobile interface. The content from over 180 directly licensed databases and collections (from over 61,000 journals) are incorporated into the central pre-aggregated index, some or all of which are available for search and discovery, dependent as mentioned on local library subscriptions. In addition to commercial articlelevel content, WorldCat includes content, searchable by all customers, from various wellknown open-access repositories, such as materials from OAIster and Hathi Trust. Over 4.5 million ebook metadata records from mass digitization providers such as Google, major aggregators (such as NetLibrary, ebrary, and Ingram), and additional commercial e-book publishers are also included. OCLC is working with over a dozen partners on expanding the functionality of the WorldCat knowledge base to facilitate sharing article content.

WorldCat Local works with an institution's proxy server (including the EZproxy proxy server, marketed by OCLC) to enable offsite authenticated access to licensed resources. WorldCat Local works with the library's link resolver and the WorldCat knowledge base as a broker to licensed content; customers must have library holdings record information for their serials titles in WorldCat. OCLC has an eSerials Holdings service (free with OCLC cataloguing membership) to facilitate adding and updating library holdings information (from an A-Z journals list or a link resolver database) to the WorldCat catalogue.

# 7.2 Summon (Serial Solutions)

Serials Solution began dedicated development of its Web scale discovery solution, Summon, in 2008, building the product from scratch as a new platform. Public announcement occurred in January 2009, and after work with development partners, Summon entered general release in July 2009, making it one of the early entrants into the library Web scale discovery environment. Summon has over 120 committed customers in eighteen countries; 80 of these sites are currently live.

Summon currently has a very large centralized index, providing access to content sourced from a multitude of commercial databases and publishers. This material includes content from 94,000+ journals and 6,800 publishers. As of August 2010, the Summon index numbers over half a billion

items. By item count, the two largest content types are newspaper articles and journal articles, though various other content types, such as books, theses and dissertations, conference proceedings, music scores, and audiovisual materials are also present. A regularly updated list of participating publishers and journal titles indexed can be accessed at the Serials Solutions website. Agreements have been made with many major content providers and aggregators; chief providers participating in Summon include ProQuest, LexisNexis Academic, and Gale (which include around 4,000 publishers). Nearly 100 academic publishers are involved, including Springer, IEEE, Emerald, ingentaconnect, Sage, and Taylor and Francis. Additional key players include Thomson Reuters Web of Science and ABC-CLIO. In addition to licensed commercial content, the Summon service also indexes several open-access repositories, such as the DOAJ (Directory of Open Access Journals), Hindawi Publishing, arXiv.org e-Prints, and the Hathi Trust materials. Serials Solutions notes that over 10 percent of members of the Association of Research Libraries use the Summon discovery service and that the Summon index covers between 85 and 95 percent of the breadth of their collections. At the time of this writing, Serials Solutions is working with Elsevier on a trial related to incorporating Elsevier's direct content into the index. A large amount of Elsevier content is already present within the Summon index, such as 100 percent of the ScienceDirect Freedom Collection and approximately 90 percent of Scopus.

Serials Solutions seeks rights to index the full text from the content providers it works with and indicates that it indexes the full text of the vast majority of content providers. In addition, the Summon service indexes and utilizes fielded metadata provided by publishers and aggregators. Serials Solutions utilizes automated processes that allow new content to be added and indexed quickly. Different content providers provide new content on a variable basis, and content is indexed and included in the Summon service on a schedule appropriate to the content, which, for example, may be daily for newspaper content and monthly for a monthly journal.

The Summon index is open to search and does not require initial user authentication. In a usual configuration, Summon works with library's link resolver to broker access to full-text content owned or licensed by the library, and works with the library's proxy server or alternate authentication method to enable access to licensed content by offsite users. For library customers that subscribe to other Serials Solutions products, such as 360 MARC Updates and 360 Core services, these products contain holdings information to help inform rights management.

## 7.3 EBSCO Discovery Service (EDS)

EBSCO Discovery Service (EDS), launched in early 2010, provides web-scale discovery by creating a unified, customized index of information resources available in an institution that is made searchable through a single search box using a powerful search engine.

EBSCO Discovery Service<sup>TM</sup> (EDS) creates a unified, customized index of an institution's information resources, and an easy, yet powerful means of accessing all of that content from a single search box. The ability to create these custom solutions is achieved by harvesting metadata from both internal (library) and external (database

vendors) sources, and creating a pre-indexed service of unprecedented size and speed. Although the resulting collection is massive in size and scope, the fact that it is indexed directly on the EBSCOhost servers allows for exceptionally fast search response times, and the ability to leverage the familiar powerful features of the EBSCOhost user experience - across all resources.

