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Integration of Google CSE with KOHA LMS: Personalised Discovery Service @ St Xavier's College Central Library

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Abstract:
Due to financial constraints most of the college libraries in West Bengal cannot venture out to implement commercial discovery tools like EBSCO host. On the other hand, open source discovery tools like VuFind, Blacklight etc are available without any implementation cost but complexities of installation process and configuration sometimes may appear to be a hindrance in the way of implementation for the college libraries. Google Custom Search Engine (CSE) is an online platform that allows retrieving subscribed resources as well as open access resources from a single-window search interface. It is cost effective and easy to implement without any specialized technical manpower.
The present paper gives a general overview of Google Custom Search Engine (CSE), integration process of Google CSE with KOHA LMS, its limitation and also its usability to fulfil user demand. It is based on the practical experience of designing personalised discovery service for the St Xavier's College Central Library.
Keywords: Google CSE, Discovery Service

1.0 Introduction:

Google Custom Search (formerly known as Google Co-op) is an online platform provided by Google. Google launched this single window search interface on May 10, 2006. The present paper gives a general overview of Google Custom Search Engine (CSE) and also how integration of Google CSE with KOHA LMS has been done at St. Xavier's College Central Library.

2.0 Google Custom Search Engine:

Google Custom Search Engine is an online platform that allows to create a search engine interface for a website, blog, or a collection of websites. Anticipating the needs of the library user community, this prototype has been developed as a cost-effective single window search interface to retrieve subscribed resources as well as freely available open access resources.

3.0 Advantages:

Benefits of Using Google Custom Search Engine (CSE)
There are a number of reasons why we use CSE in our library webpage. Some of them are listed below:

- It is powered by Google's search algorithm - which is the best search algorithm.
- Google Custom Search Engine is a free service.

- We can customize the look and feel of the search box as well as search results.
- We can use Autocomplete feature of Google Custom Search Engine (CSE)–which makes query even faster also.
- We can setup the Google Custom Search Engine to search through multiple websites in a single platform.
- Now CSE is available in a number of layouts –we can choose as per our requirements.
- Google keeps track of search queries and gives us all the analytic data.

4.0 Google CSE @ St. Xavier's College Central Library:

St Xavier's College is 156 years old undergraduate college in Kolkata. It offers honours and general degree courses in arts, science and commerce and also five PG courses. Roughly 8000 students have been enrolled in different courses and the majority of them are utilizing library on regular basis. Therefore, resource identification is one of the most important functions during design of a discovery service. The St Xavier's College Central Library has a bibliographic database in Koha with around 80,000+ records and it subscribes to INFLIBNET – NLIST, DELNET, NDL, journals published from Indian Academy of Sciences, Down to Earth magazine, AIMS International journal, Sage Journals and the Economist. Apart from these resources, users need to consult different open access resources available in their specific domain of subject interests. But these resources are distributed in library catalogue database, subscribed resources and open access resources each with different user interface which requires specific retrieval techniques. As a result, end users are facing problems during retrieval of e-resources as they need to move from one search interface to another for comprehensive resource discovery. This situation can be dissolved by providing a single-window discovery service for the end users. Commercial discovery services like EBSCO were too expensive for the already-strained library budget and the library does not have specialized technical staff to implement freely available open source discovery tools like VuFind or Blacklight. Therefore, the college library attempted to implement Google Custom Search Engine (CSE) as a feasible alternative solution.

5.0 Integration of Google CSE with KOHA LMS:

Using the interface of Google CSE, a basic discovery service was created and named as St. Xavier's College Central Library Discovery Search (see Fig. 1) by filling-up minimum required fields like 'Site to search' option (selected URLs were added to activate the CSE e.g. Sodhganga:http://shodhganga.inflibnet.ac.in/*). However, other options such as 'Search Engine Keywords', 'Edition', 'Language' etc. were left as per their default settings. While adding site URLs, it is possible to configure the URL patterns that can enable CSE to include total or part(s) of the website. For example, adding '/*' at the end of web address (URL) will enable CSE to include all the pages and subfolders derived from that particular web address. Using the wildcards (* mark) in URL pattern we can access particular page or portion of the website. In the integration of the current CSE, '/*' at the end of each web address was added to cover whole website for indexing by the Google CSE. The Google CSE has been customised with the following steps for fine-tuning in terms of search efficiency and appearance. An overview of control panel is given for better customization. [Fig. 1].

