

Application of Free and Open Source Software (FOSS) towards Responsive Library Services: A Case Study

Shekappa Bandi

Sir DorabjiTata Memorial Library (SDTML)
Tata Institute of Social Sciences,
Deonar, Mumbai

Satish Kanmadi

Sir DorabjiTata Memorial Library (SDTML)
Tata Institute of Social Sciences,
Deonar, Mumbai

Mallikarjun Agadi

Sir DorabjiTata Memorial Library (SDTML)
Tata Institute of Social Sciences,
Deonar, Mumbai

Abstract

This study traces the practical aspects of using free and open source technologies by Sir DorabjiTata Memorial Library, Tata Institute of Social Sciences, Mumbai. The case study proposes best practices adopted to reach out the user community with innovative methods. Paper discusses changing dynamics of user community approach to information seeking, and their dynamic behaviour to information needs and search, which invariably point towards emerging technologies like social media tools and other open source software to make library services responsive.

Keywords: Open Source, OSS, FOSS and Reflective Library Services.

1. Introduction

The role of Libraries and the Librarians has taken a new shape due to the advent of digital environment which is dominated by innovations in the field of information and communication technologies (ICTs). The hardware and software's are continuously in beta mode, evolving continuously to accommodate information needs. The concept of librarianship also has undergone sea changes due to the new trends in ICT. Such dynamics has made the delivery of services by the libraries to their respective clientele quite effective. This has also impacted user approaches to information seeking, delivery and library activities.

ICT provides wide range of opportunities for libraries. It has given rise to serious efforts by the library community towards solving its economic and technical problems with mutual understanding between themselves by forming consortia. The main objective of this paper is to study the extent of use of free and open source software in library services. It identifies the areas of library services where FOSS can be used effectively and also explains the process of achieving the same. Its an effort in exploring various ICT applications in libraries which use FOSS to create reflective and responsive library services for its clientele.

2. Free and Open Source Software (FOSS)

The concept of free and open source software (FOSS) started in the mid-1980s and such software's are increasingly being used in the library environment. A key definition for "open source software" (OSS) is access to the actual source code, often available under a GNU public licence, which allows programmers to alter the software and redistribute it, with the condition that they make these changes and modifications of improvement available to other developers.



In this internet era, a brand new style of software called "Open Source Software" is gaining attention from

across the world. In the most cases open source software is technology solution wherein a source code is free to access by the public, and lots of people in the world may join the activities like further development including writing a new code, adding a new features, overcoming the bugs, developing new user perspective architecture and so on.

The popularity of open source is gaining momentum day by day and the academic community are the main users across the spectrum of user community. The contribution made by them for furthering the improvement and advancement of OSS is noteworthy and it is an ongoing process.

3. Tata Institute of Social Sciences: Profile

Tata Institute of Social Sciences was established in 1936, and is one of the premier institutes in the country in the field of Social Sciences. It has been recognized as one of the progressive centres of learning catering to the educational and research information needs of academic and scientific community for excellent teaching, research and development work carried out by the faculty members, research scholars and students. The University is the harbinger of positive social change in view of the tangible improvements it has brought about in the fields of intellectual awareness, aptitude for learning and pursuit of scientific endeavour. Considering the progress and achievements the university could accomplish in the last two decades, the National Assessment and Accreditation Council (NAAC), Bangalore has accredited the institute with FIVE Stars.

3.1 Sir DorabjiTata Memorial Library, TISS

TISS Library established along with the institute way back in 1936 and is one of the leading social science libraries in the country. The library was named as "Sir Dorabji Tata Memorial Library" on 3rd May, 2002 in the memory of late Sir Dorabji Tata. It is geared to meet the academic and research information needs of the user community and provides a conducive environment for intellectual enquiry by providing user-focused services to obtain and evaluate scholarly information and knowledge. Since the library

