Benefits of Blended Emerging Technologies for Smart Centre of Tech Mahindra Foundation: A CSR Initiative

Neelima Jadhav   *J. Shivarama*   *Akhilesh Shankewar*

Abstract

From traditional to modern librarianship, the role of the librarian is constant to connect the right users to the right information; however the medium of providing required and relevant information has changed over the period. The role of librarians as selector and organizer of information on the web. The web portal offers the ease of searching many sources at once, integrating results from licensed resources and local databases and bibliographical descriptions of digitized material. Librarians bring their expertise with content, their knowledge of copyright, their commitment to customer service and their experience in creating customized web-based information delivery systems. With the help of open source Content Management Systems (CMSs) it is easy to develop and maintain the library portals as per the requirement of an organization, be it academic, special or any other organizations including NGOs. One such potential Smart Centre of Tech Mahindra Foundation at Vishrantwadi, Pune, has been selected for developing library web portal under CSR activity.

Keywords: MOOC, Open Source Software, E-Publishing, Content Management System, Emerging Technologies

1. Introduction

In the modern digital information environment, a well-defined mechanism is needed to organize, store, and access information. Technology and the Internet are a part of our everyday life and becoming more seamless between what we do face-to-face and what we do online. Technology makes learning more accessible. Students can learn anytime, anywhere and at their own pace using a format that works best for their learning style.

Librarians' role is to help users to find relevant information whether it's online or offline . The blended librarian is focused on course goals and learning objectives outside of the library and across the curriculum, books, articles, and serve readings both print and electronic resources.

A library web portal serves as an integrated interface to a wide variety of digital resources and web-based library services. Web portals are also important tools for users to access and utilize library and information services over a network. An informative home page provides the users helpful information about the library, its collection, and services. In addition, library web portals also contains links to important internet resources useful for the parent organization (Letha, 2006). The dynamic linking capability of the web has provided users unrestricted access to information and to librarians an effective method to organize the contents. It has thus become mandatory for libraries to develop their portals to provide users access to their resources.

1.1 Statement of the Problem

The benefits of blended emerging technologies in libraries are yet to reach to students of Smart Centre due to lack of single user interface library web portal to fulfil their quest of knowledge.

1.2 Objectives of the Study

Objectives of this experimental study were

❖ To explore blended emerging technologies to provide new age library services to Smart Centre in digital environment.

❖ To design and develop web portal using open source Content Management System for Smart Centre to leverage the benefit of blended technologies.

❖ To develop new effective learning model for trainers, students at Smart Centre.

2. Harnessing of Open Source Software for Libraries

The current and blended emerging technologies such as e-books, e-readers, mobile computing, cloud computing, instructional literacy, and virtual worlds are discussed. In addition, the concepts of pervasive usability and how to test that your technology is highly efficient, effective, and satisfying for users are also explained in detail. The documents both print and e-resources on wide range of blended emerging technologies, digital services pathways its significance for library and library services in digital era, Open source content management system Drupal etc., new skills for the blended library have been reviewed to leverage best use of these technologies in providing effective and efficient library services to Smart Centre in digital leaning environment. Everyday new technological innovations take place across the world. To keep up with the technological changes is a biggest challenge in competitive environment. For libraries to be relevant in today's digital world is crucial, considering changing information requirements of the users', libraries have to adopt technological innovations to meet the user demand in terms of providing efficient and effective library services.

3. Emerging Technology Trends in Libraries

3.1 Web 2.0

The terms 'Web 2.0' and 'Library 2.0' are a bit nebulous, but are generally considered to include a user-cantered approach and a high degree of interactivity, usually in a technology-driven, multimedia environment. Although the concept of Web 2.0 is sound, we feel it hasn't always been implemented very thoughtfully in most library (particularly in academic libraries).For example, one of the core drivers of Library 2.0 is the assumption that because many of today's library patrons are avid users of Social networking services (Flickr, YouTube, Twitter, MySpace, Facebook, etc.), there is consequently a heavy demand for a strong library presence via these media.

3.2 Web 3.0 Technology for Libraries

There has been a visible transition of web technology from Web 1.0 to Web 2.0 leading to Web 3.0. Web 3.0 refers to the use of emerging technologies such as the semantic web, cloud computing, mobile devices and established tools like federated search systems, to facilitate the development, organization and sharing of user-generated web content through seamless collaboration between users, experts and librarians. The main goal of library 3.0 is to promote and make library collections widely accessible, searchable and

usable. The end result of Library 3.0 is the expansion of the 'borderless library',

 where the collection can be made available readily to library users regardless of its physical location.Web 3.0 is a term used to describe the future of the World Wide Web. Some pioneers believe that emerging technologies such as the Semantic Web will transform the way the web is used, and lead to new possibilities in artificial intelligence based applications. Other visionaries suggest that increase in internet connection speeds, modular web applications, or advances in computer graphics will play the key role in the evolution of the new version of World Wide Web.

