



Integrated Information Discovery Tools in Indian Libraries: A case study

Ms. Sangeeta Namdev Dhamdhere¹ and Dr. Ramdas Lihitkar²

¹ Modern College of Arts, Science and Commerce, Ganesh-khind, Pune, India
modernlibrary.sangeeta@gmail.com

² Government College of Science, Nagpur
rlihikar1975@gmail.com

ABSTRACT: *In distance learning and online education environment libraries needs to provide the right information on a single platform to its users from all resources or databases available in the library in a minimum of time. A library portal is single-user interface for accessing a wide variety of electronic resources, both within and outside the library. A few federated search engines like EBSCO Discovery service, Summon (web scale discovery service), Knimbus, Mendeley, FedGate, ABCD open source software, Google CSE etc are being used by libraries to give access to all subscribed or free online e-resources as well as library catalogues, archives' and other reading materials in the library to save the time of readers and give easy access to multiple databases and resources through federated search tool. In this article the author discussed about the selected commercial as well as open source discovery tools used in Indian Libraries and a case study of Modern College of Arts, Science and Commerce, Ganeshkhind for using Google CSE for their library portal resources*

Keywords: *Information Discovery Tools, E-discovery tools, Custom Search Engine, FEDGATE, KNIMBUS, E-Discovery Tools, Digital Libraries, Indian Libraries, Library portals, Google CSE.*

INTRODUCTION

Many resources in libraries are now available online on the internet in the form of ebooks, ejournals and databases which created a need of a federated search tool for all different types of databases which the library has in its holding and has subscribed online. Digital library softwares like DSpace, Greenstone, E-Prints, etc which are

used widely all over the world are not enough to handle all e-information and library holdings and to bring the libraries online. New software companies are working on finding solutions for a single search platform for all the resources in library. Western countries libraries are using commercial and in-house softwares designed by their IT team as per their readers' requirements. In India very few libraries are having separate IT team or staffs. In most of the Indian libraries the digital library is managed by library professionals using DSpace, Greenstone or E-Prints Software and other content management softwares like Joomla, Drupal etc.

In distance education students are informed and given access to study material online. In Coursera or other distance certification course systems the study material is available on their portal as separate attachments (pdfs, ppts, ebooks, videos or links). As per a Knimbus study about 53% users think that finding the exact contents from all library and online resources is the biggest hurdle. A single search engine provides all the contents easily accessible with accuracy and advanced search in many e-discovery tools.

WHAT IS E-DISCOVERY?

On the Complete Discovery Source (CDS) website (<http://cdslegal.com/knowledge/the-basics-what-is-e-discovery/>), which approaches the topic not from a library perspective, it is mentioned that "electronic discovery is the electronic aspect of identifying, collecting and producing electronically stored information (ESI) in response to a request for production in a law suit or investigation. ESI includes, but is not limited to, emails, documents, presentations, databases, voicemail, audio and video files,



social media, and web sites.” The processes and technologies around e-discovery are often complex because of the sheer volume of electronic data produced and stored.

From a library point of view Tamar Sadeh (2013) clearly stated that the library users’ information seeking process has been changed and they are shifting searching from library catalogues and different scholarly databases to a single search library discovery system. Informatics brochure for FEDGATE mentioned that library users have shifted from searching and accessing content or information via library services to non-library services such as web search engines, online bookstores, blogs, online news, and e-mail. Discovery systems provide access to a large, diverse landscape of scholarly literature irrespective of their format, location, library holdings or subscriptions. At the same time this system offers simple search possibilities like Google to accommodate the expectations of today’s patrons. With this type of searching users can formulate their queries within no time and get their results fastest.

LIBRARY PORTAL

A library portal is a single-user interface for accessing a wide variety of electronic resources, both within and outside the library. According to Wikipedia Library portal is defined as “a combination of software components that unify the user experience of discovering and accessing information in contrast to a single technology to provide services that support discovery, access and effective use of information”.