The major features that can be controlled from the control panel are as follows:

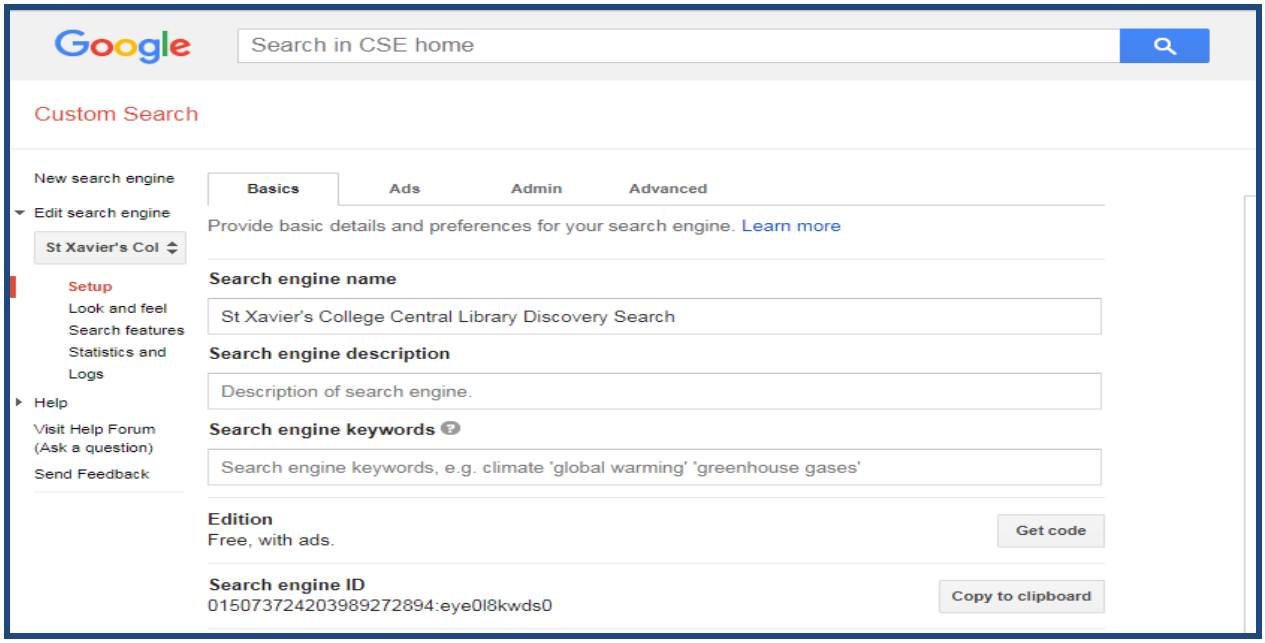

Fig: 1 Control Panel of Search Engine

Setup: This feature provides basic details and preferences for the newly developed CSE. In the Basics tab of the Setup section, one can change the name of the search engine, specify sites to be included, enable image search (in our case this one is disabled), select the Custom Search Edition which one can be used for setting the language of search engine interface. Using 'Add' option under 'Sites to search', selected websites were added individually one by one and their labels also assigned. Admin, indexing and advanced setup options were not used to incorporate any changes.

Look and feel: One can customize the look and feel of search engine on the look and feel page of the 'Control Panel. On the 'Layout' tab, one can specify the layout of search results page; on the 'Themes' tab, one can select a design theme for the search engine; on the 'Customize' tab, one can specify appearance of search engine by customizing search box, search button, refinements and how search results will appear; on the 'Thumbnails' tab, one can enable or disable thumbnail images in search results.

