NEXT GENERATION LIBRARIES
ISSUES AND CHALLENGES

(Proceeding of National Conference on
Next Generation Libraries: Issues and Challenges)

22nd March, 2015
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Editor-in-Chief
S. K. Pandey

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Yougal Joshi
Suchetan Kumar
Bibash K. Mishra
Ashish Kumar

Jointly Organised by
Central Library, Kumaun University, Nainital
&
UGC-Academic Staff College, Nainital
Editor’s Note

We on behalf of organizing committee and editorial board feel great pleasure to welcome the library professionals, dignitaries, fellows, delegates of the National Conference on Next Generations on Libraries: Issues and Challenges (NCNGL-2015) organizing jointly by Central Library, Kumaun University, Nainital and UGC- Academic Staff College Nainital on 22nd March 2015.

The current trends and technologies have forced the library & information centers and library professionals to serve the library clientele in a more suitable and constructive manner. These results, a change in knowledge generation to dissemination. It also compel the libraries and library professional to go for the next generation changes, e.g. manual services to automated services, use of social media for marketing of library services, etc. This change, old generation to new generation, created a very fertile land for the library professionals. Now they can use their innovative ideas to serve and satisfy users.

This Conference will provide the much needed platform for library professionals to discuss the issues and challenges of next generation libraries. The deadline for receiving of full text papers was 25th February, 2015. However, many of the papers have been received till 15th March, 2015. So, we were having few days to edit these papers. Despite our best efforts some errors may have left in, so due apologies to authors for any such errors. We would like to express our deep sense of gratitude to entire team of members of editorial board and we express our sincere appreciations to the entire team of Central Library, Kumaun University for making the conference a grand success. We are extremely thankful to Prof. H.S. Dhami, Hon’ble Vice-Chancellor, Kumaun University and Prof. B.L. Sah, Director, UGC-ASC, Nainital, for their entire effort. The papers in this proceeding are presented with a view of prompting further discussions during the seminar so that the ideas can be groomed as relevant in increasingly and dynamic knowledge society by incorporating strategic foresight and ultimately meet emerging user’s need. The proceeding will also help the participants as a reference tool for implementing some of the ideas discussed during the conference.

Editors
Message

I am delighted to learn that the Central Library and Academic staff College of the University has taken the initiative to organize a National Conference on “Next Generation Libraries: Issues and Challenges” on 22nd March, 2015 at The Hermitage, Dr. S. Radhakrishnan Hall, Kumaun University, Nainital.

Library plays a pivotal role in the field of Higher Education. It is essential for the library professionals to prepare themselves for the next generation issues so that they can meet the challenges of changing information scenario. Today’s changing environment of information and communication technology has drastically designed different ways in which information is created, processed, disseminated and utilized. The Web 2.0 and Web 3.0 and social media has forced library and Information Centers in a constructed manner to serve the clientele.

I hope this conference will provide an opportunity for the delegates and all library and Information professionals to deliberate and discuss the latest developments in this field. I am sure that the outcome of this conference will prove to be fruitful for the library professionals.

I congratulate the Organizing Committee on this auspicious occasion and send my best wishes for the grand success of the event.

Dated : 13.3.2015

Nainital

Vice-Chancellor
Message

Many have predicted that the digital age will wipe public bookshelves clean, and permanently end the centuries-old era of libraries. As libraries’ relevance comes into question, librarians face an existential crisis at a time when students need them the most. Despite their perceived obsolescence in the digital age, both libraries and librarians are irreplaceable for many reasons. But, to do so they must radically revise their functioning.

In India, we too need a vision similar to US President Barack Obama’s when he envisioned American Libraries as creative centres for fostering innovation and creativity. Following the ‘Maker Initiative’ American Libraries have now started functioning as Makerspace. Society is not ready to abandon the library, and it probably won’t ever be. Libraries can adapt to social and technological changes, but they can’t be replaced. While libraries are distinct from the internet, librarians are the most suited professionals to guide scholars and citizens toward a better understanding of how to find valuable information online. Indeed, a lot of information is online.

I hope we as responsible members of society will be able to foster a culture of libraries and librarians as guides and guideposts for our young generation. Today, more than ever, libraries and librarians are extremely important for the preservation and improvement of our culture. To be able to meet the challenges before them in this digital age our librarians must keep themselves updated and aware of the changing world of libraries. I hope the present seminar will prove very beneficial in achieving this goal.

I offer my good wishes to the organising team and the participants of the Seminar for its success.

(B.L. Sah)
I am delighted to learn that Central Library, Kumaun University is going to publish its National Conference souvenir. I hope that several meaningful abstracts will be published in this souvenir which will focus on various academic activities of the library. I am confident that Central Library shall come up to the expectations of the research community and society.

I extend my heartiest felicitations to the editorial Board in their endeavours and send my good wishes for the successful publication of the Conference Souvenir.

(Prof. R. K. Pandey)
Department of Geography,
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Kumaun University, Nainital.
Message

It gives me immense pleasure to learn that the Central Library and Academic staff College of the University are jointly organizing a National Conference on the topic "Next Generation Libraries: Issues and Challenges" on 22nd March, 2015 at The Heritage, Dr. S. Radhakrishnan Hall, Kumaun University, Nainital. Keeping in view the present scenario, the theme of the conference is highly relevant.

Library plays a significant role in the development of higher education. So the library professionals must be acquainted with the latest advancements and technologies being invented day by day, so that they can face next generation challenges. I hope this conference will provide an opportunity for librarians, information professionals and IT intellectuals to share their ideas and will discuss about the latest trends of developments in this field. I am sure that the outcome of this conference will certainly be fruitful for the library professionals in future.

I extend my heartiest congratulations to the organizing committee on this auspicious occasion and send my best wishes for grant success of this academic venture.

Dated: 16.3.2015

Prof. D. C. Pandey
REGISTRAR

Nainital
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Next Generation Libraries: Issues and Challenges

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Emerging Shape of Next Generation Libraries

Manoj K Joshi

It is indeed a matter of pride for me to be at my alma mater after nearly three decades. I sincerely thank the organizers of the National Conference on ‘Next Generation Libraries: Issues and Challenges’ for providing me this opportunity to be here with such a learned audience.

In India, although we have a long heritage of learning and learning centres like Taxila and Nalanda Universities which had outstanding libraries, but the later period under the control of British, heralded the era of western influence on Indian knowledge. The library movement was started in true sense in 1910 from Baroda which then spread under the remarkable leadership of Dr. S.R. Ranganathan before and after the independence. The entire period from 1920s to early 1970s is known as Ranganathan era in Indian librarianship. Libraries and librarians endeavoured to take his legacy forward. And that journey has brought us to the libraries of 21st century. Now what will be the shape of libraries in coming future? Some of the trends have already become visible.

The digital revolution has transformed the way we live. Today no walk of life is untouched by the onslaught of digitization. Libraries which are information disseminating agencies have been witnessing the impact of digitization to the maximum extent possible. It has brought about a dimensional change in the functioning of modern libraries. In fact, the digital revolution has been the backbone of the developments in Information and Communication Technology. The technology assisted activities and services have helped the libraries to keep pace with the time.

The libraries of future have to cater to the requirements of the users of Google generation and more recently Millennial generation. But, how are these users different from the earlier generations? Studies have shown that these users are technology savvy, habitual of multitasking, and the most importantly they are impatient. Any delay even if it is caused for some better service, is not able to hold the interest of these users. They want instant information which can fulfill their need.

Then there is the issue of information resources. Libraries have traditionally housed printed documents such as books, periodicals, reports, and all other sources whether published or unpublished. All our tools and techniques of acquisition, processing, maintenance and service were directed towards these printed sources. The automation of 1980s improved the service but the documents remained in print form.

The digital revolution started in true sense with the coming of Internet. Now it became possible to generate and disseminate information in multimedia format to widest possible audience. The digital library projects that started in USA in 1990s facilitated the infrastructure development for a new genre of resources. Besides new resources, widespread
efforts started to imitate print sources in digital form as these sources were having vast social acceptance. People also started to digitize printed sources. Soon digitization became a fashion in all fields mainly because a digital document had a number of advantages over its print counterpart. The greatest beneficiary of digitization was the information seeking community, particularly researchers. This facilitated use of information and its dissemination quite simple. So information sources started proliferating in digital form, and today almost all sort of information is generated and quite a large portion of it is disseminated in digital form.

There is another development known as open access movement. Increasing number of public funded institutions and researchers has started putting its intellectual products in public domain without any restriction on their use. This has made particularly grey literature more accessible. This phenomenon has been doing yeoman’s service for financially starved researchers. It has also succeeded in reducing the gap between the information rich and poor. And today, quite a large number of public funded institutions particularly universities and research institutes have started putting their resources in open access regime. The increasing database size of DOAJ, Open DOAR and the like directories of open access initiatives, is a testimony to the popularity of this movement.

One very important issue needing mention here is uneven quality of information sources available on the Internet. The democratization of Internet has introduced new complications. It has become free for all. Anyone can write and publish on Internet. As a result, persons with insufficient knowledge and skills on specific areas, with ulterior motives or deceitful intentions have joined the experts for authoring content published on the Internet. Many studies have shown that the most used Internet resource, Wikipedia is not very reliable and authenticity of its information particularly for serious research is doubtful. Thus, there is a need for assessment and evaluation of sources before the same can be used. And as the volume of information is increasing on the Internet, this skill is becoming all the more important.

These developments have brought about dimensional changes in not only format of information sources but in their access mechanism also. The earlier system of onetime payment for books and advance payment of journal subscriptions, has given way for subscription and licensing of access to e-documents. Thus, the focus has shifted from forever possession to access for a limited period. Moreover, the concept of fixed price of documents has to accommodate negotiated packaged deals for e-resources. In such a situation, librarians need to have negotiation skills and understanding of licensing agreements.

In its efforts to bring together user and the information source, library has to redefine its strategy. Instead of general services more and more customized services are needed. Instead of library timings, 24/7 user support is the need of the hour. Instead of needing physical presence of the user or his representative for making use of library services, library needs to go to the users’ place, whether he is within library or at his work place or even at home. For searching different databases separately one federated search is needed. For any sort of communication instead of one mode, all possible channels need to be exhausted. The most important thing is that the library has to adopt proactive approach; the hitherto reactive or passive approach is not going to help. And for this purpose, library should use social media not only for reaching out to the user but for two way communication and getting feedback from the users.

Library as a physical space is also undergoing change. The overcrowded stacks
particularly in research libraries are giving way for user spaces and computer systems. The college and university libraries have to offer pleasant ambience for serious reading and thus become a preferred place for reading. The public libraries have started attracting users by organizing book talks, exhibitions, meetings, workshops, etc.

In this scenario, user is himself using all technology based services and all the time he needs to use one or the other source of information. All the sources are not necessarily provided by the library. And thus, may require evaluation before the same can be used. The user must know which sources provide information required by him, whether that information is authentic or not, how to access the sources providing authentic information, cull out information from them and use that information in ethical and legal way. For this purpose librarians have developed a scheme of Information Literacy, which is to be implemented with missionary zeal.

Thus, a number of issues have emerged during last few years and a lot many are yet to come. Libraries have started preparing to face these issues; but we need to speed up our efforts. I am sure the day long deliberations will bear some useful fruits in the evening. And we will have a better understanding of how the future library will look like and how it will operate.
Stud y of User’s Feedback on Librar y Resources and Services With Special Reference to Librar y of Ann asaheb Vartak Arts, Commerce, Science College, Vasai Road, Dist. Palghar (MS)

Ajay M. Kamble

Abstract

Librar y feedback system is a useful tool to find out the views and demands of libr ar y users. It helps to improve the libr ar y resources as well as services. Feedback system provides service providers with the ability to create feedback forms that can be customized to fit the system. This allows the users to submit feedback when they encounter a problem or have a feature request. Feedback collection can be done by using a feedback print forms or uploading a feedback form on the website or both. Due to its measurable nature, feedback system data can be integrated with graphs, allowing service providers to understand what their users are doing in the system and why they do it in one single interface. Practical application of library feedback system and the benefits of this system to the college library have been explained in the paper. Further, importance of feedback system has been enumerated.

Introduction

Library is often called the ‘Heart’ of the institution. According to Ranganathan, library is the trinity of Books, Staff and Readers. The main function of the libraries in the present era is to provide the required information to its users. Along with the university and research libraries, college libraries had also undergone a huge transition by the introduction and application of Information and Communication Technologies. To implement the newer technology effectively, the existing staff of the libraries are trained so that they can make use of this technology in the proper manner and provide better and faster services to the users. The third important part, as enumerated by Ranganathan, are the library users. The users need to be oriented and motivated towards the use of resources and services provided by the library so that they can make effective use of the library. Further, there must be a feedback system as a support in revision and improvement of library resources and services. It may also help to check whether the users are making an effective use of library resources and services.

The mission of the Vartak College Library is to provide appropriate, efficient, effective and intuitive library services in support of the teaching and learning, research objectives
of the Institute and to contribute to delivering an enhanced student and staff experience. It is aimed to consult and seek feedback on all the services to understand its users' needs and expectations and develop library services to meet these needs.