Dhamdhare (2015) discussed about library portal in her presentation that it is a webpage which provides details about library, its collection and services. It hosts links to various online resources and databases. It provides sorted lists or links to electronic resources and databases, catalogues and sometimes federated search for all databases and resources subscribed in the library. Many libraries in India have such library portals. A web portal is nothing but a web page designed to give access to all resources in the library. The web has provided its dynamic linking capability and unrestricted access to information to its users and helps librarians to

organize the contents effectively. Therefore it has become necessary to libraries to develop portals for their resources and give access to their patron.

Fig. 1 below is the example of a Modern College of Arts, Science and Commerce College library portal and blog. It is created for different electronic resources subscribed and online free resources. Here only sorted lists of subscribed or online free resources including databases with their links and other useful scholarly links are organized. Many libraries in India created such kind of portal or blog to give information about the resources available in the library. But there is no federated search tool used to search resources from all these databases or links. This has been overcome by using Google CSE tool for federated search mentioned in this article at the end.

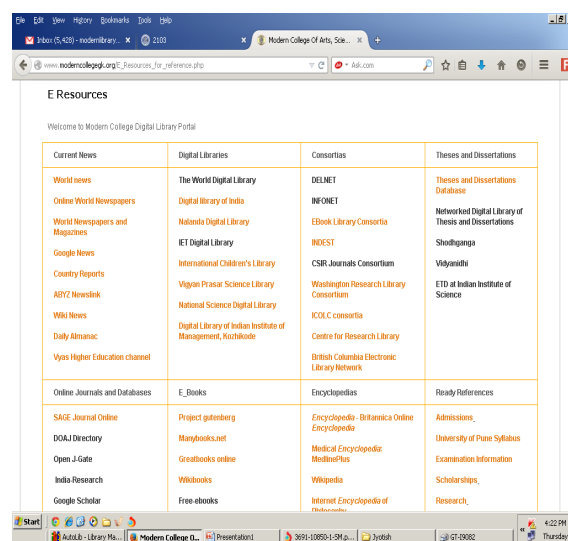


Fig1.

Modern College, Ganeshkhind Library portal

NEW APPROACH TO LIBRARY PORTALS

The library portal contains multiple databases and search engines without aggregation at metadata level. Disconnections among the resources were drawbacks of earlier library portals. There was confusion among the students to locate resources and it was also a time consuming process. Without any right tools, discovery of electronic information or resources can be a complex, expensive and challenging process. Therefore the need of a discovery tool,



i.e. single window access, arose. Discovery and federated search tools like Knimbus, Mendeley, EBSCO Discovery services, Fedgate, ABCD Library management system, etc are being used by libraries to give access to all subscribed online e-resources as well as print resources in the library to save the time of readers and give easy access to multiple databases and resources. Dhamdhare(2015)

There is a need of discovery tools in library due to the information explosion in electronic form to provide access to all electronic, online scholarly material, subscribed e-resources and library catalogue and to cope up with changing demand of users and maximize use of all resources. Let us see now the e-discovery tools used in Indian libraries apart from digital library softwares.

FEDGATE

What is FedGate? Fed=Federated Search to multiple databases and Gate= Gateway. It is a powerful scholarly federated search/ discovery product of Informatics (India) Limited, Bangalore, India offering a single window access facility to all electronics resources subscribed by the library. It is a federated search with connector based technology. It provides publisher wise connectors.

FEATURES OF FEDGATE

- It offers multiple information resources on a single window platform/search/interface for simultaneous search in real-time.
- It helps to manage and save the way the reader wants to search.
- Makes the search process more efficient, easy and fruitful
- Offers series of post processing facilities on results searched.
- Displays organized result sets with flexible display options.
- Allows to share search results with peers and collaborate with them
- Gives privacy to save queries and search results for future use.
- It helps users to get closer to their subject and interest areas on a single interface through

OPACs, e-journals, e-books, institutional repositories, different databases, publishers sites, JGate and also the 'open web' which helps users to find right information at the right time in the right way. Informatics India, (n.d.)