3.3 Cloud Computing

Today, most libraries maintain local servers that run local applications such as the library catalogue. This arrangement requires significant initial outlay in establishing a professional grade server operation within the library. It also requires significant ongoing costs in terms of staffing, training and hardware replacement. Running local servers does give libraries the maximum amount of control over their computing infrastructure and environment, but it can also be quite expensive. As budget continues to tighten, libraries are increasingly considering moving more operations to cloud computing environments. In such a model, many libraries share a pool of computing resources that are accessible over the network. Because the cost is shared widely, the cost per institution can be lower. Additional savings are gained through efficiencies.For example, if a local ILS server is typically used at Pooling and sharing resources is something libraries have always done to some extent (for example, we have a long history of loaning our books to one another). There is little doubt that we will extend that concept to the library's computing hardware and that the library systems of the future will be hosted in the cloud.

4. Benefits of Blended Technology in Smart Centre of TMF: A study

4.1　About TMF Smart Centre

"Empowering through Education" is a motto of Tech Mahindra Foundation (TMF). Skills-for-Market Training Programme (SMART) is the Foundation's flagship programme in employability, which is built on the vision of an educated, enlightened and employed India, and a belief that educated and skilled youth are the country's true strength. Youth from disadvantaged urban communities and in immediate need of jobs are the beneficiary group of SMART. SMART Programme is of three months duration, with a batch size of not exceeding 25 students. This programme clearly aims at improving the employment prospects of underprivileged youth in the new economy jobs.. The programme began in 2012 with three centres in New Delhi and Hyderabad and trained 1,000 youth in the first year. In the current year, the foundation is running 65 centres across 10 cities of India, with over 15,000 youth on the programme. The course comprises Spoken English, Workplace Readiness and Basic ICT/ Computers etc.

6.2　Need Based Analysis of blended Technologies to the Smart Centre Stakeholders

The students @ Smart Centre Vishrantwadi, Pune come from underprivileged group of society. They are trained for three months in Smart Centre and make them employable at various institutions, organizations, malls, outlet etc.

There is no physical library at the moment at Smart Centre, so without proper library facility it is

challenging to cater to information requirement of the students and teachers. Majority of teachers and students at Smart Centre realize the importance of being updated and finding relevant information on time. Also though more or less they were not aware about library web portal and its benefits in learning and teaching process, they like the idea to have such dedicated library web portal. Also these students are very focused and determined to learn and demonstrate their new skills to the world. While interacting with them realized what kind of role such library web portal will play in their personal and professional life, it was very inspiring to see their enthusiasm towards this new activity at their centre and they are looking forward to access the information through library web portal at the earliest.

It was a great opportunity to connect to the teachers and students to the world of knowledge through the library web portal, where the information would be available on one click. The requirement gathering has been done through interview and questionnaire technique to understand information requirement. Total 30 questionnaires have been distributed among teachers and students to understand their learning requirements, out of which 14(48%) respondents were male and rest were female, the response received have been analysed and based on the feedback and information assessment the learning resources will be provided on through the library web portal.

Table 1: Requirement about Library Portal for Smart Centre Stakeholders

Sl. No.	Various information requirement for Smart Centre Stakeholders	Required	Partially required	Not Required	Cumulative
1	Teaching and Learning requirements on time	24 (80%)	4 (13%)	2 (7%)	100%
2	Relevant Information on right time	25 (83%)	5 (17%)	0 (0%)	100%
3	Need of Library Web Portal	25 (83%)	2(7%)	3 (10%)	100%
4	Blended emerging technologies such as Web based learning Moodle, Mobile Technology etc.,	20 (67%)	10(33%)	0 (0%)	100%
5	Use of E-books, E-Journals, E-Content	20 (67%)	5 (17%)	5 (17%)	100%
6	Learning new skills and get the relevant Information	20 (67%)	5 (17%)	5(17%)	100%
7	Awareness of e-learning resources on Internet	10 (33%)	5 (17%)	15 (50%)	100%
8	Awareness of deep web and invisible web	1 (3%)	6 (20%)	23(77%)	100%
9	Awareness about copyright, IPR and DRM	8 (27%)	10(33%)	12(40%)	100%
10	Affordability and accessibility of electronic resources	20 (67%)	5 (17%)	5 (17%)	100%
11	Integrated Library Management Softwares such as Koha, CMS, IR, Reference Management tools etc.,	25 (83%)	3 (10%)	2 (7%)	100%