Feedback System

Feedback System is used in various fields in the different manner. It uses customer generated feedback data to measure customer experience and improve customer satisfaction. Feedback data is collected, then, using key performance indicators and feedback metrics, turned into actionable information for improvement in the system. Feedback system provides Service providers with the ability to create feedback forms that can be customized to fit the system. This allows the users to submit feedback when they encounter a problem or have a feature request. The feedback is only made accessible to the service provider. This means that system using feedback are not exposed to the potential harm to their services that feedback made public may cause. Feedback collection can be done by using a feedback print forms or uploading a feedback form on the website or both. Due to its measurable nature, feedback system data can be integrated with graphs, allowing service providers to understand what their users are doing in the system and why they do it in one single interface.

Purpose

The purpose of application of feedback system in library is as follows:

1. To identify the user’s perception about library and its services.
2. It can help to find out the strength and weaknesses of library resources and services.
3. It can help in improvement of the library resources and services.
4. It can be useful in finding the problems faced by the users while making the use of the library.
5. It can help to increase the user’s involvement in development of library and its resources and services.

Methodology

There are various methods by which user studies are conducted. Few of them are:

1. Questionnaire or Interview
2. Observation
3. Critical incident technique

In the present study, a questionnaire was designed and was distributed among the library users. As the total number of teachers exceeds 80 and number of students exceeds 7000, a sample group was selected and the questionnaires were distributed to the teachers and students on their visit to the library. The number of questionnaires distributed and received back has been given below:
Analysis of Data

Some questions have been omitted to maintain the size of the paper. The data received in the questionnaire from the users was tabulated and analyzed as below:

Use of Library

Q. How long have you been using this library or its online/offline services?

<table>
<thead>
<tr>
<th>Period</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. This is my first time</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>3.97</td>
</tr>
<tr>
<td>b. This Semester</td>
<td>0</td>
<td>15</td>
<td>15</td>
<td>11.90</td>
</tr>
<tr>
<td>c. 1 year</td>
<td>1</td>
<td>25</td>
<td>26</td>
<td>20.63</td>
</tr>
<tr>
<td>d. 2-3 years</td>
<td>5</td>
<td>61</td>
<td>66</td>
<td>52.38</td>
</tr>
<tr>
<td>e. 4 years or more</td>
<td>5</td>
<td>9</td>
<td>14</td>
<td>11.11</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
<tr>
<td>Not responded</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

A question was asked pertaining to the period, the library users using the library. It is found that most of the users were using the library for 1 year or more. In case of teachers as most of them are permanent employees, they were using the library for last 4 years or more. As Junior college and PG courses are having the common library, some students are also using it for years.

Library Visiting Frequency

A question was asked regarding the user’s frequency of visiting the library. Options were given and the users were asked to tick the appropriate one.

Q. How often do you visit the library?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Almost Daily</td>
<td>5</td>
<td>51</td>
<td>56</td>
<td>44.44</td>
</tr>
<tr>
<td>b. Once in a Week</td>
<td>3</td>
<td>27</td>
<td>30</td>
<td>23.81</td>
</tr>
<tr>
<td>c. Once in a Month</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td>7.14</td>
</tr>
<tr>
<td>d. No specific period</td>
<td>2</td>
<td>29</td>
<td>31</td>
<td>24.60</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
<tr>
<td>Not responded</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
Most of the users visit the library almost daily or at least once in a week. 44% of the users responded that they visit the library daily. 25% users mentioned that they visit sometimes in the library. 24% users visit the library at least once a week.

**Purpose of Visiting Library**

A question was asked to know the purpose of user’s behind their visit to library.

**Q. What’s your purpose of visiting library? (You can select more than one option here)**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Purpose</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Study</td>
<td>8</td>
<td>115</td>
<td>123</td>
<td>97.62</td>
</tr>
<tr>
<td>b</td>
<td>Look for Journals</td>
<td>7</td>
<td>26</td>
<td>33</td>
<td>26.19</td>
</tr>
<tr>
<td>c</td>
<td>Look for Books</td>
<td>9</td>
<td>53</td>
<td>62</td>
<td>49.21</td>
</tr>
<tr>
<td>d</td>
<td>Consult the Librarian for assistance in locating information</td>
<td>3</td>
<td>8</td>
<td>11</td>
<td>8.73</td>
</tr>
<tr>
<td>e</td>
<td>Check Email</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>4.76</td>
</tr>
<tr>
<td>f</td>
<td>Use Internet</td>
<td>7</td>
<td>37</td>
<td>44</td>
<td>34.92</td>
</tr>
<tr>
<td>g</td>
<td>Other (please specify) ___</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

From the table and chart above, it is clearly found that the most of the users visit the library for study purpose. 49% users visit to search and issue books from library. A fair number of users come to library to use internet and browse through the journals stacks.

**Availability of Information Sources**

A question was asked regarding the availability and dissemination of information sources in the library when the user visits the library.

**Q. Do you often get the ‘information source’, you needed from the library?**

*(Information Source include Books, Journals etc.)*
### Frequency Table

<table>
<thead>
<tr>
<th></th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Always</td>
<td>6</td>
<td>38</td>
<td>44</td>
<td>34.92</td>
</tr>
<tr>
<td>b. Sometimes</td>
<td>5</td>
<td>60</td>
<td>65</td>
<td>51.59</td>
</tr>
<tr>
<td>c. Rarely</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>6.35</td>
</tr>
<tr>
<td>d. Never</td>
<td>0</td>
<td>9</td>
<td>9</td>
<td>7.14</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
<tr>
<td>Not responded</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Most of the users reveal that they sometimes get the information sources needed in the library. 34% users confirmed about always getting the needed information sources in the library.

### Library Services

A question was asked about the know-how of users regarding library services.

**Q. Do you know about the following Services available in the library? (You can select more than one option here)**

The services available in the library were enlisted and the users were asked whether they know the following services:

(a) Circulation – Issue/Return of Books for Home Reading
(b) Ask the Librarian - Online Readers Group on Google Groups
(c) New Arrivals Display – Newly Arrived Books are displayed in this section
(d) Online Webopac – One can search books by visiting this option on library’s website
(e) Online Digital Library – Old exam. question Papers are available online through the library’s website
(f) Current Awareness Service – Current Events are displayed on the Notice Board
(g) Newspaper Clipping Service – Newspaper Clipping’s regarding burning issues are collected and are provided through this service
(h) Reference Service – Reference Books and answers to specific queries of readers are being taken care of under this service
(i) Periodicals Service – List of Journals, Magazine is provided on the notice board and are issued to readers for reading in the library through this section
(j) Newspaper Reading Service
(k) Internet Service – Free Internet browsing service is provided to the users.
(l) CDROM databases – the CDROM collection with the library is made available for students to access within the campus of library. (CD write facility is also given in some cases)
(m) Online Public Access Catalogue – Users can search books with the help of library software soul installed at two computers at the entrance of the library

The user’s response to the question regarding library services has been tabulated hereunder:
Study of User’s Feedback on Library Resources and Services With Special Reference... | 31

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Services</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Circulation</td>
<td>10</td>
<td>93</td>
<td>103</td>
<td>81.75</td>
</tr>
<tr>
<td>b</td>
<td>Online Readers Group</td>
<td>3</td>
<td>18</td>
<td>21</td>
<td>16.67</td>
</tr>
<tr>
<td>c</td>
<td>New Arrivals Display</td>
<td>6</td>
<td>24</td>
<td>30</td>
<td>23.81</td>
</tr>
<tr>
<td>d</td>
<td>Online Webopac</td>
<td>4</td>
<td>38</td>
<td>42</td>
<td>33.33</td>
</tr>
<tr>
<td>e</td>
<td>Online Digital Library</td>
<td>6</td>
<td>32</td>
<td>38</td>
<td>30.16</td>
</tr>
<tr>
<td>f</td>
<td>Current Awareness Service</td>
<td>1</td>
<td>20</td>
<td>21</td>
<td>16.67</td>
</tr>
<tr>
<td>g</td>
<td>Newspaper Clipping Service</td>
<td>1</td>
<td>27</td>
<td>28</td>
<td>22.22</td>
</tr>
<tr>
<td>h</td>
<td>Reference Service</td>
<td>4</td>
<td>26</td>
<td>30</td>
<td>23.81</td>
</tr>
<tr>
<td>i</td>
<td>Periodicals Service</td>
<td>5</td>
<td>14</td>
<td>19</td>
<td>15.08</td>
</tr>
<tr>
<td>j</td>
<td>Newspaper Reading Service</td>
<td>7</td>
<td>94</td>
<td>101</td>
<td>80.16</td>
</tr>
<tr>
<td>k</td>
<td>Free Internet Service</td>
<td>6</td>
<td>72</td>
<td>78</td>
<td>61.90</td>
</tr>
<tr>
<td>l</td>
<td>CDROM databases</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3.17</td>
</tr>
<tr>
<td>m</td>
<td>Online Public Access Catalogue</td>
<td>5</td>
<td>23</td>
<td>28</td>
<td>22.22</td>
</tr>
</tbody>
</table>

It was found that most of the users know only the circulation and newspaper reading service in the library. A fair number of users know about the free internet service. A few others know about the other services in the library.

Library Staff

A question was asked about the availability of library staff at various services points in the library at the arrivals of users. The users responded the query as given below:

Q. When you come to the library, has there been a staff member readily available to assist you?

<table>
<thead>
<tr>
<th>Response</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11</td>
<td>109</td>
<td>120</td>
<td>95.24</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>4.76</td>
</tr>
<tr>
<td>Subtotal</td>
<td>11</td>
<td>115</td>
<td>126</td>
<td>100.00</td>
</tr>
<tr>
<td>Not responded</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>115</td>
<td>126</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Most number of users accepted that they were attended by the staff at their arrival at the
various service points. The users who replied No to this question were asked further to elaborate at which level did they find the staffing level to be low. The responses received were tabulated as under:

<table>
<thead>
<tr>
<th>Level</th>
<th>Teacher</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Circulation (Book Issue / Return Counter)</td>
<td>—</td>
<td>-</td>
</tr>
<tr>
<td>b. Property Counter (Bags and belongings are kept in this section before entering into library, Reading Room)</td>
<td>—</td>
<td>02</td>
</tr>
<tr>
<td>c. Periodicals Section (Journal, Magazines, Newspapers)</td>
<td>—</td>
<td>-</td>
</tr>
<tr>
<td>d. Internet Section</td>
<td>—</td>
<td>-</td>
</tr>
<tr>
<td>e. Reading Hall</td>
<td>—</td>
<td>04</td>
</tr>
<tr>
<td>f. Online Public Access Catalogue – searching books with the help of library software, soul installed at two computers at the entrance of library</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>g. Reference Section (at circulation and Reading Hall)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>h. Others, Please Specify</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

4 of the users responded that there was no staff at Reading hall and 2 responded about the non-availability of staff at proper counter.

User’s Comment on Library Staff

Another question was to check what the users feel about the efficacy of the library staff. The response of the users is given below:

Q. What are your comments about Library Staff?

<table>
<thead>
<tr>
<th>Comments</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Always Helpful and Co-operative</td>
<td>8</td>
<td>20</td>
<td>28</td>
<td>22.22</td>
</tr>
<tr>
<td>b. Quite Helpful and co-operative</td>
<td>2</td>
<td>15</td>
<td>17</td>
<td>13.49</td>
</tr>
<tr>
<td>c. Need Some Improvement</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>3.17</td>
</tr>
<tr>
<td>d. Never find when need help</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Subtotal</td>
<td>10</td>
<td>39</td>
<td>49</td>
<td>38.89</td>
</tr>
<tr>
<td>Not responded</td>
<td>1</td>
<td>76</td>
<td>77</td>
<td>61.11</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>115</td>
<td>126</td>
<td>100.00</td>
</tr>
</tbody>
</table>

22 % of the users admitted that the library staff is always helpful and co-operative. The most 61 % users decided to keep mum on the above question.

Library Environment

A question was asked to find out the feelings of the users about the overall library environment. The responses are being noted as given below:

Q. What do you feel about the overall environment in the library?
Study of User’s Feedback on Library Resources and Services With Special Reference...  | 33

<table>
<thead>
<tr>
<th>Environment</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Pleasant and Silent</td>
<td>9</td>
<td>89</td>
<td>98</td>
<td>77.78</td>
</tr>
<tr>
<td>b. Pleasant but not Silent</td>
<td>0</td>
<td>19</td>
<td>19</td>
<td>15.08</td>
</tr>
<tr>
<td>c. Silent but not pleasant</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>5.56</td>
</tr>
<tr>
<td>d. Noisy</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>10</strong></td>
<td><strong>114</strong></td>
<td><strong>124</strong></td>
<td><strong>98.41</strong></td>
</tr>
<tr>
<td><strong>Not responded</strong></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1.59</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

78% users find the environment in the library as pleasant and silent and most helpful in their studies.

Library Facilities

A question was asked to find out which library facility was admired most by the users. The responses were tabulated at below:

**Q. What aspect of the library you enjoyed the most?**

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Infrastructural Facilities</td>
<td>4</td>
<td>45</td>
<td>49</td>
<td>38.89</td>
</tr>
<tr>
<td>b. Library Services Provided</td>
<td>5</td>
<td>38</td>
<td>43</td>
<td>34.13</td>
</tr>
<tr>
<td>c. Information Sources (Books, Journals)</td>
<td>2</td>
<td>29</td>
<td>31</td>
<td>24.60</td>
</tr>
<tr>
<td>d. Any other, please specify ___</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>11</strong></td>
<td><strong>112</strong></td>
<td><strong>123</strong></td>
<td><strong>97.62</strong></td>
</tr>
<tr>
<td><strong>Not responded</strong></td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>2.38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

It was found that 39% users feel the infrastructural facilities are most enjoyable factor in the library. 34% users feel the library services provided by the library were more enjoyable.