The figure below shows the Library portal of Savitribai Phule Pune University (Jayakar Library) and its integration of FedGate in the library portal

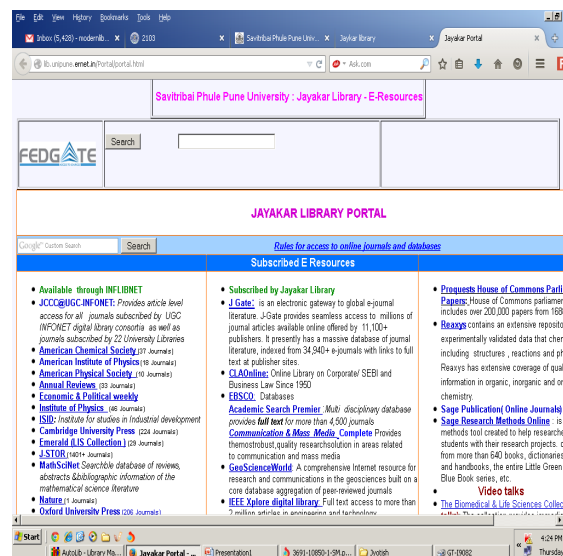


Fig 2.

FedGate Search for all e-resources at Jayakar Library

HOW DOES FEDGATE WORK?

- FedGate provides publisher wise connectors
- So far FedGate has about 8000 publishers connectors
- FedGate signs MOU with the publishers whose resources concern library subscriptions
- For each Memorandum of Understanding(MOU) and connector FedGate invests upto 1 lac Rupees
- It is not just a scholarly discovery tool but connector technology provides direct access to the resources from multiple databases on a single search platform with multiple options convenient to users
- FedGate helps to connect all types of databases including library books and databases in standard OCLC format



Below figure shows FedGate Simple search



Fig3. FedGate Simple search

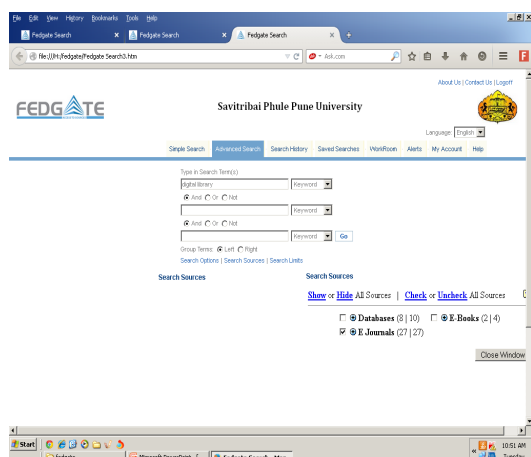


Fig 4. FedGate Advanced Search

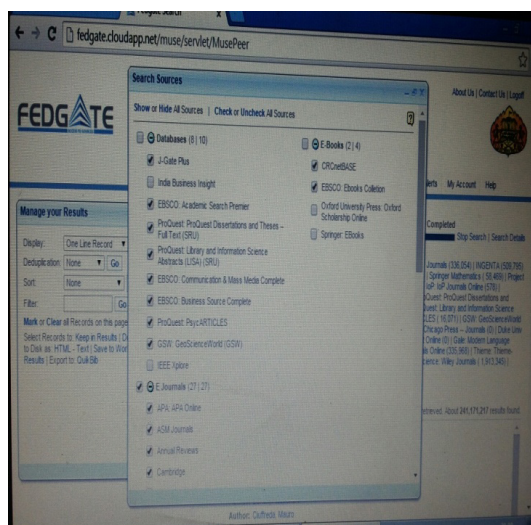


Fig 5. Search from Multiple choice sources

Integration of FedGate in Library Portal

- The Library needs to subscribe to FedGate
- FedGate set up requirements like Client Name, Client website address/url, List of Publisher or Aggregators Names, their website addresses and packages or subjects subscribed from those publishers or aggregators in excel sheet.
- FedGate Connects all the library electronic resources subscribed by the Library and gives access through one platform with multiple search options
- To integrate FedGate in the library portal FedGate gives an HTML tag to the library to insert in library portal.
- FedGate gives on campus access to all resources. The service is IP Address based.
- To give remote access FedGate uses EZProxy software