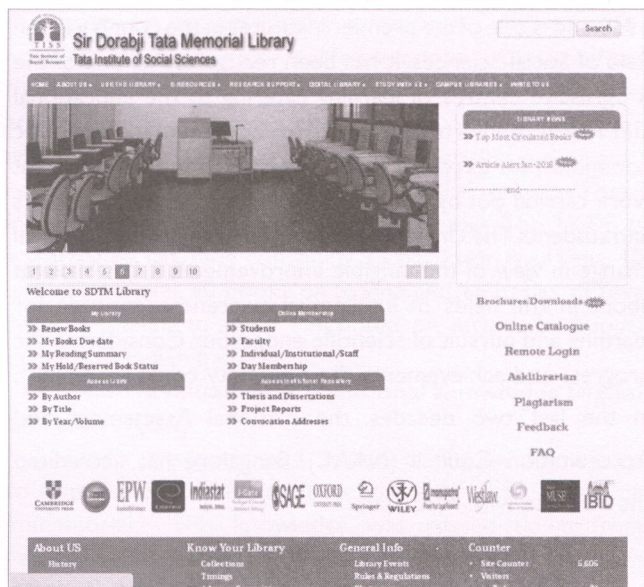
specializes in the field of applied social sciences, it has become most sought after library for the social scientists in India. It is a unique Knowledge Centre, which offers essential and specialized information resources and services to meet the growing information needs by; Developing user-based resources; Organizing information resources; Providing human and technologically moderated access to information; and Facilitating users to identify, locate, obtain and evaluate information, <http://library.tiss.edu>.

3.2 Open Source Applications @TISS Library

Library has kept the institute's principle of open source software close to its heart and as such makes all possible efforts to achieve the same. Following are the areas in which library has successfully used FOSS to create its library services.

3.1.1. Library Website – Drupal

The reflection of activities and the services of any organisation are assessed based on the kind of information and interactive websites they adopt and design. The trends in technological developments from proprietary to open source technologies to assist the organisations to develop such interactive websites have caught the attention of all and one. Drupal is a Content Management System and an Open Source Software (OSS), which addresses the majority of requirements to develop a responsive library website or a portal. It is rated to be the one of the highest used OSS software by the organisations across the world for hoisting the websites.



Drupal is free community supported framework for creating, organizing, presenting and managing a website. It is quite user friendly and easy to manage several collaborative content creators who can publish content on website. Most commonly referred to as a content management system (CMS), Drupal has much more to offer. Drupal installations include a set of modules called Core Components, which provide features comprising user management, menu

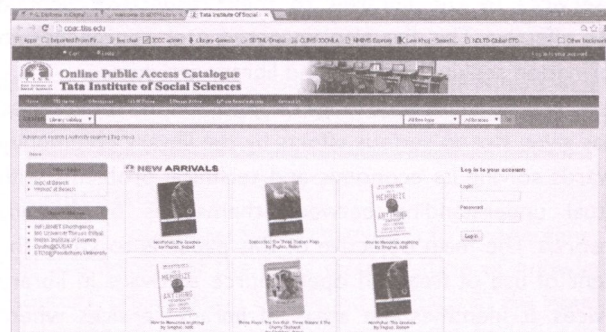
systems, and user contributed content.

The Drupal open source community (one of the largest in the world) contributes and supports thousands of free flexible and robust modules and themes, which can be easily integrated into websites to offer responsive features such as multimedia, calendars, rating systems, and other social media tools. Drupal is also an application framework that can be used to build other apps. Drupal requires no programming skills yet the HTML code produced is accessible, cross browser compatible, and search engine friendly, <http://www.blinkreaction.com/blog/what-is-drupal>.

Sir Dorabji Tata Memorial Library website has been developed using this tool to facilitate for integrated services to its clientele. Within the first three months, it has received more than 5000 visitors, <http://library.tiss.edu>

3.1.2. Library Automation – Koha

Traditionally "a library is a repository of knowledge under the roof". This statement emphasizes the importance of effective management and information delivery to academic community to assist them in research and development for the overall benefits of society. Library management includes; Acquisition, Cataloguing, Serial control and circulation of books and non-book materials, analysis of the budgets and generating various reports and so on.