Library Website

Further, question was asked to find out user’s view on the library website. The responses recorded have been shown below.

**Q. Whenever you have used the library’s website, how easy have you found it to be?**

<table>
<thead>
<tr>
<th>Level</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Easy</td>
<td>4</td>
<td>32</td>
<td>36</td>
<td>28.57</td>
</tr>
<tr>
<td>b. Fairly Easy</td>
<td>3</td>
<td>30</td>
<td>33</td>
<td>26.19</td>
</tr>
<tr>
<td>c. Difficult</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>6.35</td>
</tr>
<tr>
<td>d. Haven’t used it</td>
<td>3</td>
<td>37</td>
<td>40</td>
<td>31.75</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>10</strong></td>
<td><strong>107</strong></td>
<td><strong>117</strong></td>
<td><strong>92.86</strong></td>
</tr>
<tr>
<td><strong>Not responded</strong></td>
<td>1</td>
<td>8</td>
<td>9</td>
<td>7.14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
Most of the users (32 %) unveiled that they had never seen or used the library website. The next 29 % users feel the site is quite easy to use. 26 % users feel the website to be fairly easy to access.

Android Application

A question was asked to find out awareness of Android application ‘Vartakapp’ which was recently launched on the website. The response of the users was as hereunder:

**Q. Whenever you have used the android app. “Vartakapp”, have you been able to find the information needed?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Always</td>
<td>1</td>
<td>10</td>
<td>11</td>
<td>8.73</td>
</tr>
<tr>
<td>b. Sometimes</td>
<td>3</td>
<td>10</td>
<td>13</td>
<td>10.32</td>
</tr>
<tr>
<td>c. Rarely</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>6.35</td>
</tr>
<tr>
<td>d. Haven’t used the app. yet</td>
<td>5</td>
<td>66</td>
<td>71</td>
<td>56.35</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>9</strong></td>
<td><strong>94</strong></td>
<td><strong>103</strong></td>
<td><strong>81.75</strong></td>
</tr>
<tr>
<td>Not responded</td>
<td>2</td>
<td>21</td>
<td>23</td>
<td>18.25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>115</td>
<td>126</td>
<td>100.00</td>
</tr>
</tbody>
</table>

56 % of the users admitted that they haven’t used the application. 18 % users had not responded to the query. It directly deduces that 75 % of the library users were unaware about having an android application. The response was less as Vartakapp was launched a few days before the distribution of questionnaires.

Online Services

A question was asked to find out the frequency of use of online services by users. The user’s responses were recorded as shown below:

**Q. How often do you use the library’s online services such as NLIST (E-journals and E-Books), Online Webopac, and Online Digital Library?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Teacher</th>
<th>Student</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 4 or more times a month</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3.17</td>
</tr>
<tr>
<td>b. 2-3 times a month</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>7.94</td>
</tr>
<tr>
<td>c. Once in a month</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>7.94</td>
</tr>
<tr>
<td>d. sometimes in the academic year</td>
<td>0</td>
<td>14</td>
<td>14</td>
<td>11.11</td>
</tr>
<tr>
<td>e. Haven’t used</td>
<td>4</td>
<td>60</td>
<td>64</td>
<td>50.79</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>7</strong></td>
<td><strong>95</strong></td>
<td><strong>102</strong></td>
<td><strong>80.95</strong></td>
</tr>
<tr>
<td>Not responded</td>
<td>4</td>
<td>20</td>
<td>24</td>
<td>19.05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>115</strong></td>
<td><strong>126</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

It was found that at 51 % of the users have never used the online services such as NLIST, Online Webopac or online digital library. 20 % users had not responded to the question. It is found that at only 30 % users have used these services. Only 3 % users are found as the regular user of online services.
Suggestions from Users: Selected Responses regarding the resources and services of Library:

**Teachers**

1. Infrastructure of library is good; Facilities and services are fine; Ordering of books in stacks may be improved.
   **Librarians Remark (LR):** Ordering of books in stack is done as per dewey decimal classification scheme. As the users are not aware of the scheme, proper guides on the stacks and information about main classes have been displayed on the notice board to ease the access of books to teachers.

2. Internet connection gets disconnected frequently.
   **LR:** Library is having internet connections under the National Mission on education through Information and Communication Technology (NM EICT) scheme and the Internet Service Provider for NM EICT is BSNL. BSNL is providing poor internet services and the connection gets disconnected frequently. Despite repeated communications has been made with BSNL in this regard and all attempts have been made to improve the internet connectivity to users.

3. Library should be made accessible for students also so they can also see content of books.
   **LR:** When library was shifted to the present place, it was designed in such a way to provide open access to users and open access was provided to users in the first 8 months after shifting. But, due to open access and less staff, 2000 books were found missing in this period. Hence, open access system was terminated for students.

4. Provide Xerox (reprography) facilities and also provide colour and/or black and white printed copies for the staff.
   **LR:** Due to scarcity of staff and required infrastructure, it was not possible to provide reprography and printing services through library. Hence, it was decided to provide these services through private agencies and accordingly a counter for reprography and printing at much lower cost than nearby market has been opened at the ground floor for the users.

5. Staff should help in searching books.
   **LR:** Library is open access for teachers and proper guides, webope are available as primary sources to help in searching of books. Despite, if some staff is not able to search the book, the staff is readily available at the counter to help them to find out the needed book from stacks.

6. Website font, its structure and photo gallery shall be kept updated.
   **LR:** Library has tried to update the website from time to time. It is not possible sometimes due to heavy loads of work on the existing staff.

**Students**

1. Most of the students requested that there should be one full time staff in the reading room for maintaining silence.
   **Librarians Remark (LR):** Library is facing short of library attendants as the sanctioned staff for library is 14 LA’s and available staff was only 6. Hence it was
not possible to keep a staff full time in the reading room. But on student’s request, one staff is devoted full time in reading room from November 2014 onwards.

2. Students are not able to find books through Webopa c, hence they shall be given open access to book stack section. The students must get the book with out searching on the Webopa c.

**LR:** Library was earlier designed in such a way to provide open access to all students and it was started in 2009. But the huge number of book loss in 6 months was occurred due to which open access was converted to closed access. Webopa c is meant to search books in the library and it is user friendly and didn’t need any expertise in computers, hence it shall be used to search books.

3. Old syllabus books shall be made available on sale for needy students.

**LR:** Old syllabus books, which are discarded through proper procedure are made available to students at the annual book fair at nominal prices from 2012 onwards.

4. More books on competitive exams shall be made available in the library.

**LR:** Till 2014, 700 books regarding various competitive exams have been made available in the reading room for reference reading. In 2014, a separate collection of 400 books had been purchased and made available for home issuing at the circulation counter.

5. Reference books should be issued at home.

**LR:** Reference books are meant to consult in the library premises only and hence they are made available for reading in the library premises. They can’t be made available for home issuing due to its price and size constraints.

6. Infrastructure is fine but books shall be issued for home reading in the exam period also. There is limited stock of books during the exam period.

**LR:** It is experienced from years that at most of the students failed to return books after the completion of their exams, if books are issued till the end of exam. Library has faced a number of book losses during the period of exam as some students who come to know that they will not get through the exams keep the books with them and never return it to the library, unless needed to do so. Hence, books were taken back before the commencement of exam and are issued for reading in library premises instead of home in the exam period.

7. Book bank books shall be provided to needy and poor students from open category also.

**LR:** Book Bank books are provided to needy and poor students from open category under the SAF book bank scheme. Proper notice is displayed on notice boards and is circulated in classrooms during regular lectures, to provide book bank services to all the needy students.

8. Mobile use shall be banned in the library and it disturbs the other students reading beside.

**LR:** Use of mobile phones is already banned and notices have been posted at various places regarding the same.

9. Wi-Fi facilities shall be provided for daily users in reading area.

**LR:** A Wi-fi facility is already available for daily users in reading area. The only restriction is it is available to use on laptop only as mobile, tablets are not allowed in the library.

10. Previous years question papers should be available when needed.
**Study of User’s Feedback on Library Resources and Services With Special Reference...**

**LR:** Previous years questions papers are available 24x7 on the library website, android application, and intranet and in print form at the library issue counter on Saturdays.

II. Problem occurs while searching for books through title.

**LR:** While searching books through title, even if a spell goes wrong by an alphabet, the user may not get the needed book. But, it is not necessary to enter the whole title of book while searching books. A part or few important words in the title are enough to find the availability of books from the webopa.c.

**Conclusion**

The feedback and some suggestions were found useful for library. It is found that though library has a huge resources and better services, but the users are not aware of it. To make them aware of the services, it was decided to print the information brochure and distribute it among the users. It was also decided to plan an orientation class for novice users on how to use the library effectively. The feedback also helps a lot in improving the existing services and take preventive measures over the problems faced by users during their visit in the library. Hence it is recommended that every library shall practice a proper feedback mechanism in order to improve their resources and services.
User Satisfaction in ICT Enabled Library

AKASH KUMAR SINGH; SYED ANEES AHAMAD & KUMKUM SINGH

Abstract

We are all aware that ICT (Information and Communication Technology) have revolutionized all types of societal works and services, library products and services are not the exception of it. In the present paper, modern ICT enabled library products and services have been discussed and concluded that without the implementation of ICT we could not satisfy the user community in a better way.

Keywords

ICT, RFID, OPAC, Institutional Repository, Web 2.0

What is ICT

Information Communication and Technology shortly known as ICT is not a single technology only, it is the complete system of technologies, time term has been defined by many scholars, learners and learned societies in different ways, but literary meanings of comprised terms are giving more appropriate and authentic idea about ICT. It comprises with two strong technologies, one is information technology which deals with the equipment, infrastructure and software through which information can be received, accessed and disseminated, for example phone, faxes modems, networks, etc.

Definition

ICT stands for “Information Communication Technology” It refers to technologies that provide access to information through telecommunication. It is same as Information Technology (IT), but focuses primarily on communication technologies. This include the internet, wireless network, cell phone, and other communication mediums or we can say that when computer technology and telecommunication technology combines together called Information Communication Technology.

The term of ICT describes the use of computer based technology and the internet to make information and communication services available to a wide range of users. The term is used broadly to address a range of technologies, including telephones and emerging technology devices. Central to these is the internet which provides the mechanism for disseminating data in numbers of formats including of formats including text, image, graphics, sound and video.
Introduction

Information Technology (IT) age has been started from 1960 s and after the development of telecommunication i.e. from 1980 s Information and Communication Technology (ICT) came into existence. Due to impact of IT and ICT, every societal work and service are IT and ICT dominated. This is the age of motion, with out the application of IT and ICT we can’t satisfy the people/user/customer. Library works and services are not the exception of it. Changes of library works and services are given below for ready reference:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Traditional Library</th>
<th>ICT Enabled Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ledger based document issue/return</td>
<td>Library management software (LMS) operated barcode enabled document issue/return</td>
</tr>
<tr>
<td>2.</td>
<td>Guard/Darwan personnel based security</td>
<td>Radio Frequency Identification (RFID) based security</td>
</tr>
<tr>
<td>3.</td>
<td>Manual CAS/SDI service</td>
<td>Automated CAS/SDI service</td>
</tr>
<tr>
<td>4.</td>
<td>Manual catalogue search from catalogue cabinet</td>
<td>OPAC and Web OPAC based catalogue search which is a module of LMS</td>
</tr>
<tr>
<td>6.</td>
<td>Manual exhibition, lecture, poster based user education programme</td>
<td>Overhead/LCD Projector, CD/DVD on lectures, Networked Institutional Repository based exhibition, lectures, poster presentation</td>
</tr>
<tr>
<td>7.</td>
<td>Library</td>
<td>Library and Information Centre/Information Centre/Resource Centre/Learning Resource Centre</td>
</tr>
<tr>
<td>8.</td>
<td>Less managerial skill for quality improvement</td>
<td>TQM (Total Quality Management)/IM (Information Management)/KM (Knowledge Management) for quality improvement</td>
</tr>
<tr>
<td>9.</td>
<td>No marketing strategy for library and information products and services (LIPS)</td>
<td>Various electronic and online LIPS for marketing earning money</td>
</tr>
<tr>
<td>10.</td>
<td>Librarian/Chief Librarian, Deput y Librarian, Asstt. Librarian</td>
<td>Librarian/Manager/Information Manager/Resource Manager/Knowledge Manager and his/her Deput y and Asstt. Librarian</td>
</tr>
<tr>
<td>11.</td>
<td>Low cost service</td>
<td>High cost service</td>
</tr>
<tr>
<td>12.</td>
<td>Only traditional post</td>
<td>Many new posts created such as Information Scientist, Digital Librarian Manager, Network Administrator, Programmer, Software Manager other than Librarian, Deput y Librarian, Asst. Librarian, Calligraphist, Librarian y Asstt.</td>
</tr>
</tbody>
</table>
Many new sections e.g. Digital Library Section, E-Resource Section etc. are established.

Incorporation of IT and ICT e.g. various LMS including Open Source LMS (Theory and Practice), various Digital Library Software (DLS) including Open Source DLS (Theory and Practice), Web 2.0/3.0, Libray 2.0/3.0, Reference 2.0/3.0

More systematized and ICT enabled e-resource, networked/open source/ institutional repository of rare books, rare journals, Question Papers, Syllabuses, Theses, Dissertations, rare manuscript, lecture notes also available.