EZPROXY

EZProxy is a Remote Authentication Service developed by OCLC and distributed by Informatics India Ltd in India. To give remote access to library resources EZProxy software needs to be downloaded on the library server. It is easy to set up and maintain the program. The individual user needs to have his or her own login and password. It is been used in over 60 countries and 2500 institutions. It is middleware that authenticates library users against local authentication systems and provides remote access to licensed content based on the user's authorization. This Protects publisher's content from misuse by using security questions. Also protects security of the users (Track MAC Id of machine registered on the system). EZproxy Brochure(n.d.)

Following illustrations in fig. 6 show how Ezproxy works at Jayakar Library, Pune.

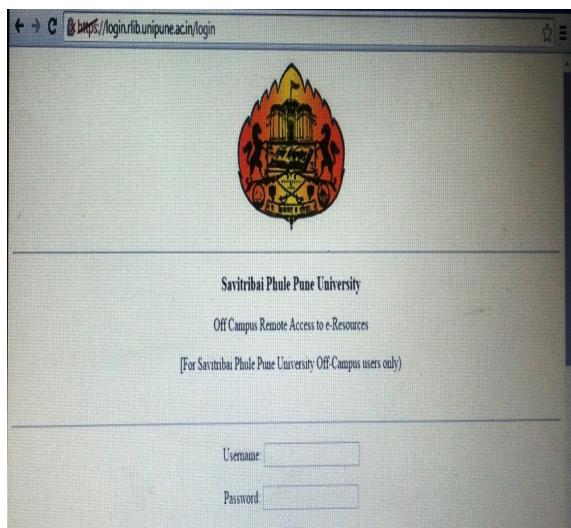
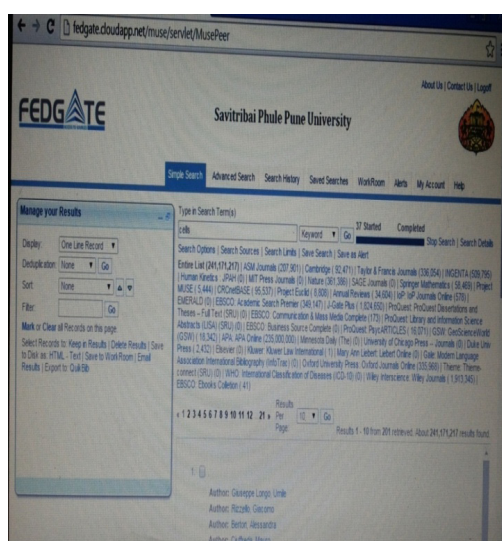
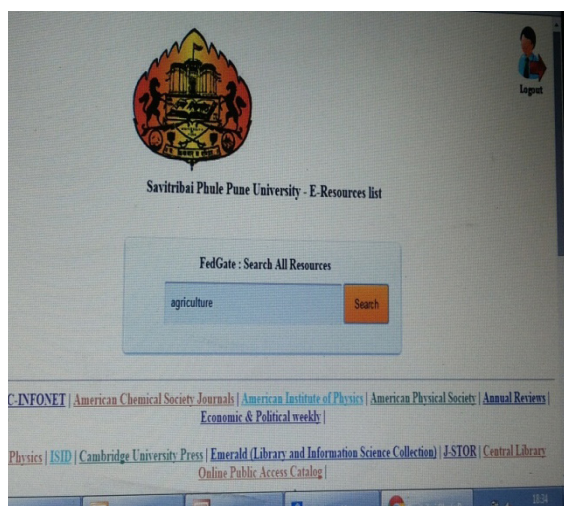