The above table describe therequirement analysisof library web portal. Some of the concepts were new to the students and teachers so had to explain them the meaning and significance of the same to understand the questionnaire better considering library web portal requirements. As per the requirement analysis and responses received above data clearly shows that above 80% of respondents are in favour of having library web portal and looking forward for such portal to fulfil their information requirement.There could be various reasons for not able to get the relevant information on time such as lack of library facility, unawareness about where to find the relevant information etc., However, almost 80% of the respondents were agreed that relevant and timely information is important for them to fulfil their information requirement. There are computers available in Smart Centre for teaching and learning purpose, however if there is no connectivity or linking to online or web based learning resources through library portal the students will not be take advantage of learning resources available online and there would be a gap between information requirement of the users and relevant information sources so library portal will bridge this gap by connecting right users with right information at right time and bridge the gap various online learning tools such as Moodle, Mobile technology etc., 67% of the users responded that it would be great to have such learning tools and would be happy to explore them, at the same time almost 33% of the respondents feel that it is partially required. Here also almost 50% above users were not aware about the e learning resources available on Internet.

Almost 40% of the respondents were not aware bout concept of Copyright, Intellectual Property Rights

IPR and Digital Rights Management (DRM). 33% of the respondents have heard about copyright in some or other context. Though these are important concepts to know about when we use thevarious information resources on Internet. Being information providers and users both should be aware about the copyright concept to adhere to copyright compliances to avoid any legal hassle knowingly, unknowingly. Under "fair use" one should access and use the information. Accessibility and affordability is the major parameter where 67% of the respondents feel that e-resources should be accessible, Looking at the benefits and learning opportunity above 80% of the respondent feel that there should be integrated library management software available in the centre. Almost 80% of there spondents were of opinion of having library web portal and willing to get connected to the world of knowledge to enhance their learning experience.

4.3 Benefits of Library Web Portal for Smart Centre

Below are the benefits of blended technology in Smart Centre of TMF

❖ The students will have an excellent learning opportunity and can connect to various learning resources through this library web portal.

❖ The students will have required information on one click at their desktop.

❖ This library portal will connect them with one of the best learning resources.

❖ Free E-books will help these students to gain knowledge as per their learning requirements.

❖ E-newspapers will help them to stay connected with rest of the world with latest happening.

❖ With the help of CV writing and interview tips the students can prepare themselves better and face the interview with great confidence which will certainly have added advantage to grab employment opportunity.

❖ Smart Centre students will now be smart users connecting toworld of knowledge with this library web portal.

❖ This library web portal will certainly bridge the gap between digital divide, by providing learning opportunity to underprivileged students keeping in mind the benefits of emerging blended technology.

❖ This library web portal will certainly help the students to get connected with most appropriate learning resources and it would be helpful to them during their Smart Centre training as well as preparing for interview and get the good placement.

❖ The students will be aware about the latest learning technologies and how to take benefit for their personal and professional grooming.

❖ The students will always have added advantage to stay ahead and relevant as compare to where there were no such learning opportunity.

5. Design and Development of Library Web Portal using Drupal @ Smart Centre, Vishrantwadi, Pune: A Practical Approach

The first thing you need to do in order to install Drupal is set up a proper operating environment for the software to run. Drupal needs a wed server, a database application, and PHP in order to operate. Although there are many different configurations you could choose, the most common operating for

Drupal, as well as many other software applications, is LAMP which stands for Linux, Apache, MySQL and PHP.

Here, we have setup a XAMPP environment for this webportal.There is no official acronym expansion specified on the Apache Friendswebsite. Their homepage header reads "XAMPP Apache + MariaDB + PHP + Perl", indicating that this abbreviation is arecursive acronym.XAMPP requires only one zip, tar, 7z, or exe file to be downloaded and run, and little or no configuration of the various components that make up the web server is required.

5.1. Admin Panel

Developing the library protal is an imprortant activity, however mainintaing the portal is much more imporat in terms of keeping it relevant and updated. All admin level activity such as making relevent and desired changes, creating people, granting authorization, upgradation, deletion etc. can be hanlded through admin panel. The component of admin panel are as follows.

❖ **Dashboard:**The dashboard is the row of links directly below the main administrative list. You can add links to specific Drupal functions to the dashboard.

❖ **Content:** Here you create, edit and delete content and comments.

❖ **Structure:** here are the building blocks of a Drupal website, including Drupal's blocks, content types, menus and the links.

❖ **Appearance:** Here you select and configure themes.

❖ **People:** Here you manage your accounts, giving users roles and managing their permissions.

❖ **Module:** Here you enable, configure and disable modules to add functionality to your site.

❖ **Configuration:** Here you can change the settings for the entire site.

❖ **Reports:**Druple offers various reports, such as broken links from your site to other web pages and most frequently requested, but missing, pages on your site, along with other errors.

Developing Content as per the learning requirements of Smart Centre students and teachers was the major challenge. Keeping in mind how the blended technologies canbe helpful for this user group and also opening new learning avenue for them was the main endeavour. This library web portal has certainly opened up new learning opportunities for the students and teacher which was never available for them before this.