Kiosk/networked institutional repository based services

Converted into Information Scientist/Computer Scientist to cope up with the changed management

More resource generator through International Conference/National Conference/Book/Composite Book/Journal publication and obviously smart through better education and service.

More importance on Librarian and library services in National Knowledge Commission, 2005

At par status with teachers in India. Developed count ries Librarian earmarked as ‘Teacher of the Teacher’ and enjoys more status than a teacher.

Meaning of User Satisfaction and Modern Library Services

Users are the customer of every library. Library and Information Centre/Resource Centre plans, manages and represents its resources to satisfy its users/customers. Right information to the right user at the right time and right place at right price is the mantra of user satisfaction. In ICT era there are various types of resources other than printed resources. In modern Library, following services are available:

(a) E-book (Commercial & Open Source)
(b) E-Journal (Commercial & Open Source)
(c) Online database
(d) CDs/DVDs of technical lectures
(e) OPAC service
(f) Digital Library/Institutional Repository for availability of library resources
(g) Website
(h) Blog
(i) Instant Messaging
(j) Online abstracting and indexing service
(k) Online current content
(l) Online user education/User education through Networked Institutional Repository/Overhead Projector/ LCD Projector.
(m) Online answer of FAQs/Online reference service
(n) Online Community Information Service/Kiosk based Community Information Services
(o) Online CAS/SDI
(p) Bulletin/Discussion Board
(q) Online Exhibition
(r) Online Speak

If we provide the above services to the users in a very short time then we can avail the users. If we could not satisfied those with ICT enabled services then we must lose the users. In the present scenario, users dislike the traditional library services because reading room printed books/journals study is very much reduced due to ICT enabled easy study.

**Web 2.0 Technology**

Web 2.0 poses general challenges for libraries. Even more importantly Web 2.0 technologies allow libraries the opportunity for more outreach activities and customizing their online presence for their patrons, helping “create new resources for their users”. This is where academic libraries can get the most use out of Web 2.0 technologies. Many of these technologies allow for organizational customization and increase participation by library users. Libraries may use these networks to market themselves to members by creating library profiles. By doing so, libraries and librarians could possibly bringing their services to the website membership and create a greater online presence. This would lay the groundwork for interacting with more patrons and users within the web-spaces they participate. Libraries can keep in touch with the informational trends and needs of these groups. “An understanding of these resources, even if they are not currently being used, is necessary in order to keep in touch with and have an understanding of this group (students)”. Libraries especially should try to create more value with social networking profiles “by offering a space for patron to give feedback, by providing news and information, or by providing a portal to library services”. While social networking online is effective and dynamic Web 2.0 software for libraries to augment their traditional services, it is not the only one.

Web 2.0 technology is very much helpful to satisfy the modern users. Now, we can aware about Web 2.0 technology and its application. The term “Web 2.0” was officially coined in 2004 by Dale Dougherty and Tim O’Reilly in O’Reilly Media Inc. the company famous for its technology-related conferences and high quality books. There is no single definition of Web 2.0. The term “Web 2.0” was coined by technology commentator Tim
O’Reilly who tried to define it as follows: “Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an ‘architecture of participation’ and going beyond the page metaphor of Web 1.0 to deliver rich user experiences.”

Features
Web 2.0 websites typically include some of the following features/techniques that Andrew McAfee used the acronym SLATES to refer to them.

Search
The ease of finding information through keyword search which makes the platform valuable.

Links
Guides to important pieces of information. The best pages are the most frequently linked to.

Authoring
The ability to create constantly updated content over a platform that is shifted from being the creation of a few to being the constantly updated, interlinked work. In Wikis, the content is iterative in the sense that the people undo and redo each other’s work. In blogs, content is cumulative in that posts and comments of individuals are accumulated over time.

Tags
Categorization of content by creating tags that are simple, one-word descriptions to facilitate searching and avoid rigid, pre-made categories.

Extensions
Automation of some of the work and pattern matching by using algorithms e.g. amazon.com recommendations.

Signals
The use of RSS (Really Simple Syndication) technology to notify users with any changes of the content by sending e-mails to them.
Characteristics

Web 2.0 is the method by which data and services previously locked into individual web pages for reading by human beings can be liberated and then reused. The important characteristics of web 2.0 are:

- allows data to be exposed, discovered and manipulated in a variety of ways distinct from the purpose of the application originally used to gain
- permits the building of virtual applications, drawing data and functionality from a number of different sources as appropriate
- participative
- work for the user
- modular
- about sharing: code, content, ideas
- about communication and facilitating community
- smart
- built upon Trust

Benefits

Following are the benefits observed by implementing Web 2.0:

- Faster time to market
- Closer relationship with customers
- Increased responsiveness

Web 2.0 Tools and Technologies

Web 2.0 tools are digital tools. Although allow users to create, change and publish dynamic content of all kinds, Web 2.0 tools syndicate and aggregate this content.

Some Web tools are the following:

Blogs

A blog, abbreviated form of web log, is a website, usually maintained by an individual, with regular entries of commentary, descriptions of events, or other material such as graphics or video. Blogs entries known as blog posts are made in journal style and are usually displayed in reverse chronological order. A blog entry might contain text, images or links to other blogs and web pages. Any library user can publish a blog post easily and cheaply through a Web interface, and any reader can place a comment on a blog post. The most obvious application of blogs for libraries is to use it as a tool for promotion, publicity and for outreach services.

It is a powerful two-way based tool. A blog is a website where library users can enter their thoughts, ideas, suggestions, and comments. Blogs entries known as blog posts are made in journal style and are usually displayed in reverse chronological order; entries listed in specific categories that can be searched; links to other sites of interest and places for comments; and a monthly archive of previous entries.
Examples

Latvian Librarian Blogs
- http://bibliotekari.blogspot.com/
- All about Latvia
- http://www.allaboutlatvia.com/

Wikis

Wikis are essentially open web pages, where anyone registered with the Wiki can publish to it, amend it, and change it. Wikis are often used to create collaborative websites and to power community websites, for example, the collaborative encyclopedia i.e. Wikipedia. Libraries can use Wiki as a communication tool to enable social interaction among librarians and patrons.

A Wiki is a webpage or set of WebPages that can be easily edited by anyone who is allowed access. Wikipedia’s popular success has meant that the concept of the Wiki, as a collaborative tool that facilitates the production of a group work, is widely understood. Wiki pages have an edit button displayed on the screen and the user can click on this to access an easy-to-use online editing tool to change or even delete the contents of the page in question.

Examples
- LIS Wiki: http://liswiki.org/wiki/Main_Page
- Library Wikis: http://librarywikis.pbwiki.com/

Really Simple Syndication (RSS)

RSS stands for Really Simple Syndication or Rich Site Summary. It informs users of updates to blogs or websites, which are interested by the users. Libraries are creating RSS feeds for users to subscribe to, including updates on new content in subject database. Through RSS feeds, librarian can announce the availability of new books and other resources in a given subject area; can promote events organized in the library for library users.

RSS is a family of web feed format used for syndicating content from blogs or web pages. RSS uses an XML that summarizes information items and links to the information sources. It informs users of updates to blogs or websites, which are interested by the users. Many web browsers have built-in feed readers or aggregators, and can easily add feeds to web page.

Examples
- Edmonton Public Library: http://www.epl.ca/RSSFeeds/EPLRSSFeeds.cfm
- Hennepin County Library: http://www.hclib.org/pub/search/RSS.cfm
Synchronous Communication or Instant Messaging (IM)

IM is a form of real-time communication between two or more people based on typed text, images etc. It becomes popular due to its quick response time, ease of use and possibility of multitasking. Libraries have begun employing it to provide “chat reference” or “real-time reference” services where user can synchronously communicate with librarian, experts much as they would in a face to face reference context. Libraries can benefit greatly by adopting IM for CAS/SDI services as well as online (virtual) reference services.

It is estimated that there are several millions of IM users, using for various purposes viz: simple requests and responses, scheduling face to face meetings, or just to check the availability of colleagues and friends.

Examples

• Saint Joseph Public Library: http://www.librar yforlife.org/asksjcpl/asksjcpl.html
• Question Point/ Ask a Librarian: http://www.spl.org/default.asp?page=D=info_ask

Social Networking

Social networks are built upon a hypothesis that there exists a determinable networking structure of how people know each other. A social network thus can be realized into a net structure comprising nodes and edges. Nodes represent individuals or organizations. Edges connecting nodes are called ties, which represent the relationships between the individuals and organizations.

MySpace and Facebook are two popular social networking sites launched during 2003 and 2004 respectively. MySpace allows organizations to create their own profiles, pages and can be used by libraries. But Facebook allows individual librarians to create profiles.

Examples

• Bryant University Library: http://www.facebook.com/pages/Smithfield-RI/Bryant
• University Library/ School of Library and Information Science/ School of Library and Information Science/ http://www.spl.org/default.asp?page=D=info_ask
• Brooklyn College Library: http://www.myspace.com/brooklyncollegenewlibrary

Podcasting

A podcast is a series of audio or video digital-media files which is distributed over the Internet by syndicated download, through Web feeds, to portable media players and personal computers. Librarians can podcasts promotional recordings and new resources. Podcasts enable librarians to share information with anyone at any time. Though the same content may also be made available by direct download or streaming, a podcast is distinguished from other digital-media formats by its ability to be syndicated, subscribed to, and downloaded automatically when new content is added.
Examples

- Worthington Libraries: http://www.worthingtonlibraries.org/programs2go/
- Denver Library: http://podcast.denverlibrary.org/

**Tagging:** A tag is a keyword or term or subject heading assigned to a digital object (a website, a picture, a geographic map, a blog entry, a video clip, etc.) to describe it, but not as a part of formal classification system. Web 2.0 enables the users to create subject headings for the object at hand. The concept of tagging has been widened far beyond website book marking, and services like Flickr (Photos), YouTube (video) and Audio (podcasts) allow a variety of digital artifacts to be socially tagged.

Examples

- University of Pennsylvania: http://tags.library.upenn.edu/

Mashups

A mashup is a Web application that combines data from more than one source into a single integrated tool. An example is the use of cartographic data from Google Maps to add location information to real-estate data, thereby creating a new and distinct web service that was not originally provided by either source. Content used in mashups is typically obtained from a third party source through a public interface or API (web services). Mashups perhaps the single concept that underpins all the technologies discussed above. For example WikiBios is a site where users create online biographies of one another, essentially blending blogs with social networks. In some ways, many of the technologies discussed above are mashups in their very nature.

Folksonomy

With World Wide Web (WWW) moving towards next generation, known as Web 2.0, more and more applications are encouraging users not only to consume content but also to generate content with ease. This is resulting in generating enormous content on the web. Organizing content on the web is still a challenge for everyone. Web 2.0 also brings a mechanism called “Folksonomy”, which will help in organizing the content by the users. Folksonomy allows users to tag or assign keywords to the content generated from their perspective so that these tags can be used in the future to retrieve them.

The jargon “Folksonomy” is a blend of two words “Folk” and Taxonomy”. It stands for the concept of tags assigned to the content by the users. As per Vander Wal, Th omas (2005) who coined this word, “Folksonomy is the result of personal free tagging of information and objects (anything with a URL) for one’s own retrieval. The tagging is done in a social environment (usually shared and open to others). Folksonomy is created from the act of tagging by the person consuming the information.”

A system which allows for “Folksonomy”, users are free to add tags to a piece of content (picture, information, etc.) from their perspective so that they will find it easy to retrieve it
later. Since, there are no predefined categories; users are free to categorize their resources. This makes the task of categorizing or tagging simple to the user.

Librar y

The term “Librar y 2.0” was coined by Michael Casey on his blog Librar y Crunch as a direct spin-off of the terms Business 2.0 and Web 2.0. Casey suggested that libraries, especially public libraries, are at a crossroads where many of the elements of Web 2.0 have applicable value within the librar y commun ity, both in techn ology-driven services and in non-techn ology based services. In particular, he described the need for libraries to adopt a strategy for constant change while promoting a participatory role for librar y users. Librar y made its conference debut at Inter net Librarian 2005 in October, 2005, when Michael Stephens of Saint Joseph Count y Public Librar y addressed the idea in relation to the typical librar y website. A September 2006 article in Library Journal titled, “Librar y 2.0: Service for the next-genera tion librar y,” begins by expressing the benefit of Librar y 2.0 to librar y administra tors and taxpayers as providing “more efficient ways of delivering services to achieve greater returns on financial investments.” The article continued by asserting that at the much discussed Librar y 2.0 is important for librarians as it may radically change our customer service and interaction. With Librar y 2.0, librar y services are frequently evaluated and up dated to meet the changing needs of librar y users. Librar y 2.0 also calls for libraries to encourage user participation and feedback in the development and maintenance of librar y services. The active and empowered librar y user is a significant component of Librar y 2.0. With informat ion and ideas flowing in both directions – from the librar y to the user and from the user to the librar y – librar y services have the ability to evolve and improve on a constant and rapid basis. The user is participant, co-creator, builder and consultant – whether the product is virtual or physical.