It is offered as a hosted service and require user authentication for searching the index. Limited edition of EDS is available for unauthorized users in guest mode with limited search capabilities. The EDS content include metadata from journal and magazines, index of all the EBSCO host databases that the library subscribes to, other databases that library subscribes like Alexander Street Press, LexisNexis, Cambridge University Press, IEEE, Ingenta Connect, Springer, Elsevier, Taylor & Francis, Wiley, NewsBank, Readex, etc. It also indexes institutional archives / repositories, records from the library catalogue and other additional content like book jacket images, book records, entertainment records, annotations, family keys, subject headings, demand information, awards, review citations, etc. It also indexes content from various open access repositories like DOAJ, OAISTER, and arXiv.org.

EDS service includes content from nearly 20,000 providers, in addition to metadata drawn from tens of thousands of book publishers. This base index presently includes metadata for more than 45,000 journals, more than 800,000 CDs/DVDs, nearly six million books, and more than one hundred million newspaper articles. EDS can harvest local collections, such as ILS catalog records, digital collections, and institutional repositories based on various underlying schema, such as MARC, Dublin

Core, XML, and EAD. EDS utilizes various harvesting and delivery mechanisms, such as OAI-PMH and FTP. The search results are ranked by relevancy based on the frequency of term in documents, field in which the term appears and uniqueness of a word in the overall index. The relevancy is also determined based on the currency, number of times cited, type of document, etc.

The EDS provides an administrative interface for customization of the interface as per the library requirement, like layout, colour, logo of the library, etc. The interface also provides faceted navigation, search refinement, export to various citation formats, printing, e-mailing and adding to cart, RSS feeds, spelling suggestions, option for adding widgets and also a mobile interface for searching on mobile devices.

#### 7.4 ExLibris Primo Central

Ex Libris began development of its next-generation discovery layer, Primo, in 2005, with official public release occurring in 2007; Primo version 3 was released in spring 2010. Primo Central, Ex Libris's Web scale discovery component, was officially released in mid-2010. Primo Central extends the base Primo discovery experience by also searching a large pre-harvested central index of article-level content from a variety of publishers and aggregators Hundreds of libraries worldwide have implemented Primo. The Primo discovery platform harvests and indexes local library collections, such as bibliographic records, digital collection materials, and items within institutional repositories, and provides a common interface for discovery of these materials. In addition, Primo can be configured to search remote repository indexes and blend the library's local collections with the remote index results. Primo Central, Ex Libris's Web scale

discovery component, was officially released in mid-2010. Primo Central extends the base Primo discovery experience by also searching a large preharvested central index of article-level content from a variety of publishers and aggregators. Near about fifty customers have signed on as subscribers to the Primo Central service, with several customers already live on Primo Central.

It has approximately 300 million items obtained from primary and secondary publishers and aggregators as well as open-access information repositories. Some notable examples include content sourced from Accessible Archives, the Association of Computing Machinery, BioOne, ebrary, Gale, IGI Global, LexisNexis, Oxford University Press, Springer, Web of Science (Thompson Reuters), and Wiley-Blackwell. A pilot project with Elsevier was slated to begin in fall 2010. A content focus for the Primo Central index has been scholarly journals, though e-books, newspaper articles, and reviews are also incorporated into the index. Open-access materials from sources such as the arXiv.org e -Prints, Hindawi Publishing , DOAJ (Directory of Open Access Journals), and the extensive HathiTrust materials are either already incorporated into the Primo Central service or on the road map for inclusion. Primo Central does not yet index the full text of major e-book content providers, though it may in the future.

Primo Central has been indexing number of the EBSCO databases. But recently, EBSCO has changed their strategy and will no longer permit third-party discovery services to load and index their content. Premo Central has decided that from 1st January 2011, it will cease hosting of the EBSCO content in the Primo Central Index. ---

The search results in Primo are listed by relevance which calculated based on Primo's proprietary relevancy-ranking algorithm that includes but is not limited to factors such as term frequency, field weighting, number of times a record has been accessed, and currency. It also considers peer-review status of journal articles for giving relevance.

The Primo hosted service provides customization of the user interface with change in colour, library branding, etc. Libraries have freedom to completely redesign the user interface to give it localized appearance using the APIs and Web services layer of Primo Central. The search results provide option for refinement by facets, did you mean suggestions, exporting of records to various bibliographic management tools, tagging and commenting the records and RSS feed for searches and a mobile interface for mobile users. It also provides option for sharing items on sites like delicious, Connotea, etc. An optional scholarly recommender service, the bX Recommender service can also be integrated into it to provide recommendation of related items generated from the analysis of extensive SFX link resolver usage logs. The results provides additional information like Details, Reviews and Tags, Additional Services, availability and also a preview of the webpage in case of the online resources.