Fig 6. Login Page of EZproxy

Fig 7. FedGate Search window

Below Fig. 8 shows the hints and results on the term Cell



KNIMBUS

Is another e-discovery tool widely used in India. Knimbus provides easy and fast access to e-resources to the patrons spread across a wide geography. It offers a virtual place to interact and share knowledge among patrons/researchers. With this tool libraries can reach more patrons and expand circulation extending the library beyond the campus and providing a 24x7 service. Knimbus website(n.d.)

FEATURES:

- Fast access to eResources in the library collection within and outside campus
- Ability to collect and self-publish works authored by library users
- 'My Profile' and other networking features to connect all the users
- Provides a platform to build a repository to archive and share in-house resources and content authored by users.
- Lightning fast discovery
- Manages access rights
- Unbiased, relevant results
- Personalized for each user
- Look up by Author, Subject...
- Remote information seekers with secure access to e-library.
- Cross platform compatibility
- Users can access their library on their smart phones

In India the UGC-Infonet Digital Library Consortium has been established to provide common access to electronic resources which are paid by all universities and colleges by nominal membership fees. The Consortium provides current as well as archival access to more than 7500+ core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines. So far 209 Universities including 14 National Law schools and central universities that come under the purview of UGC and 4154 colleges have been provided differential access to subscribed e-resources. These e-resources cover almost all subject disciplines and are wholly funded



by the UGC and executed by the INFLIBNET (Information and Library Network) Centre, Gandhinagar.

This consortium provides access to all these resources through Knimbus, a single search engine. All member libraries are using Knimbus to search electronic resources. Knimbus curates learning content from 100s of publishers, harvests library subscriptions, enables 24x7 mobile access, helps build institutional repositories and custom branded eLibraries to change the way libraries function and look.



Fig9.

Knimbus at UGC INFONET Digital Library Consortium

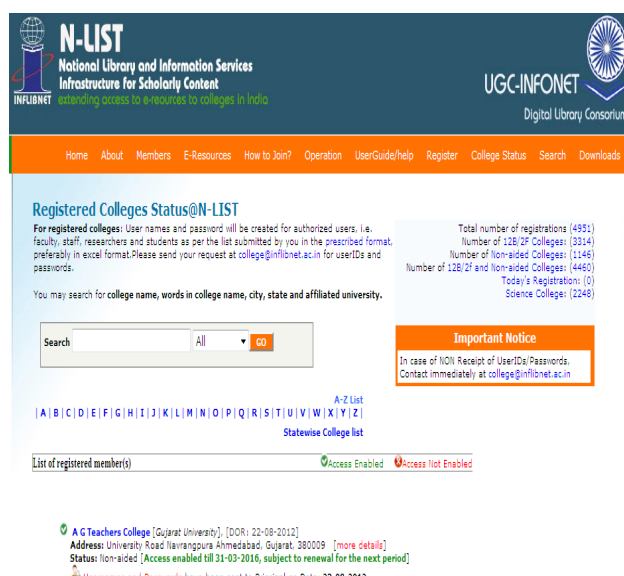


Fig10. Knimbus search for all member colleges through NLIST consortium

DISCOVERY SERVICE THROUGH GOOGLE CSE: GOOGLE CUSTOM SEARCH

This is one of the main open source discovery tools which libraries can use for e-information discovery at some extent for searching information from online databases. Many libraries are not aware of this tool. The libraries which cannot afford commercial discovery tools can use this service free of cost. The process of integrating this tool in the library website is also easy. As per Google CSE site, and youtube video Google CSE is for developing discovery service/ federated search engine for online databases or sources. Google Custom Search is an online applet provided by Google that allows web developers to feature specialized information in web searches, refine and categorize queries on Google web search. It allows anyone to create their own search interface based on Google.