The redefinition of the librar y’s role is driven not only by the rapidly evolving Web 2.0 techn ologies, but also by the changing needs and demands of the next genera tion (Internet genera tion) users. Preparing a Know your User pamphlet (as opposed to the Know your Librar y ones) may be a very useful and educative experience for any Librar y with surprising results. It may be useful to remind ourselves of the (apocryphal) quote attributed to Mahatma Gandi. A customer is the most important visitor on our premises. He is not dependent on us. We are dependent on him. He is not an interrupt ion in our work. He is the purpose of it. He is not an outsider in our business. He is part of it. We are not doing him a favour by serving him. He is doing us a favour by givi ng us an opport un ity to do so.

Ch aracteristics of Librar y

1. It is user-centre d:—Users participate in the creation of the content and services they view within the librar y’s web-presence, OPAC, etc. The consum pt ion and creation of content is dynamic, and thus the roles of librarian and user are not always clear.

2. It provides a multi-media Experience:—Both the collections and services of Librar y 2.0 contain video and audio components.

3. It is socially Rich:—The librar y’s web-presence includes users’ presences. There are both synchronous (e.g. Instant Messa ging) and asynchronous (e.g. wikis) ways for
users to communicate with one another and with librarians.

4. It is communally innovative:—This is perhaps the single most important aspect of Library 2.0. It rests on the foundation of libraries as a community service, but understands that as communities change, libraries must not only change with them, and they must allow users to change the library. It seeks to continually change its services, to find new ways to allow communities, not just individuals to seek, find and utilize information.

5. Information on Easily Discoverable:—As well as exposing basic information about the institution and its services, the open library should seek to enable discovery, locating, requesting, delivery and use of the resources in its care. Physical library holdings, for example, might usefully become far more visible than they are now. OCLC has made important progress in this area, and their Open WorldCat initiative allows searchers to find books held by participating libraries in popular search engines such as Google and Yahoo! How much further might we go, though, in enabling the discovery of our holdings, and in allowing anyone wanting access to them to receive a copy of the desired item, whether they are a member of that library or not?

6. Libraries Seek Participation:—Library 2.0 facilitates and encourages a culture of participation, drawing upon the perspectives and contributions of library staff, technology partners and the wider community of users. Blogs, wikis and RSS (Really Simple Syndication) are often held up as exemplary manifestations of Web 2.0. A reader of a blog or a wiki is provided with tools to add a comment or even, in the case of the wiki, to edit the content, as an authorized member/user. This is what we call the Read/Write web.

Elements

Library 2.0 could be understood to have these four essential elements:

- It is user-centred
- It provides a multi-media experience
- It is socially rich
- It is community innovative

Services

The following is an indicative list of services that libraries could implement using Web 2.0 technologies.

- Customizable Alerts via Email/SMS notification for new arrivals books with author, title, keywords search terms; whenever a paper authored by a colleague (from the same or other departments/institutions) appears in a journal or conference proceedings online; get an email a day prior to and an SMS an hour before any seminar on campus whose title/topic contains some user defined keywords; and a little thought will reveal that each of these need some experimentation and integration of various Web 2.0 tools to implement.
- User Ratings/Reviews/Discussions
- Streaming/Podcasting and Archival of Seminars
Reference Services

A reference services model based on Web 2.0 principles called Reference Services 2.0 or RS 2.0. RS 2.0 is a proposal model using Web 2.0 tools for an effective reference service in 2.0 libraries.

Mobile Technologies in Library Services

Mobile Technology has now come up with “Libraries in Hand” trend. Our librarians are in move to determine how these devices are affecting information access and ensure that they are communicating with patrons and providing web content in the most appropriate and effective ways.

Libraries today are covering most of the technologies given by mobile industry like PDA’s, Blackberry, iPod, Cell phones, Ultra Mobile PC’s (Ultra Mobile PC) and mobilizing library contents in a portable form suitable for small screen and delivering short services in the form of contents/information with device’s multiple searching features.

As not all content is optimized for the mobile network, so the Trans coded Web is developing to transcribe content to fit into a mobile device. It’s not perfect and some content is lost, but it’s happening. There is mobil.licio.us, mobile blogger and a mobile My Space version. YouTub e, zoom feature, excellent touch-based user interface i-Phone.

Circulation and Other Services

Librarians will need to become proficient in using these devices to enable users to access them anywhere from anywhere. Sirsi announced a product called Pocket Circ software that runs on a PDA that allows library staff to perform circulation tasks in any part of the library with wireless connectivity. The addition of circulation information and book locations in the library take advantage of the mobility of the device and add another degree of self-sufficiency to the transaction. Libraries may want to consider providing access to circulation records, book due dates, overdue notices, and ILL requests via cell phones and handhelds to better serve their mobile patrons. It’s definitely seems a boon to the staff as free them to serve user and perform both online and offline circulation operations without having to be on the desktop workstation.

E-books and Databases Searching

The publishers are in move to convert content into an e-book format for mobile devices (reading from Kindle, Sony’s e-book reader, cell phones, and other e-book readers) CSS does allow for remarkable functionality and formats the e-books as you desire and provides a great reading experience for the user.

The strong internet browsing capabilities of new generation mobile devices have increased demand for online mobile content, and the free e-books now only available from Falbe Publishing’s main websites can now be easily obtained by mobile device users at http://mobile.falbepublishing.com To create a positive and useful experience for mobile internet browsers, the new mobile website presents a very brief and simple version of the publisher’s offerings in order to accommodate small screens.
Only brief messages and directions on how to access content are on the mobile website so users Google has worked with major publishers to bring chapters, pages and volumes off of the bookshelf and onto the mobile device. The end result would be downloadable e-books which Google users would store on their Blackberries, PDA’s and smart phones (or mobile e-book reading devices) along with the traditional PC’s and lap tops which would either be free & advertiser supported, or available via ‘on demand’ micro payments.

Jens Redmer, director of Google Book Search in Europe, said: “We are working on a platform that will let pub lishers give readers full access to a book online. E-Book s are being provided by Overdrive, Net Librarian and more, which can be used on mobile devices.

We also have the Lexis Nexis content on the blackberry wireless handheld, you can search the Lexis Nexis services or access you Lexis Nexis publisher’s topic from the device. It’s a leader in providing integrated information solution.

Ovid is also mobilized the critical information in the form of journal articles, an instant access to vital information, drug, drug interaction, and other topics.

Catalogues and Ready References

ILS vendors are starting to make Mobile Optimized Catalogues—so that patrons can access library catalogues through their mobile device. Air PAC product enables searching library catalogs as well as patrons can access their library account, request and renew their items on their own wireless device (PDA, Web enabled phones, web tablet, laptop), it’s a product that will autodetect the type of device you are using and format accordingly the catalogs with out graphics for better viewing. Lib Sirsi-Dynix, Inn ovative and even Librarian Things have this option now. Ready Reference in the form of various e-book publications is available for a wide range of mobile devices, also search with Mobile Ask, answer.com.

Conclusions

Due to impact of ICT a silent revolution has been made in Library products and services. With out implement ation of ICT successful library services as well as user satisfaction is not possible. So, we have to manage the aspects of modern library services successfully to satisfy the library users/clientele/customers in a better way.

References

Use of Information and Communication Technology in Aided Arts, Commerce and Science Colleges of Mara th a Vidya Prasarak Samaj, Nashik

Amol Pravin Mehendale

Abstract

Advent Information and Communication Technology have brought revolution in the field of library and information science. It has helped libraries to provide more user friendly services. Academic libraries have a vital role to play in the higher education system. So it has become necessary to all academic libraries to adopt ICT technologies to provide innovative services to its clientele. The present paper aims to explore the ICT infrastructure available and its use in the government aided Arts, Commerce and Science College Libraries of Mara th a Vidya Prasarak Samaj, Nashik. The survey method was adopted to carry out the study. Data was collected by using Questionnaire method. At the end the study gives a clear picture of the status of ICT infrastructure and its usage in these libraries and recommends some solutions to improve the present status.

Introduction

Advent of Information and Communication Technology have brought revolution in the field of library and information science. It has helped libraries to provide more user friendly services and thereby provide right information to the right user at the right time and in right format. Libraries are using Information and Communication Technologies (ICT) to complete their routine activities like acquisition, accessioning, cataloguing, serial control etc. as well as resource sharing through networks and providing value added information services.

Academic libraries have very important role to play in the overall higher education system of any country. So it’s mandatory to academic libraries to adopt new technologies to provide innovative, timely and value added services to its clientele to satisfy their information needs. On this background, present paper examines the ICT infrastructure and its usage in Government-Aided Arts, Commerce and Science Colleges of Mara th a Vidya Prasarak Samaj, Nashik.
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Objectives:

1. To identify ICT infrastructure available in the college libraries under study.
2. To identify the status of automation process and use of ICT.
3. To find number of ICT literate library staff.

Methodology

The present study is based on primarily data collected from following Government-aided college libraries run by Maharashtra Vidya Prasarak Samaj, Nashik by using survey methodology.

1. K.T. H.M. College, Nashik
2. Arts, Commerce and Science College, Dindori
3. Arts and Commerce College, Vani
4. Arts, Commerce and Science College, Tryambakeshwar
5. Arts Commerce and Science College, Nandgaon
6. G.M.D. Arts, B.M. Commerce and Science College, Sinner
7. K.G.D.M. Arts, Commerce and Science College, Niphad
8. K.K. Wagh Arts, Science and Commerce College, Pimpalgaon (B.)
9. Arts, Science and Commerce College, Ozar (Mig)
10. Arts and Commerce College, Saikheda
11. Kar maveer Punjababa Govardhane Arts, Science and Commerce College, Igatpuri
12. K.S.K. W.Arts, Science and Commerce College, Cidco, Nashik-8
13. Smt. Vimalbe n Khimji Tejooka ya Arts, Comm erce and Science College, Deolali Camp
14. Kar maveer Abasaheb Alas N. M. Sonawane Arts, Comm erce and Science College, Satana

A structured questionnaire was prepared and distributed to every librarian of above college libraries to collect the data. Data collected from above libraries was analysed and conclusions were derived. This study was carried out in Dec. 2013.

Literature Review

Walmiki & Ramakrishnegowda (2009) in their survey of the status of ICT infrastructure in six selected university libraries of Karnataka revealed that the libraries greatly vary from one to another as far as the ICT infrastructure is concerned. They even pointed out that most of the libraries lack basic ICT infrastructure. Okiy (2010) in paper highlights inadequacy of ICT infrastructure in academic libraries of Nigeria and also states the necessity of change in approach of government toward the fund ing and provision of ICT infrastructure in libraries at federal and state level. Tiwari & Sahoo (2013) noted that in an ovative use of ICT in university libraries of Rajasthan is not widespread. Libraries need to concentrate on the growth of ICT infrastructure and library staff training. Siddike, Munshi, & Abu Sayeed (2011) conducted a study. It aims to explore the extent of adoption of information and communication technology (ICT) in the university libraries of Bangladesh. In this study they clearly stated need of redesigning library services in the age ICT. They narrated status of ICT applications in public and private university libraries and also find the problems...
faced by the professionals and made some specific recommendations for the solutions.

All the above studies have stated need to find out infrastructure and use ICT in academic libraries and thereby increase use of ICT infrastructure to provide better, innovative and timely information services.

Data Presentation and Analysis

A structured questionnaire was prepared and distributed to Librarian of all fourteen college libraries under study. The received data was presented in tabular format and analysis was done to derive conclusions.

1. ICT Infrastructure

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</tbody>
</table>

As far as ICT Infrastructure is concerned, every library has some or other ICT Infrastructure available with them. The above table shows that KKW library and KTHM library have largest number of computers available i.e. 10 Computers each. On the other hand, ACST, ASCN, ACS libraries have very few computers available in the library i.e. 2 computers each. As far as printer and other ICT equipment are concerned KTHM is leading in the table. But still it does not possess photocopier and LCD projector. ACST and KSKW are the only libraries which possess the LCD projector. No library has OCR Technology and Fax Machines. The above table clearly shows that there is shortage of computers as far as the student strength and demand of time is concerned. Even though KTHM College has good infrastructure still it needs to increase the number of computers. The table also shows that digitization of library collection is yet to be started as no library has OCR software. Even no library has facsimile machine with them.
(b) **Software**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of College</th>
<th>Library Software</th>
<th>Management Software</th>
<th>Anti-Virus Software</th>
<th>CD Net Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>KTHM</td>
<td>Vruddh i</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>02.</td>
<td>ACSD</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>03.</td>
<td>ACV</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>04.</td>
<td>ACST</td>
<td>Librarian Manager</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>05.</td>
<td>ACSN</td>
<td>Librarian Manager</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>06.</td>
<td>GMD S</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>07.</td>
<td>KKW</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>08.</td>
<td>KGDM</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>09.</td>
<td>ASCO</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>10.</td>
<td>ACS</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>11.</td>
<td>KPGI</td>
<td>Librarian Manager</td>
<td>—</td>
<td>NPA</td>
<td>—</td>
</tr>
<tr>
<td>12.</td>
<td>KSKW</td>
<td>Book Smith V 2.1</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>13.</td>
<td>VKTD</td>
<td>Book Smith V 2.1</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
<tr>
<td>14.</td>
<td>NMSS</td>
<td>Auto Lib</td>
<td>—</td>
<td>QH</td>
<td>—</td>
</tr>
</tbody>
</table>

The above table clearly shows that all the libraries of MVPS, Nashik have started the process of automation. Libraries use various software packages for automating the library services. The table also shows that all the libraries use integrated library management software. Most of the libraries are using Auto Lib Software except KTHM which is using Vruddh i, while ACST, ACSN, and KPGI libraries are using the Librarian Manager Software. Booksmith V.2.1 is being used by KSKW and VKTD libraries.