6. Conclusion

The library web portal for TMF Smart Centre is an attempt to open the new learning opportunity for teachers and students and make them future ready. They are now one click away from the world of knowledge because of the library web portal.The benefit of blended emerging technologies will certainly change their outlook towards access to information through portal and expand their horizon to seek the current and relevant information to stay one step ahead in this competitive world. This work had limited scope while developing library web portal for Smart Centre, however there is lot of scope for future enhancement and improvement. There could beample of free online learning resources

available on Internet and can be included on this library web portalkeeping copyright and legal compliances into consideration.

Referemces

1. Barile, L. (2011). Mobile technologies for libraries: A list of mobile applications and resources for development. College & Research Libraries News. Retrieved fromhttp://crln.acrl.org/content/72/4/222.full

2. Bell, S. J & Shank, J.(2004). A blended librarian. College & Research Libraries News. Retrieved from http://crln.acrl.org/content/65/7/372.full.pdf

3. Bhatnagar, A (2005) Web-based library services. Retrieved from http://ir.inflibnet.ac.in/bitstream/1944/1418/1/58.pdf

4. Doralyn, R. & Young, S.W.(2015). Social media optimization: making library content sharable and engaging. Library Hi Tech. 33(4), 526-544. Retrieved from http://scholarworks.montana.edu/xmlui/bitstream/handle/1/9606/Rossmann_Young_LibHi Tech _2015.pdf?sequence=6

5. Drupal 7: Understanding Drupal. Retrieved fromhttps://www.drupal.org/docs/7/understanding-drupal/overview

6. Fernandez, P.(2015). Through the looking glass: envisioning new library technologies, telling stories with technology. Library Hi Tech News. 32(9), 4.7. http://dx.doi.org/10.1108/LHTN-09-2015-0061

7. http://bigdata.cse.ust.hk/introduction.html (Retrieved on July 2016)

8. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3384&context=libphilprac

9. http://www.inflibnet.ac.in/caliber2009/CaliberPDF/23.pdf

10. http://liswiki.org/wiki/Blended_librarianship(Retrieved on July 2016)

11. http://www.liscom.org/postContent/fullPaper/pdf/paper%20presented/P%20C%2012%20Shivakumar%20TC.pdf (Retrieved on July 2016)

12. https://www.siteground.com/tutorials/drupal/drupal_installation.htm (Retrieved on July 2016)

13. http://www.tutorialspoint.com/drupal/drupal_overview.htm(Retrieved on July 2016)

14. https://www.unicon.net/sites/default/files/pdf_files/drupal_article_first_site_04.pdf (Retrieved on August 2016)

15. http://www.webopedia.com/TERM/S/size_on_disk.html(Retrieved on July 2016)

16. Installing Drupal on your Home Windows Computer Using XAMPP, MAMP or Acquiadev desktop. Retrieved from http://mydrupal.com/installing_drupal_on_your_home_windows_computer_using_xampp

17. Jamsheer N. P. E-book Management with Calibre Software. Retrieved from http://eprints.rclis.org/22460/1/Ebook-Management_Calibre.pdf

18. Khanna., V. K. (2014). The story of the Tech Mahindra Foundation. Gurgoan: Haryana: Penguin Books India. Pvt. Ltd

19. Kishore, A. & Seshaiah, O. Drupal: Developing library portal using open source content management system. Retrieved from http:// www.liscom.org/postContent/fullPaper/pdf/paper%20presented/P%20C%208%20DRUPAL%20DEVELOPING%20LIBRARY%20PORTAL%20%20USING%20OPEN%20SOURCE%20CONTENT%20MANAGEMENT%20SYSTEM.pdf

20. Mayank, Y.(2013). Cloud computing applications in Indian central university libraries: A study of librarians use. Library Philosophy and Practice. Retrieved from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2397&context=libphilprac

21. Mayank, Y. (2015). Problem and prospects of implementing cloud computing in university libraries. Library Review, 64(8/9). 567-582. Retrieved from http://dx.doi.org/10.1108/LR-01-2015-0007

22. Naik, U., & Shivalingaiah, D.(2009, February 25-27). Open Source Software for Content Management System. Paper presented at 7th International CALIBER on e-content Management. Retrieved from http://ir.inflibnet.ac.in/bitstream/1944/1028/1/29.pdf

About Authors

Ms. Neelima Jadhav, Tech Mahindra Ltd, Mumbai.
Email: neelima1in@yahoo.com

Mr. J. Shivarama, Assistant Professor, TISS, Mumbai.
Email: shivaramatoo32@gmail.com

Mr. Akhilesh Shankewar, TISS, Mumbai.
Email: akhilesh.kr007@gmail.com