Use of Google CSE at Modern College of Arts, Science and Commerce (MCASC), Ganeshkhind, Pune: The author gave a case study of how this college integrated Google CSE federated search engine in her blog and website for her readers. Earlier the library created a portal for all electronic resources where links of all free as well as paid databases and scholarly publications were classified and arranged accordingly.

Steps to be followed to create a Custom Search Engine for library:

- You need a Google account. After login to Google account in a new search browser open <https://cse.google.com/cse/>

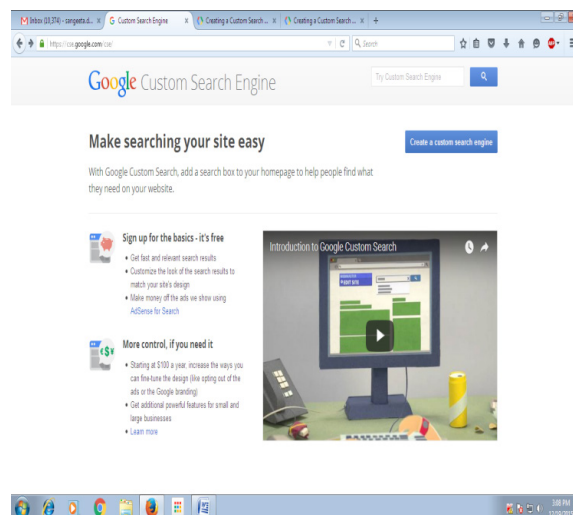


Fig 11. Google CSE home page



- Click on Create a Custom Search Engine
- Enter the site or database search site in the column “Sites to search”. Here for example the author entered Google Scholar, DOAJ Directory and other database links. You can add the web pages, any sites you want in your search engine. You can include whole site URLs or individual pages URLs. If you want you can also use URL patterns too.

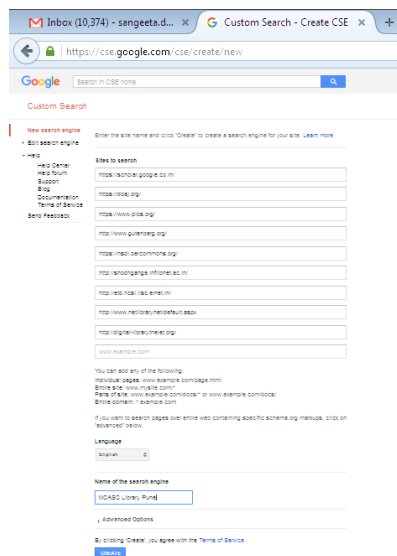


Fig 12. Google CSE home page

- Add the name of search engine.
- Then click on Create. The databases are added in your search database.
- You have now successfully created your custom search engine.

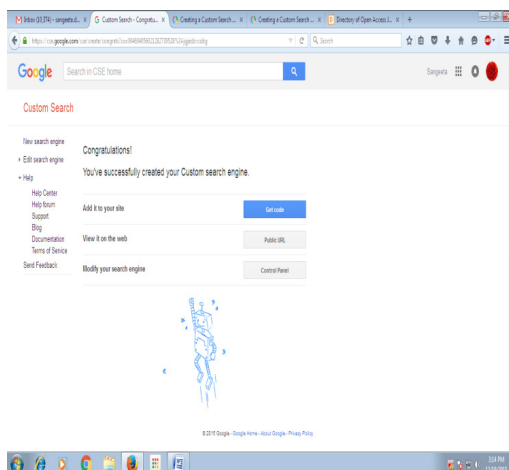


Fig 13. Successful creation of Google CSE

- You can modify your search engine by clicking on Control Panel. You can provide description and preferences to your search engine and add additional users and give rights to them to edit your custom search options, and send removal or indexing request to Google Search Console.