As far as anti-virus software for providing protection from viruses, Quick Hill Anti-Virus Software is being used by all the libraries except KPGI library which is using Net protector anti-Virus Software.

Digitization of the library collection is not yet started in MVPS libraries as no library is using digital library software. CD Net Management Software is not at all being used by any library.

(c) **Other Technologies**

<table>
<thead>
<tr>
<th>Items</th>
<th>KTHM</th>
<th>ACSD</th>
<th>ACV</th>
<th>ACST</th>
<th>ACSN</th>
<th>GMDS</th>
<th>KK W</th>
<th>KGDM</th>
<th>ASCO</th>
<th>ACS</th>
<th>KPGI</th>
<th>KSKW</th>
<th>VKTD</th>
<th>NMSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcode Technology</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>RFID Technology</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Smart Card Technology</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Video Conferencing Technology</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>
Apart from the above technologies, following technologies find useful for providing better service to the users. Below table shows use of these technologies by the college libraries.

The above table shows that at MVPS libraries are still lagging behind in the use of above technologies. The table clearly reflects that only KTHM, ACSD, ACST, GMD S and KKW libraries are using barcoding technologies for circulating library materials to its users. Since the technologies like RFID Technology, Smart Card Technology and Video Conferencing Technology need advanced infrastructure and skilled personnel for using these technologies and even the cost involved in implementing these technologies is relatively high, no libraries are using these technologies.

(d) Networking of Libraries

Networking helps libraries to share the information resources and to exchange data for common use.

<table>
<thead>
<tr>
<th>Table 4. Status of Networking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LAN of Library</strong></td>
</tr>
<tr>
<td>Part of Campus LAN/Librar yLAN</td>
</tr>
</tbody>
</table>

It is clear from the above table that all College Libraries have LAN facilities, except ACS library which don’t have either Library LAN or Campus LAN. On the other hand only six libraries have their Library LAN connected to the Campus LAN. Other libraries have separate library LAN.

2. Status of Library Automation

<table>
<thead>
<tr>
<th>Table 5. Status of Library Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Feature</strong></td>
</tr>
<tr>
<td>Status of Automation</td>
</tr>
<tr>
<td>Partially</td>
</tr>
<tr>
<td>Not Initiated</td>
</tr>
</tbody>
</table>

All the libraries of MVPS, Nashik have realised the importance of library automation and started automating the library activities. But still only 35% libraries have fully automated their services. Rests of the libraries have partially automated the services.
3. Areas of Library Automation

<table>
<thead>
<tr>
<th>Areas of Automation</th>
<th>KTHM</th>
<th>ACSN</th>
<th>ACV</th>
<th>ACST</th>
<th>ASCN</th>
<th>GMD</th>
<th>KK</th>
<th>KGDM</th>
<th>ASCO</th>
<th>ACS</th>
<th>KP</th>
<th>KS</th>
<th>VK</th>
<th>NMSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book Acquisition</td>
<td>√</td>
<td>—</td>
<td>—</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>Cataloguing</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>Circulation</td>
<td>√</td>
<td>—</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>—</td>
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<td>—</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Serial Control</td>
<td>√</td>
<td>—</td>
<td>—</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>—</td>
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<td>—</td>
<td>√</td>
<td>√</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Stock verification</td>
<td>√</td>
<td>√</td>
<td>—</td>
<td>√</td>
<td>√</td>
<td>—</td>
<td>—</td>
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<td>√</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Budgeting</td>
<td>√</td>
<td>√</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>—</td>
<td>√</td>
<td>—</td>
<td>—</td>
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<tr>
<td>I Card Generation</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
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<td>√</td>
<td>√</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
</tbody>
</table>

It is clear that through all the libraries have used library management software for the automation of library operations, but either the softwares are not adequate to support all the activities in a College Library or libraries don’t have the infrastructure to use all the modules of the software. About 78% libraries are using the software for acquisition of books while 92% are generating identity cards with the help of library management software. Since all the libraries have started entering all the data of their resources in the software, 100% libraries can use the software for cataloguing or providing OPAC facility.

KT HM is the only library which uses all the modules available in their library management software. Other libraries do not use some or other module. The table shows that ACS library uses very few modules as compared to other libraries.

4. Strength of ICT Literate Staff

ICT literacy is important to provide efficient and effective services to the users. Following table reflects the ICT Literate Staff of each library.

Being the biggest library of MVPS, Nashik and situated in urban area, KTHM library is having maximum number of ICT literate staff. While ACS library has minimum number of ICT literate staff. ACSN and NMSS library have 6 ICT literate staff each. As far percent age of ICT literate staff is concerned ACV, ACST and NMSS libraries have 100% ICT literate staff. While the KGDM library has poor percentage of ICT literate staff i.e. 20%.

Conclusion

M.V.P. college libraries have understood importance of ICT infrastructure and its usage. But still there is huge difference amongst these libraries as far as infrastructure and...
Table 7. ICT infrastructure available

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of College Library</th>
<th>ICT Literate Staff</th>
<th>Total ICT Lit Staff</th>
<th>Total Staff of Lib.</th>
<th>ICT Literate Staff (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Librarian</td>
<td>Assistant Librarian</td>
<td>Library Clerk</td>
<td>Library Attendant</td>
<td>Pen</td>
</tr>
<tr>
<td>1</td>
<td>KTHM</td>
<td>01</td>
<td>01</td>
<td>09</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>ACSD</td>
<td>01</td>
<td>—</td>
<td>01</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>ACV</td>
<td>01</td>
<td>—</td>
<td>—</td>
<td>01</td>
</tr>
<tr>
<td>4</td>
<td>ACST</td>
<td>01</td>
<td>—</td>
<td>—</td>
<td>01</td>
</tr>
<tr>
<td>5</td>
<td>ACSN</td>
<td>01</td>
<td>01</td>
<td>04</td>
<td>—</td>
</tr>
<tr>
<td>6</td>
<td>GMD S</td>
<td>01</td>
<td>02</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>7</td>
<td>KKW</td>
<td>01</td>
<td>01</td>
<td>03</td>
<td>—</td>
</tr>
<tr>
<td>8</td>
<td>KGDM</td>
<td>—</td>
<td>01</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>9</td>
<td>ASCO</td>
<td>01</td>
<td>01</td>
<td>—</td>
<td>02</td>
</tr>
<tr>
<td>10</td>
<td>ACS</td>
<td>01</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>11</td>
<td>KPGI</td>
<td>01</td>
<td>01</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>12</td>
<td>KSKW</td>
<td>01</td>
<td>02</td>
<td>—</td>
<td>01</td>
</tr>
<tr>
<td>13</td>
<td>VKTD</td>
<td>01</td>
<td>—</td>
<td>01</td>
<td>—</td>
</tr>
<tr>
<td>14</td>
<td>NMSS</td>
<td>—</td>
<td>02</td>
<td>04</td>
<td>—</td>
</tr>
</tbody>
</table>

ICT facilities are concerned. Libraries should have adequate hardware, software and other technologies. There are certain areas like training of staff, automation of library services and web based services etc. should be provided proper concern. So that these libraries can satisfy diverse information needs of their clientele in the days to come.

References

Application of Mobile Technology in Libraries

Anjana Dharwal

Abstract

Information technology has changed the role of library services and shape of the library from traditional library to the modern digital libraries. Digital technology has provided faster access to information and it is also challenging the libraries to re-think and remodel their services by adopting the technological changes. Today mobile phones are becoming an integral part of everyday life and are changing the way one connects and interacts with the world. In this changing scenario, mobile technology will be a great help to libraries towards strengthening their relationship and providing enhanced user oriented services to existing users. Libraries may well reach out to the remote users who were considered unlikely to connect because of absence of a medium.

Keyword


Introduction

Libraries are social institutions, connecting people with people and people with information. They are increasingly no longer just physical places. Almost library users owning a mobile phone. And increasing numbers of these being smart phone it is time for libraries to take advantage of mobile technology mobile techn ology will help both novice and experienced librarians to stay relevant in an increasingly mobile society. They need to be aware of technological changes, peer forward, and prepare for the future of library mobile interaction.

Mobile devices and services offer tremendous flexibility for those who want to take advantage of library services. With a simple 3G connection, a user lying on a beach can access e-books and multimedia content from a local library. Smart phones can access network and content can be continually streamed over a network, providing content on demand and, making it unnecessary to maintain a paper copy of the material. Google is developing of mobile first and the desktop second. Apple is in the midst of making its desktop computers behave more like its mobile devices. Aside from offering convenience mobile technology present new opportunities for libraries promote access and expand reach.

In fast-emerging and ever-growing information explosion it is very difficult to retrieve particular information without wasting time. Recent advances in field of information...
technology contribution significantly to improve the services of libraries. Now-a-days libraries are not only seen with printer documents and non-print document but also with computers and mobile the impact technologies such as CD-RO Ms, multimedia, computer networks, internet, etc. have lead to paperless society. The electronic resources are system in which information is stored electronically and made accessible through electronic systems and computer networks, these resources includes OPAC CD-Roms on line databases, e-journals, e-books, internet recourses etc. multiple access speed, richer in content, reuse timeliness, anywhere access is some of the feature of e-recourses.

Library Services that can be Provided to Patrons via Mobile Technology are

SMS notification services.

- Formal education, Distance learning and E-learning.
- Data bases Browsing
- My Library
- E-recourses mobile interfaces
- Mobile document supply
- Text references service
- Library Virtual/ Audio Tours

SMS Notification Services

Libraries may provide the alerts on latest news, events and notices via SMS and MM S to users where ever they might go. The users can get notified instantly with notice alerts such as alerts on the bringing new books to the notice of users for suggestions, intimations of arrival of indented document by users, informing availability of reserved document of collections, appraising about overdue books, outstanding fines, reminders to return library items, renew books, library circulation, subscribed journals, change in library timings, information about important events, loan request etc.

Such alert notifications can be generated automatically using integrated library management system/software. SMS messages can be sent to group of users simultaneously through many free applications, and intermediary websites/clientents.

Formal Education, Distance Learning and E-learning

Students are very versatile in using their mobile phones and various mobile applications. Academic libraries can harness the advantage to lead implementation of library services through mobile devices to support distance learning, formal education, and research activities in e-learning environment by making the information resources ubiquitous. Library services should also blend with teaching and research practice of colleges/universities, scientific community or other patrons whom they serve. Mobile device also helps for accessing e-journals and e-books freely available in the internet.

Database Browsing

Libraries provide access to a variety of its resources and databases. The users can just enter
search terms and see results that are designed specifically for mobile viewing. This service includes OPAC (online public access catalogue), integrated search, and original document search. OCLC’s World Cat Mobile application pilot allows users to search for and find books and other materials available in their local libraries through a web application they can access from a PDA or a smartphone.

My Library

My library is a personal library space where users can find information and resources of their choosing. Users can read alerts, check records, renew resources, request items, track interlibrary loans and document delivery requests, set up email notices of new books and journal articles, set up preferences for catalogue searching, etc.

E-resources with Mobile Interfaces

Some publishers are already delivering e-books (both text and audio) that are accessible via mobile phones. It offers access to a variety of database and digital resources such as e-Books Journals, Web databases, dissertations, audio books, streaming music, films, images and article databases which can be used on mobile. This collection can either be downloaded from the library websites on users own mobile device or libraries lend mobile devices with the collections already on them.

Libraries can make use of multimedia messaging service (MMS) on mobile devices to share photos, videos, and audio. Most of the e-book publishers provide 24x7 accesses to the library subscriptions from any internet terminal within the campus, as well on mobile devices, such as iPads, Android devices, and Kindle.

Mobile Document Supply

The mobile environment and technology present new opportunities for sending document requests and scanned images and monitoring the use of collections as well as the automation of administrative operations, it can support electronic fund transfer supply chain management, e-marketing, online marketing, online transaction processing, electronic data interchange, and automated inventory management systems.

Text Reference Service

If the library receives a high volume of enquiries that require brief responses, such as dictionary definitions, facts or service information then librarians can provide instant answers, and links to articles/reference in real time.

Library Virtual Audio Tours

Library virtual/audio tours. Instruction/information/orientating programmes have quite significant in bringing the non-users to libraries and also help the remotely located or users located in different geographical location. Library users, who don’t have time or inclination to attend an on-site workshop, can get access to library tours on their mobile devices.
Audio/virtual library tours can be produced fairly quickly inexpensively and could reduce the amount of staff time spent helping new users to orient themselves in the library and explaining the facilities available. It can easily be provided both as downloads from the library website and on mobile devices.

**Mobile Devices Used in Libraries**

PDAs (Personal Digital Assistant), Smart phones, Cell phones, iPods and MP3 players. Tablets the design of mobile devices and services is important to accessibility as reading becomes more inclusive of diverse communities, Libraries will need to address the ongoing accessibility challenges of the mobile world.

**Component**

- The users,
- The devices ,
- The operating system,
- The services,
- The content,
- The research tracking (how uses currently engage with information on the world wide web via their mobile devices.)

**Prerequisites for Implementing Mobile–based Library Services:**

Mobile technology is unlikely to be supply the necessary service on its own, but needs to be integrated with digital technology. The following prerequisites were identified.