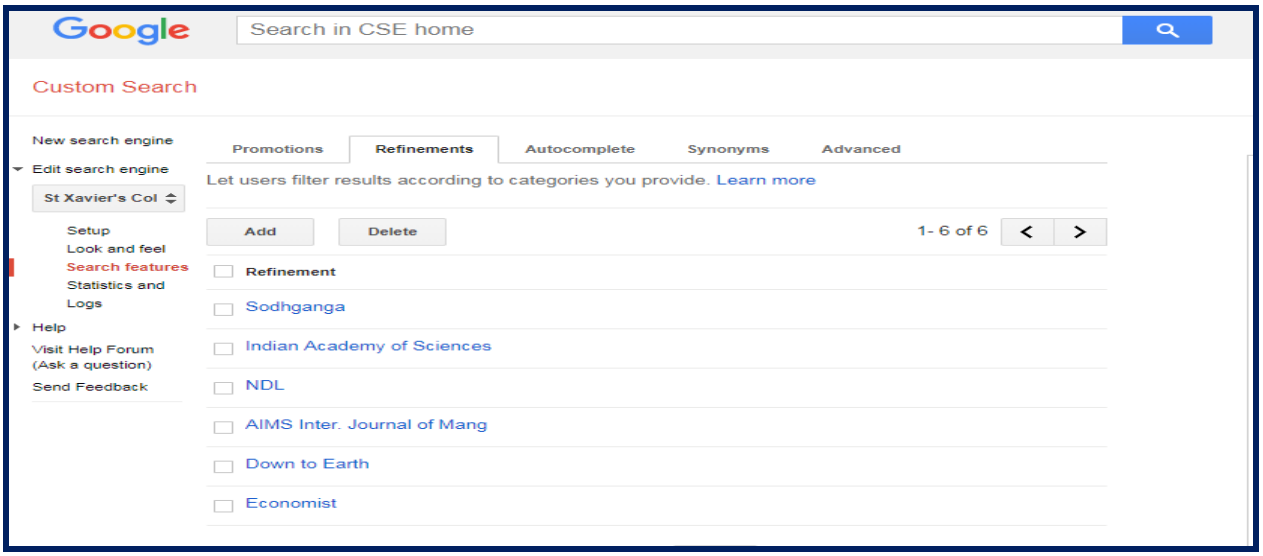

Fig: 2 Search Interface Refinements

Search features: If we enable this feature, user can search anything more effectively, such as promotions, refinements, auto-complete, synonyms and many other features. [Fig: 2].

Statistics and logs: Usage statistics can be generated daily, weekly, monthly and yearly as per the requirement. The 'Statistics' page provides accurate data about the search usage and the total number of searches completed.