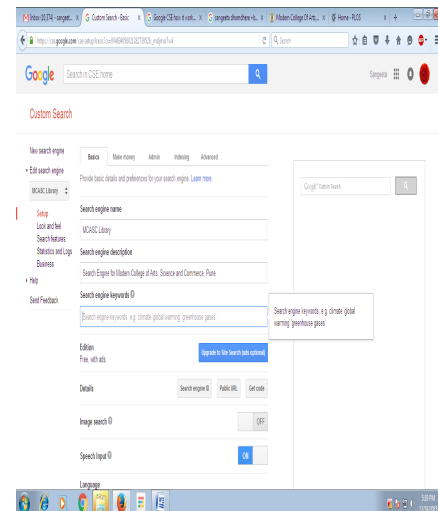


Fig 14. Editing Google CSE

- You can apply your own search selecting databases using edit option.
- On the following page you can upload or download CSE definition or annotation files. Your custom search engine consists of annotations and context. Annotations specify which sites are included or excluded in your search engine.

From the ‘Look and Feel’ menu you can give a look to your search engine. You can select patterns, colors etc

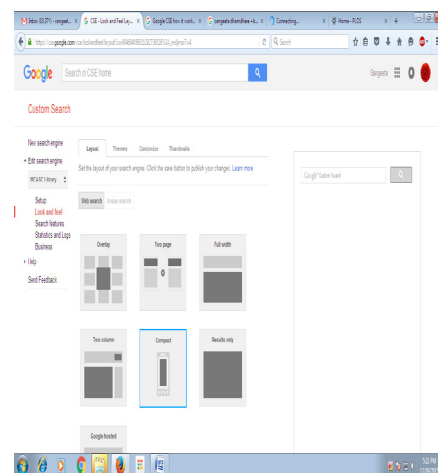


Fig 15. Selection of layout of Google CSE

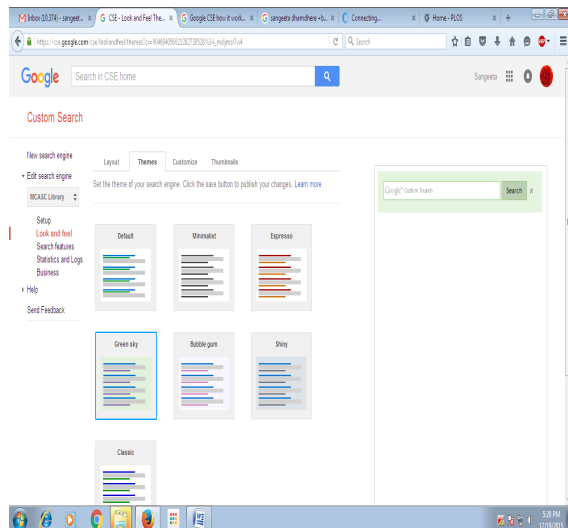


Fig 16. Selection of themes in Google CSE

- Once you set up the look and feel to your search engine, you can get the URL or code for your Custom Search Engine from the Setup menu, which you can share with your users or add in your library website, webpage or blog.

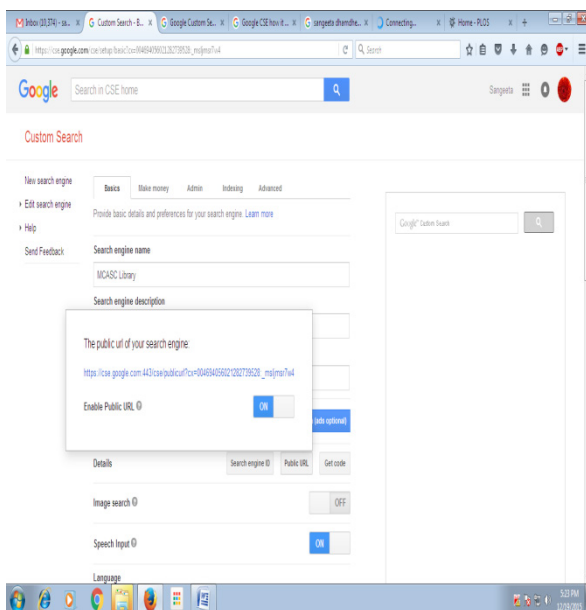


Fig 17. Public URL for Google CSE

- Now your basic search engine is ready to use! You can click on the URL and your Custom Search Engine is ready to use.