- Digitized information base
- Information products designed for an e-platform
- Electronic information service delivery
- Design of electronic access systems.

**Mobile Technology versus Libraries**

Mobile technology has now come up with: “Libraries in hand” trend. Our librarians are in move to determine how these devices are affecting information access and ensures that they are commun icating with patrons and providing web content in the most appropriate and effective ways our librarians must be prepared to take this challenge and put his efforts to increase the marke t and demand for mobile access to personalized facts and information anytime, anywhere on one’s own handh eld device. Since mobile handh eld devices truly are personal devices. Search histories and physical locations can be harnessed to produce more accurate, individualized information and services. Users on the go don’t want to wait for list of web results libraries today are covering most of the technologies given by mobile industry like PDA’s blackberr y, I Pad, Cell ph one, Tablet, U MPC ’s ( Ultra Mobile PC) and mobilizing library contents in a portable from suitable for small screen and delivering short services in the form of contents / information worth device’s multiple searching features.
Librarians will need to become proficient in using these devices to enable users to access them anywhere from any place.

Advantages of Implementation of Mobile Technology in Libraries

1. **User Friendly Aid**: Familiarity with their own devices and technology helps the users in accessing information quickly and does not require orientation and training. Mobile users are using the facilities on mobile phones like SMS, instant messaging, web browsing, e-mail effortlessly to communicate. Most of these features are pre-installed on mobile devices or option for data plan packages.

2. **Personalized Services**: Personalized service helps users to interact with library staff to seek specific information or reference away from library.

3. **Ability to Access Information**: Information Access from anywhere at any time will be of great help for users who cannot visit library in person and provides a constant link to required information resources.

4. **Time Saving**: Users need not record information about resources while browsing and searching library resources or wait at library transaction counter to renew/reserve books and hence the time of the user is saved.

5. **User Participation**: Libraries can enrich OPAC by allowing users to incorporate user created content like notes or images uploaded by users.

6. **Location Awareness**: Mobile Communication enables libraries to offer location-based services/content through global positioning system (GPS) capabilities libraries can guide the users to the locations of specific document or service through map and navigational tools.

7. **Limited Access**: Online resources accessible on their desktop also become accessible through mobiles.

8. **Access to Print Disabled Users**: Mobile Communication help providing services orally to vision-disabled and physically handicapped users.

Limitation or Barrier of Mobile Technology

All though mobile technology holds great promise for library services, there are some limitation or barrier in providing library services such as:

- Compared to wired internet service, has relatively slow transmission speed
- Limited computational power
- Inconvenient input and output interface
- Insufficient content
- High price
- Content ownership and licensing
- Usually expensive and resources intensive
- Limited memory of mobile devices
- Digital rights management
- Access to information in the digital age.
Conclusion

There is a growing influence of mobile technology in libraries, especially as network access becomes more affordable and reliable, and mobile applications have seen mainstream acceptance in teaching, learning, and research. This trend will likely continue and one way libraries can respond to this emerging trend is to make the library’s website easily accessible via web-enables mobile devices if libraries provide mobile services then library users are happy and quickly access the available reading material in the library and they also know all library services provided because all library users can not know daily library services and facilities and library timing etc. “by going mobile, a library takes a giant step toward becoming a round-the-clock services”.

Reference

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Leaders in Digital Age and Transformation of Libraries

Arun Dhari Kausik; Hema Haldua & Chan da Arya

Introduction

Leaders are excited about the possibility of creating an exciting future for themselves. They see every effort they make as part of a great plan to accomplish something wonderful with their lives. They see opportunities in everything that happens, positive or negative. They look for the good in every situation and in every person. They seek the valuable lessons contained in every problem or setback. They never experience “failures” instead, they write them off as “learning experiences.” They have clear, written goals and plans they work on every day. Leaders are clear about where they are going and what they will have to do to get there. Their behaviour is purposeful and goal-directed. As a result, they accomplish five and ten times as much as the average person who operates from day to day with little concern about the future. Leaders never complain, never explain. Instead of making excuses, they make progress. Whenever they have a set-back or difficulty, they repeat to themselves, “I am responsible! I am responsible! I am responsible!” They don’t criticize or blame others when something goes wrong. Instead, they focus on the solution. They are constantly in motion. They try something, and then something else, and then something else again. They never give up. They tell the truth at all times. They live in truth with themselves, and they live in truth with others.

(http://www.philau.edu/infolit/definition.htm)
DIGITAL AGE AND TRANSFORMATION OF LIBRARIES

Scientific transformation

Science emerged as a distinct mode of inquiry in the sixteenth and seventeenth centuries to understand during a period known as the Scientific Revolution. Exponential growth also became evident in the 19th century, so the question whether there was one scientific revolution or many, or evolution, is open. Clearly, science has been developing in ways that has transformed the way we see the world. (http://www.answers.com/topic/scientific-revolution)

Digital transformation

The digital revolution refers to the advancement of technology from analog electronic and mechanical devices to the digital technology available today. The era started in 1980s and is ongoing sometimes also called the Third Industrial Revolution. This revolution also marks the beginning of the Information era. http://www.techopedia.com

Open access transformation

OAAs are electronic repositories that may include already published articles (post-prints), pre-published articles (pre-prints), theses, manuals, teaching materials or other documents that authors or their institutions wish to make publicly available without financial or other access barriers.

- DSpace: http://dspace.org/
- The Digital Object Identifier (DOI): http://www.doi.org/
- Eprints: http://www.eprints.org/
- Fedora: http://www.fedora.info/
- GNU EPrints: http://software.eprints.org/
- Open Journal Systems: http://www.pkp.ubc.ca/ojs/

Open research

Born on the back of the digital revolution, the open access (OA) movement continues to transform the global research communication and dissemination system. Since the pioneering years of OA in the early nineties, OA literature has come to occupy an increasing share of scholarly research dissemination across diverse publishers, geographical regions and scientific disciplines. The OA movement threatens to disrupt the dominant subscription-based model of scholarly publishing, shifting it from a demand-side, ‘reader pays’ system to a supply-side, ‘author or pays’ system and, in turn, transforming everything from publications processes to business models.

Open aggregation

Data aggregation is the process of transforming scattered data from numerous sources into...
a single new one. The objective of data aggregation can be to combine sources together as such that the output is smaller than the input. This helps processing massive amounts of data in batch jobs and in real-time applications. This reduces the network traffic and increases the performance while in progress.

Open storage

OST stands for Open Storage Technology and at a high level it is an API that allows NetBackup Media servers to take advantage of intelligent disk devices as well as cloud storage solutions. Storage vendors that participate in Symantec's STEP (Symantec Technology Enabled Program) are given access to the OST Software Developers Kit allowing them to create plug-ins that more tightly integrate their devices with NetBackup. The OST plug-ins are provided either directly from Symantec or from the storage manufacturer and installed on NetBackup Media Servers. The vision for OST was announced in 2006 and made available in NetBackup 6.5. Most recently, Symantec included OST functionality in Backup Exec 2010, calling the capability simply Symantec OST. Although both features are called OST, there are separate Hardware Compatibility Lists for OST support in Backup Exec and NetBackup. The OST API is protocol independent, meaning the hardware providers can utilize OST over whatever protocols are best suited for their devices, including Fibre Channel, TCP/IP, or SCSI. The OST API provides 4 key features but the hardware vendors are not required to support all of them but rather just select the ones most suited for their devices.

Open Content

(www.google.co.in/)

Information as commodity

Libraries and other non-profit organizations have only recently become aware of the need to market their products and services. Library and information products and services are now being recognized as commodities that can be sold, exchanged, lent, and transmitted. University libraries rely on their host organizations for operational costs. To gain some self-sufficiency, university libraries think seriously about not only recovering the costs incurred but also making a profit through their services. Narayana (1991:187) points out that the
“survival of a library depends among other things on its image in the minds of the users and the fund allocators”. This image should be the outcome of the quality and effectiveness of the services, the ability to anticipate the desires and requirements of actual and potential users and their fulfillment. Marketing is the instrument through which these library objectives can be fulfilled. Vishwa Mohan, Srinivas, and Shakuntala (1996:16) observe that marketing is essential, because those who lack information may not even be aware of this need. Information marketing by university libraries in India is essential in order to:

- Promotion of the use of information resources
- Create perception of need and thereby create demand;
- Ensure the optimum use of information;
- Improve the image and status of the libraries and library professionals;
- Tackle the problems of rising costs of reading materials, journals, and databases;
- Cope with the information explosion;
- Introduce cutting-edge information technology systems in library services;
- Balance shrinking funds;
- Save libraries from devaluation;
- Save libraries from declining reader-support;
- Uphold the dictum that information is power.

HOW LIBRARY SHOULD DEAL WITH THESE CHANGES?

It needs a

New agenda • Infrastructure • Technological expertise • Bold leadership • Library Education • Greater collaboration • Work with scientists and engineers • Digital environment more pervasive New models of knowledge organization • New collaborations across academic boundaries • New international cooperation for data preservation and access • New research methods and strategies; • New curriculum for library education.

Libraries must adopt a cyber infrastructure model with deep functional collaborations:

- Shared collections: discarding duplicates; • Shared staff: working toward the collective goal; • IT infrastructure shared across several institutions; • Single software platform; • Libraries must have cyber infrastructure characteristics • Wide community of interest and collaboration • Multidisciplinary • High level of shared expertise • Tremendous amounts of data • Responsibility for data curation & persistence • Integral research and its strategies • Involved with data analysis, visualization, mining, semantic search.

Libraries need a shift from

- Emphasizing the value of collections to emphasizing the value of expertise; • Supp toing information description and access to taking responsibility for greater information analysis; • Serving as a suppot agency to serving as a collaboration; and • A facility-based enterprise to a campus-wide enterprise.
Digital Library

The digital library is not merely equivalent to a digitized collection with information management tools. It is also a series of activities that brings together collections, services and people in support of the full life cycle of creation, dissemination, use and presentation of date, information and knowledge. Digital Library is a combined technology and information resources to allow remote access, breaking down the physical barrier between resources.

According to the Librarian Digital Library is a “Collection of digital object (text, video, audio) along with method for access and retrieval, as far as users are concerned and also for selection, organization, and maintenance”.

According to Wiederhold “A digital library is popularly viewed as an electronic version of a library where storage is in digital for m, allowing direct communication to obtain material and copying it from a master version”.

Winensky viewed that “the digital library will be a collection of distributed information services, producers will make it available, and consumers will find it through the automated agents”.

User expectations from digital libraries

Evidence from past studies suggests that typical expectations of the users from digital library are as follows:

- Comprehensive – include everything;
- Everything immediately available;
- Speed of response to get information;
- Seamless information;
- Ease of use – single interface;
- Multiple formats – text, images, sound.

According to Fast and Campbell (2004, p. 139) web searching is shaping user expectations of what an information retrieval system looks like, how it behaves, and how to interact with it.... Digital libraries are now being used by people who have extensive experience on systems that require almost no training, and which produce immediate, if not completely satisfying, results. Library users who want fast, easy access to unlimited, full-text content using interfaces that require no critical thought or evaluation. More specifically, the influence is that of the major search engines, most notably Google. Grifths and Brophy (2005, p. 550), from a basis of detailed analyses of students’ searching behaviour, conclude that: Student’s use of SEs (Search Engines) now influence their perception and expectation of other electronic resources.

Digital competencies of library professionals

The ready availability of information on the Internet, and its widespread use, really presents Librarians with an opportunity, not a threat. Technology Savvy users realize they need help, which Librarians can provide. Librarians now face difficulties and complicity challenges due to new trends in information access.

In the present technological/Internet era the professionals have to change themselves
as the information profession is being changed. Now information specialists have to work as e-information resources in which various professional groups are expected to map strategies that lead to produce, manage, maintain and service the information. Information professional has to work as:

Skills and knowledge

The basic goal of library and information profession has always been to provide access to information to those who need it. The activities realizing this goal have evolved and transformed over the years. This includes—available technology, and need of an evolving information society. Information activities have been guided by the developments in the field of storage, presentation and archiving of knowledge, collection development and organization of knowledge, information explosion and computers in information retrieval. Librarian and information professional involved in information gathering, storage, retrieval and dissemination on one hand and on the other hand the computer specialists who support the library and information professionals in this endeavour. For successful implementation of Digital Library, it is essential that LIS professionals are well trained and possess requisite knowledge and skills in this respect.
The 21st Century Librarian will... • Believe in themselves and what they can offer • Not take their existence for granted • Develop themselves • Learn from each other • Seize the opportunities • Lift up their heads • Get out more and engage • Be confident and claim the future.

They will implement a virtual environment based on...

Discovery: Develop customized library views; Move from component-based, discipline-focused services to personalized views of resources.

• Design: “Personal Information Management” tools within shared storage environment (e.g., tagging, collaboration options)
• Partner with colleges in creating Web-based, campus services for digital images and video.
• Pilot collaboration environments for sharing annotating, managing content within a community. Establish Library 2.0 (L2) implies a paradigm where libraries are more supportive of change. Support Globalization Goals of their Institution International collections
• International students/researchers
• Faculty research collaboration
• Challenges of language
• Challenges of standards
• Challenges of law & culture

They will prepare for accountability & assessment to measure...

• User satisfaction • Market penetration • Success & impact • Cost effectiveness • System design for usability

They will establish an R & D agenda...