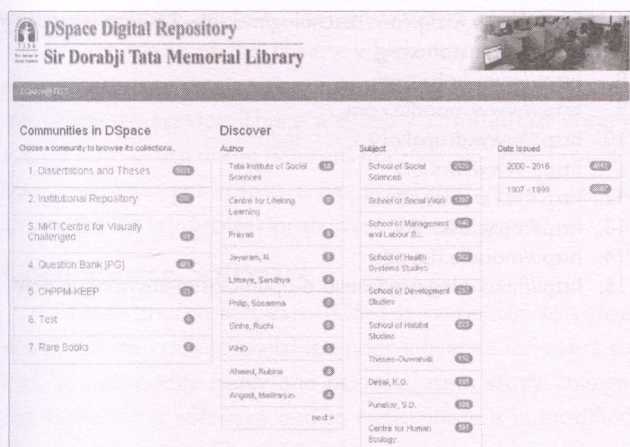
Koha is one such open source software, which is full-featured solution to library activities. Developed initially in New Zealand by Katipo Communications Ltd and first deployed in January 2000 for Horowhenua Library Trust, Koha is currently maintained by a team of software providers and library technology staff from around the globe. Koha satisfies all the functional requirements of a library management system. It is full-featured MARC based integrated library management system and is customized to cater to the needs of various types of libraries.

Koha is multi-lingual Open Source Software which is available in 41 world languages including five Indian regional languages viz Bengali, Hindi, Kannada, Malayalam and Oriya. On January 2, 2014, Koha 3.8.21 version released. Sir Dorabji Tata Memorial Library (SDTML) successfully implemented Networked Library System in November 2014. Koha was used to create a single platform to connect all four TISS campuses, Hyderabad, Tuljapur, Guwahati and Mumbai. This was done after an elaborate plan involving four campuses and with the help of over 40 LIS professionals across campuses. Koha is a

true enterprise-class LMS with comprehensive functionality including basic and advanced features covering modules for circulation, cataloguing, acquisitions, serials, reservation, user management, branch relationships and other relevant options like social media embodiment. Within the first year of completion of the project, TISS Web OPAC, has become one of the most widely used tools of library and has handled more than half million searches in the first year itself.

3.1.3. Institutional Repository – DSpace

Sir Dorabji Tata Memorial Library (SDTML) used DSpace for integrated archiving facility for the TISS research community. DSpace is open source software developed jointly by MIT libraries & Hewlett-Packard. This service enables the institute community to archive their preprints & post prints and other scholarly publications. In keeping with the objectives of the open access movement, TISS expect this service to facilitate the researchers in self archiving and long-term preservation of their scholarly publications, provide easy access to these publications worldwide and improve impact of their research. While dspace@tiss can be accessed by academic community of TISS but submission of documents to this archive still rests with administrators.



Following collections can be accessed from DSpace portal.

- Theses & Dissertations [full text]
- Institutional Repository
- TISS Project Reports
- TISS Annual Reports
- Convocation Addresses
- Question Bank

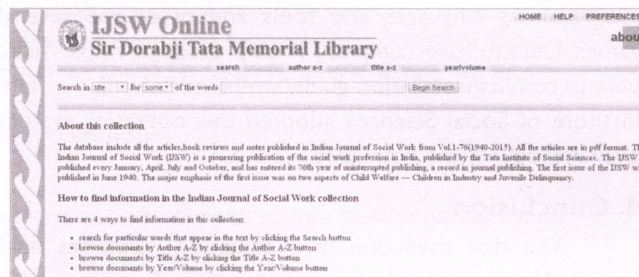
Being one of the popular and widely used services of library, the DSpace Digital library has achieved over 10,007 views/downloads in then last one year itself.