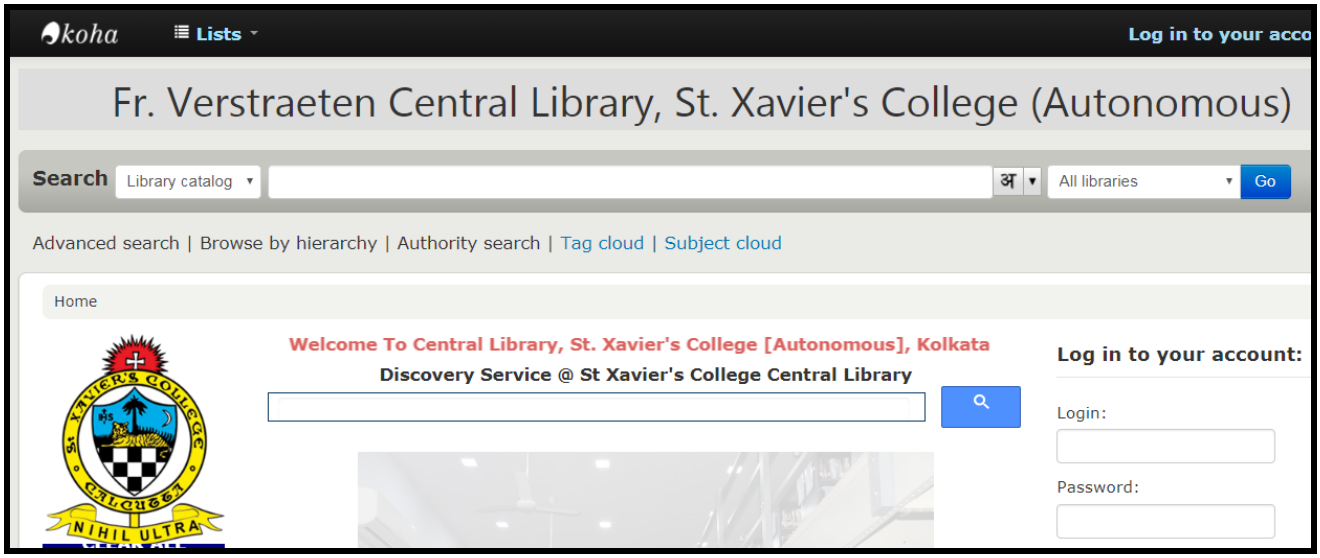

Fig. 3: Discovery Service Interface @ St. Xavier's College Central Library

Now the Custom Search Engine, Discovery Service @ St. Xavier's College Central Library is ready to use. The Search Engine can be accessed either through Public URL or from search box embedded in the library homepage The Public URL of the CSE (https://cse.google.com:443/cse/publicurl?cx=013649 234587080269501:zmze6gjpotk) can be shared with users through library website. Appearances of search box interface and search result page have been displayed in Fig. 3 and Fig. 4 respectively.

Fig: 4 Appearance of Search Result

5.1 Integration of Google CSE with Koha OPAC:

Integrating search box with Koha OPAC is a simple method by generating the code combination of HTML and JavaScript and incorporating the code in Koha OPAC system preference. [Fig. 5]. Now users can search the resources on the basis of resources which are included in the Google CSE. It provides a user-friendly search environment, where users can switch over from OPAC search to single window discovery search interface and vice-versa.

```
<html>
<center><b>Discovery Service @ St Xavier's College Central Library</b></center>
<body>
<script>
  (function() {
    var cx = '015073724203989272894:eye0l8kwds0';
    var gcse = document.createElement('script');
    gcse.type = 'text/javascript';
    gcse.async = true;
    gcse.src = 'https://cse.google.com/cse.js?cx=' + cx;
    var s = document.getElementsByTagName('script')[0];
    s.parentNode.insertBefore(gcse, s);
  })();
</script>
<gcse:searchbox-only></gcse:searchbox-only>
</body>
</html>
```

Fig: 5 Source Code for creating Google Custom Search- Engine in Koha OPAC

6.0 Limitation

Google CSE is an open source free service for developing a discovery service. But it is not free from its limitations. Some of the limitations are as follows:

1. Google Custom Search shows results only from those pages that have been indexed by Google search engine. Google may not necessarily index all the pages in your website.
2. Free edition includes advertisements as per Google's terms and conditions, and another problem is regarding the uncertainty of future availability of services.
3. In case of subscribed databases, search for whole site will be taken care of by default. As a result, the non-subscribed journals in a journal portal can be indexed e.g. in case of Sage journals the access to full-text won't be possible for those non-subscribed Sage journals though the retrieval result will include those unsubscribed journals also.
4. GCSE will not produce accurate search results – i.e. it does not eliminate any junk results.
5. GCSE normally does not recognize truncations facility. e.g. KOHA can search any truncated terms (like eng or math), Dspace can search for eng* or math*.

7.0 Conclusion:

For libraries with low financial backup and insufficient skilled manpower the integration of Google Custom Search Engine with Koha for getting single window search facility will act as a boon to the library user community. In our case we have adapted this prototype for experimental basis and it ran successfully. Users have benefited and made themselves accustomed with the benefits of discovery service. Thus an awareness of single window discovery service had been grown up among library user community.

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