# 7.5 Encore-Innovative Interfaces Inc.

**Encore** is the OPAC 2.0 product from Innovative Interfaces Inc., vendor of the Millennium integrated library system. Encore operates on top of the online catalogue but is integrated with the ILS and does not require separate data export or re-indexing. It provides relevance ranking, faceted searching by format, language and collections, user tagging, and

"best bet" suggested resources as well as dynamically generated search suggestions.

## 8. Survey on Web discovery Services:

NFAIS has recently done a survey of familiarity of discovery services in April 2010. Forty-one members completed the survey, representing 30 unique, identifiable organizations. The breakdown is as follows: A&I Service (21), Publisher (3), Library (1), Vendor (1), and Other (4). Twenty-four (58.5%) of the respondents were the Assembly representative for their organization. The result of the survey of familiarity of major web discovery tools is given below:

Summon: 78% (32) EBSCO Discovery Service: 70.7% (29) WorldCat Local: 70.7% (29) Primo Central: 43.9% (18) Encore Discovery: 12.2% (5) Blacklight: 7.3% (3) LibraryFind: 2.4% (1) Other: 9.8% (4)

## 9. Conclusion

While still fairly new, discovery tools are rapidly gaining content, adding enhancements, and growing their customer base. Libraries have adopted technologies that transform their services, and discovery tools are the next innovation. The unified index enables libraries to provide easier access to their resources at a time when mobile devices are beginning to change how we work. These discovery tools open the door for digital natives to encounter library-friendly services with a low barrier to entry. When we look at the new discovery tools, we should remember what drives information decisions in our everyday lives

#### References

- Alling, Emily, and Rachael Naismith. 2007.
  "Protocol Analysis of a Federated Search Tool: Designing for Users." Internet Reference Services Quarterly 12 (1/2):195–201
- 2. Breeding, M. (2007), "Introduction", Library Technology Reports, Vol. 43 No. 4, pp. 5-14.
- 3. EBSCO Discovery Service: http:// www.ebscohost.com/ (Accessed on 5/1/2012)
- 4. Ex Libris Primo Central: http:// www.exlibrisgroup.com/ (Accessed on 5/1/2012)
- 5. Innovative Interfaces Encore Synergy: http://encoreforlibraries.com/products (Accessed on 5/1/2012)
- 6. Jung, Seikyung, Herlocker, Jonathan L, Webster, Janet, Mellinger, Margaret and Frumkin' Jeremy. "LibraryFind: System design and usability testing of academic metasearch system". Journal of the American Society for Information Science and Technology. Volume 59, Issue 3, pages 375–389, 1 February 2008.
- 7. LibraryFind: http://libraryfind.org/home (Accessed on 20/12/ 2011)
- 8. Mary S. Wood, Mary S."Discovery Tools and Local Metadata Requirements in Academic Libraries" SLIS Student Research Journal. Vol 1, issue 1. Article 3.
- 9. National Federation of Advanced Information Services: www.nfais.org (Accessed on 30 / 12/2011)
- 10.OCLC WorldCat Local: http://www.oclc.org/worldcatlocal/default.htm (Accessed on 5/01/2012.

- 11. Pradhan, Dinesh Ranjan, Kruti Trivedi, Kruti and Arora Jagdish. "In: Proceedings of 8th International CALIBER 2011: Towards Building a Knowledge Society: Library as Catalyst for Knowledge Discovery and Management". (eds. Arora, J., et al). Ahmedabad, INFLIBNET, p. 132-145, 2011.
- 12. Serials Solutions Summon: http://www.serialssolutions.com/summon/ (Accessed on 5/01/2012)
- 13. The Open Library Environment Project: Final Report, October 20, 2009. http://kuali.org/sites/default/files/old/OLE\_FINAL\_Report.pdf (Accessed on 5/01/2012)
- 14. Vaughan, Jason, "Investigations into Library Web Scale Discovery Services. Information Technology and Libraries. Preprint. http://www.lita.org/ala/mgrps/divs/lita/ital/italinformation.cfm (Accessed on 5/1/2012)
- 15. Vaughan, Jason. "Web Scale Discovery Services Jason Vaughan. Library technology report" 2011.Vol 47, Number 1, January 2011.pp. 5-47.
  - Yang, S Q. Evaluating and comparing discovery tools: how close are we towards next generation catalog? Library Hi Tech, Vol. 28 No. 4, 2010 . pp. 690-709.

#### **About Author**

Mr. Pram Chand, Librarian, Indian Institute of Advanced Study, Shimla. E-mail:chanprem@gmail.com