3.1.4. E-journal Portal – Greenstone

Sir Dorabji Tata Memorial Library (SDTML) has set up IJSW e-journal portal using the Greenstone open source software developed by Wikato University, Newzealand. The Indian Journal of Social Work (IJSW) is a pioneering publication of the social work profession in India, published by the Tata Institute of Social Sciences. The database includes all the articles, book reviews and notes published in Indian Journal of Social Work from Vol.I-76 (1940-2015). All the

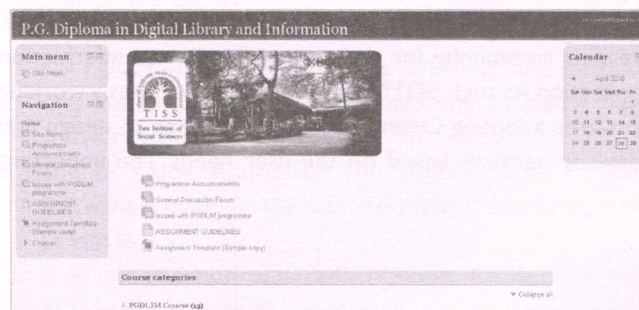
articles are in pdf format. The IJSW is published every January, April, July and October, and has entered its 76th year of uninterrupted publishing, a record in indian journal publishing. The first issue of the IJSW was published in June 1940.

SDTM Library initiated digitisation of the Journal with retrospective effect right from the first issue published in the year 1940 to date. An interactive and user friendly search interface provided to facilitate users to access by the author, title, year of publication including volume number and issue number which eases the search facility to the academican.



3.1.5. E-Learning Platform – Moodle

Moodle (Modular Object Oriented Dynamic Learning Environment) is a free open-source learning management system or e-Learning platform that serves educators and learners across the globe to facilitate for participatory education. It is the most widely used open source LMS in the world.



Moodle was developed in 2002 by Martin Dougiamas to help educators create online courses with a focus on interaction and collaborative construction of content. Since then, the main development of Moodle is led by Martin and as well as hundreds of other developers around the world who have helped fuel the growth of Moodle through contributing and testing code, and being active participants in community forums. TISS has successfully implemented moodle across the campuses for all learning programmes since 2010. <http://moodle.tiss.edu>.

3.1.6. Operating System – Ubuntu

Ubuntu is a complete desktop Linux operating system, freely available with both community and professional support. The Ubuntu community is built on the ideas enshrined in the Ubuntu Manifesto: that software should be available free of charge, that software tools should be usable by people in their local language and despite any disabilities, and that people should have the freedom to customize and alter their software in whatever way they see fit. It is

named after the Southern African philosophy of ubuntu ("humanity towards others").

Ubuntu is entirely committed to the principles of open source software development; encourage people to use open source software, improve it and pass it on. It is suitable for both desktop and server use and includes more than 1000 pieces of software, starting with the Linux kernel and covering every standard desktop application from word processing and spreadsheet applications to internet access applications, web server software, email software, programming languages and tools and of course several games. Ubuntu have complete virus protection <https://help.ubuntu.com/lts/installation-guide/armhf/index.html>. Tata Institute of Social Sciences adopted this operating system over Windows in the year 2012.

4. Conclusion

The rich collection of information resources held by SDTM Library and the amalgamation of open source technology has helped in making SDTM Library a responsive library system. Open Source Philosophy embedded with professional competency in the use of the same by library team has enabled library to anticipate and deliver timely services to user community over the period. Library has been appreciated for its responsive library services by accrediting agencies like NAAC. The rich IT infrastructure is an added advantage to introduce new and innovative services to the reading community for their ease of access to information collection. As such, SDTM Library@TISS is tirelessly working towards adopting Open Source Technologies to design and develop services based on the user needs. The important

services like Koha Library management System, Institutional repository using Dspace, eJournal dissemination through Greenstone, library portal by Drupal CMS, eLearning platform by Moodle and the Ubuntu Operating system for all its machines in the library are all based FOSS. Hence, TISS Library has successfully developed fully integrated information system for its various fronts using open source softwares.

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The world has witnessed revolutionary changes in various fields; including the Libraries and Library Profession. Innovations and advancements have taken place in ways Libraries are run and maintained today across the globe. Trends and developments in Libraries have brought wonderful opportunities to the users of Knowledge Resources Centres, but this has also brought several challenges for the disseminators of this knowledge. The successful implementation and management of a library and information services facility largely depends upon the wholehearted commitment and sincere efforts of the library and information science professionals. The successful library and information services are the one, which are tuned towards fulfilling the overall objectives and goals of their parent organizations.



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