From this search box your users can make searches from your website or blog or webpage. E.g. search for discovery tools. In below figures you can see the results from different databases you added in your search engine.

Fig. 18 & 19 below are another example of federated search on the keyword 'discovery tools'.

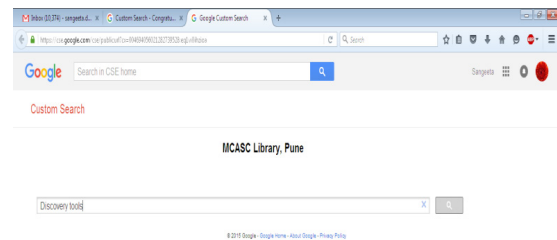


Fig 18. CSE for MCASC Library

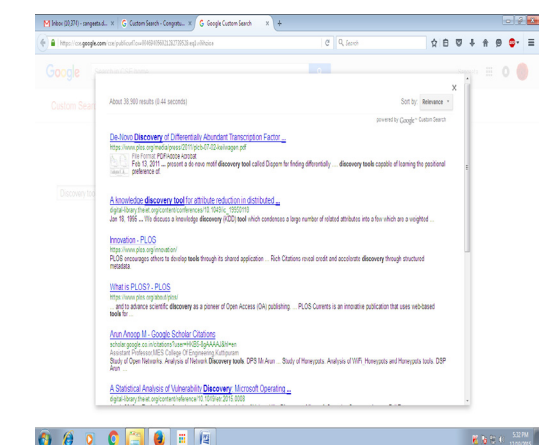


Fig 19. Search results in MCASC Library

The result of the Integrated Google Custom Search Engine in the MCASC library blog is given in the Fig. 20 below.

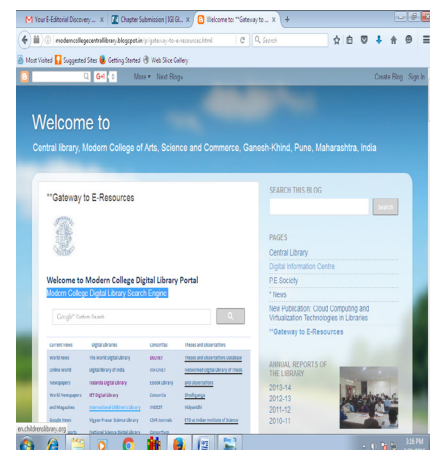


Fig 20. Integration of Google CSE in the Library Blog



CONCLUSION

A library portal with federated search for library catalogue as well as for subscribed and free online electronic resources is needed in all libraries to enhance user satisfaction. The libraries from developing and underdeveloped countries cannot purchase the costly federated search engines or discovery tools to satisfy their patrons needs and to save time. There is an urgent need of open source federated search or Information Discovery tools for the libraries. Libraries are using different automation, content management; digital library or learning management softwares which explains the need to connect resources from all these databases and subscribed online resources. In India FedGate, Knimbus, Ezproxy services are commercial services available but many small libraries cannot afford these tools. Developing and underdeveloped countries needs such kind of service free of cost along with training to give maximum access to their resources and online scholarly resources to their users. The author tried to give one example of a free tool: the Google Custom Search Engine made available by the Google that can be used as an integrated search tool. ABCD open Source Software discussed in detail in this book is also one more powerful integrated search tool for libraries that can be used for accessing various databases offline or online.

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