Laboratory for experimentation • Magnet for new skills • Potential for capitalization/tech. transfer • Support for decision making • Organizational risk taking • Federal, found ation, & corporate

They will move forward the repository movement...

Discipline Repositories • Institutional Repositories • Consortium Repositories • Departmental/School Repositories • Individual Repositories • National Repositories

They will mine the full potential of digital information...

For • Research ability • Dynamism/Fluidity • Spatial • Encyclopedic • Collaboration • Multimedia • Link ability • Interactive • Procedural • Interdisciplinary accessibility
• Availability • Immediate • Search ability • Currency

They will promote collaboration & partnerships...

Library Systems • Local & Regional Cooperation • State Projects • Multi-State Projects • National Consortia/Projects • International Partnerships Researcher Collaboration • Publisher Collaboration • Collaboration with Technology Organizations • Corporate Partnerships • Business Partnerships
Next generation library...

The primary definition of the “library” will certainly change, but it will remain the intellectual hub of its community. The next generation will define the “library” as content and services available on the Internet or its incarnation!

Decades of collection development

1960 s–1970 s: Modernization - automation, computer-based operations library housekeeping, bibliographic utilities, COM catalogues, retrospective conversion, microform masters, self-renewing/no-growth library

1980 s–early 1990 s: Invention: experimentation, computer-based services library management, Conspicuous methodology, OPACs, access versus holdings/ownership, end-user searching, just-in-time information late

1980 s–1990 s: Transition: digitization, computer-based content integrated systems, licensing consortia, full-text databases, multimedia products, resource discovery, virtual/digital/hybrid library

2000 s–: Transformation: collaboration, network-based collections ERM systems, federated search, open access, institutional repositories, digital asset management, and data curation

The collection development division is responsible for the assessment, evaluation, conservation and selection of materials in all formats in support of the teaching and research needs of their user community, as well as the development of preservation and curation of their special collections and digital collections.

Network-based collections transformed libraries

Since the start of the new millennium, a trend towards network-based collections has marked an era of transformation in libraries. Large quantities of electronic content have led to the development of electronic resource management systems (ERMS), streamlining processes relating to these resources and facilitating dynamic updating of digital resource lists. In academic libraries, the increasing use of learning management systems (also known as course management systems, instructional management systems and virtual learning environments) has provided opportunities for libraries to facilitate access to course materials and to deliver focused information literacy support (Black, 2008), although these systems have also created new challenges for librarians, with content largely controlled by faculty members, leading to the creation of local collections of resources — often including copyrighted materials — which librarians may lack the necessary permissions to access and manage (Corrall & Keates, 2011; MacColl, 2001). The “open access” movement has also grown during this time, catalyzed by continuing increases in the cost of electronic content. Suber (2003, p. 92) identifies two key features of open access material: “First, it is free of charge to everyone. Second, the copyright holder has consented in advance to unrestricted reading, downloading, copying, sharing, storing, printing, searching, linking, and crawling.”

The processes of Collection Development include selection and deselection of current and retrospective materials, including gifts-in-kind; planning of coherent strategies for continuing acquisitions; input into preservation decisions; evaluation of collections to ascertain how well they serve user needs. The information explosion coupled with tight ening
bud gets requires selectors to look at ways to access resources in ways beyond physical ownership, including licensing electronic databases and providing document delivery.

The libraries will include the Department of Access Services, the Department of Research and Learning Services, which includes the Maps and Media unit, Interlibrary Services and Stacks Management. The libraries will offer a range of services to help user community and visiting researchers in their research, teaching and learning. The libraries also contribute to public-domain books for digitization to Google so that the digitized books will be made available online through various projects.

**Computing Centre** which will be the main computing facility area for the users of the libraries. The hardware of this centre consists of computers, including PCs, iMacs and several specialized workstations. The centre will provide computing services to the educational communities. The centre also houses duplexing black & white Net-print printers, duplexing B & W printer, duplexing colour printer, colour plotters and scanners. Software available in the Computing Centre includes a wide variety of applications used by users. The centre has to provide an online service called DropBox where the users can use and save documents up to 1.5 GB. The centre can publish the following manuals for the benefit of the users: (i) Using the Assistive Technology Station to Scan and Print, (ii) Scanning slides, negatives and for OCR, (iii) Using of EPSO N Scanners, (iv) Scanning colour and black/white documents.

**Reference service**

The Reference Service units work most closely with the library patrons. These services include walk-up and in-depth research assistance. They provide instruction services for faculty, staff and students, including course-specific library research assistance. The libraries have to offer free service for research scholars, faculty and students. Users can borrow items *i.e.* books, articles, media, microfiche, etc., from other institutions when none of their own libraries own these items required for the research. Library users can track their ILL requests using the ILL web site available online. The ILLiad system is found to be very useful software working successfully.

**Disability Services Unit** of the libraries offers services for their users with disabilities. There is a need of equal access and universal design of libraries (UDL) *i.e.* rather than designing our library facility and services for the average user, we should design them for people with broad range of abilities, disabilities, and other characteristics such as learning disabilities, visual, speech, hearing and mobility impairments. There should be accurate planning, policies and evaluation of UDL, facility and environmental, computing, software and assisted technologies available in this context. The unit is responsible for providing services and accommodations to meet the individual needs of students with documented disabilities. The mission of the Student Services Disability Services is: (a) to assist students with disabilities with access issues in order to participate fully in all educational programmes and campus services; (b) to promote university awareness of the needs and capabilities of students with disabilities; (c) to serve as a resource for members of the university community, prospective students, parents, and members of the public.

The unit provides academic and/or environmental accommodations and services for students with disabilities. The Americans with Disabilities Act (ADA) defines a disability as a physical or mental impairment that substantially limits one or more major life activities.
Some of the conditions covered by the ADA are: (i) Attention Deficit/Hyperactivity Disorder; (ii) Learning disabilities; (iii) Neurological disorders such as traumatic brain injury; (iv) Chronic medical conditions; (v) Mobility disabilities; (vi) Psychiatric disabilities; (vii) Sensory disabilities (hearing/vision).

Citation Management

There are free and open-source reference management software available in the market to manage bibliographic data and related research materials (such as PDF files). Notable features include web browser integration, online syncing, generation of in-text citations, footnotes and bibliographies, as well as integration with the word processors Microsoft Word, LibreOffice, OpenOffice.org Writer and Neo Office. Software collects all our research in a single, searchable interface. We can add PDFs, images, audio and video files, snapshots of web pages, and really anything else.

It is understood that these software has no dedicated customer support service, but on the websites itself they provide extensive information, including instructional screen casts, troubleshooting tips, a list of known issues, and user forums. Questions and issues raised in the forums are answered quickly, with users and developers suggesting solutions.

Research Data Management

Data management is the process of overseeing data that’s being generated during a research project. Any research will require some level of data management, and funding agencies are increasingly requiring scientists and scholars to plan and execute good data management practices.

Publishing and Curation Services, working with liaison librarians in Reference, Collections, and Research, offer consultation services in data management planning to members of the Penn State community applying for grant funding from agencies requiring a data management plan (DM P). Publishing and Curation Services helps researchers to create new publications, to distribute their papers, presentations, publications, data sets or other creations to a worldwide audience, and to comply with policies that require and encourage public access.

Create your data

There are lots of decisions to make before you start to create your data. Making these choices early on in your project can save you time and effort later, and many funders now expect you to show you’ve engaged in data planning. The decisions will affect how you can access, use and look after your data.

- Bidding for funding
- Data planning
- Choosing file formats and software
- Intellectual property rights
- Data protection and ethics
- Freedom of information
Organize your data

You probably create lots of data and this can quickly become disorganized. It’s useful to decide how you and your colleagues will name files and organize data to make sure you can all find and use it. By adding contextual information or ‘documentation’ you can make sure your data can be understood. Do by doing as follows:
- Naming files
- Organizing files and email
- Documentation

Access your data

Few researchers work from a single location, so you probably need remote access to your data. The kind of storage you use will affect how easy and secure it is to work remotely. You may also want to give others access to data, or explore options for:
- Data sharing
- Remote access
- Storage
- Security

Look after your data

Keep your data safe, both now and for the future by doing the following jobs:
- Back-up
- Selection
- Data sharing Preservation

Digital Scholarship & Preservation Services

Digital Scholarship Services’ goals are:
- Provide research and information support through specialized staff and services, thus helping the University raise its research and scholarship profile.
- Bring to the University community access to the resources needed to further its scholarly activity.
- Actively foster collaborative relationships with other organizations in order to broaden the range of resources we can bring to the University community.
- Provide leadership for the University.
- Embark on a diligent and sustained research initiative that will identify both needs and possibilities for the library of the future.
- Energetically promote information fluency and participate in the integration of information resources with pedagogy.
- Create and creatively use inviting community spaces, both physical and virtual, that will represent the library to the University community, to Houston, and to the international community.
- Heighten awareness of and strengthen support for special collections.
Digital preservation covers a wide range of activities, from storage to transformation, depending on the nature of the resources and the source, and the range of preservation services could be equally wide. Since such services are not yet widely practiced or available, a useful starting point is to consider what is known about the target content in IRs.

Digital Production Services (DPS) is responsible for digitization of materials in support of scholarship, research, and teaching, as well as metadata production and consulting services for Library and academic units undertaking digital projects. The various tasks performed by Digital Production Services are tracked by an in-house project management system. From the creation of a digital surrogate entry to the publication of its METS record, the system also records user permissions, equipment and software registration, and provides links directly into the Brown Digital Repository (BDR). Security is integrated with a campus-wide authentication system.

Digital Publishing

Its mission is to advance scholarly communication in different fields and it is designed to address the unique needs of low-cost independent and society journals. Through a collaborative partnership arrangement, these publishers join forces and participate in an online presence with advanced functionality, without sacrificing their intellectual or economic independence or commitment to low subscription prices. Full-text searching, reference linking, interoperability through the Open Archives Initiative, and long-term retention of data are all important components of the project.

Academic Technologies Centre

The Academic Technologies Centre allows faculty, instructors, and graduates to use the state-of-the-art computer systems, software, and other multimedia equipment available at the Academic Technologies Centers. The facilities may be used to prepare course materials or to develop instructional technology resources for a course. Support services provided by the student assistants include: (i) Blackboard support; (ii) Assistance with preparing multimedia course content for classroom or web-based delivery; (iii) Assistance with classroom presentations (including PP Ts); (iv) Audio and Video services; (v) Podcasting support; (vi) Updating course web sites; (vii) Assistance with online surveys; (viii) Assistance with collaborative tools including blogs and wikis; and (ix) Scanning and digitizing.

The following equipment is necessary in the ATC viz., (i) Scanners for pictures, documents, and 35 mm slides; (ii) Digital cameras (both still and video); (iii) Audio & Video editing equipment; (iv) Computer workstations to convert from VHS & S-VHS videotape to digital movies and from audio tapes to digital audio files; (v) Macintosh and Windows workstations to edit digital video and prepare streaming media for the web.

The following software is also required for use viz., (i) Image editing software: Adobe Photoshop; (ii) Digital video editing & compression software: Adobe Premiere, Final Cut Pro, iMovie and Sorenson Squeeze; (iii) Microsoft Office Suite; (iv) Web authoring Software: Adobe Dreamweaver; (v) Adobe Acrobat: Software for creating, enhancing and editing PDF files; (vi) Adobe Flash; (vii) Many other multimedia applications and authoring tools.

The Library Annex is a state-of-the-art high-density facility with a climate controlled environment of 50-55 F and 30-35 % relative humidity. The Annex consists of five modules.
It is a clean and secure home for library materials in various formats. Access to materials is provided by electronic and physical document delivery with a 24-hour turn-around time or by the use of an on-site reading room equipped with wireless access, computers, printer, copiers, and microform readers. The Library Annex also carries significant responsibilities for housing and preserving the Rare and Manuscript Collections print heritage materials. The Library Annex is committed to provide adequate protection and security for this historic material. It can also provide free electronic document delivery to faculty, students and staff. Instructions for requesting a book can be found on the requests page.

Conclusion

In order to improve the accessibility of information and knowledge management research and education we have to follow:

- Further digitization of our library operations and resources using latest technology duly following copyright rules.
- Strengthening of existing online resource sharing mechanism amongst the libraries using more effective and efficient ICT.
- Improving the library and information services offered by libraries so as to meet the increasing requirements of students, research scholars, faculty, scientists and policy makers using modern ICT.
- Introduction of more effective and efficient library and information services using Web 2.0 and Lib 2.0 tools.
- Ensuring networked digital environment in all the libraries which are connected to empower the stakeholders so that can have seamless access to the digital knowledge resources.
- Strengthening of the libraries on par with International standards to cater to the increasing knowledge requirements of the stakeholders which will enhance the quality of research and education in India.
- Strengthening of at least few libraries in each state on par with international libraries to ensure effective and efficient research and extension activities.
- Extension of library digitization and online Union Catalog developed in collaboration with the standards followed by the ‘WorldCat’.
- Effective use of modern Information and Communication Technology in the library wherever possible.
- Design and development of efficiently managed interactive library services to meet the stakeholders’ needs by adopting modern Information and Communication Technology.
- Further strengthening of institutional repository with more digital contents to ensure seamless access to the online resources by the students, research scholars, faculty, scientists and policy makers in education and research.

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Wastawy.pdf RFID for Library Management
RFID for Library Management

Ashish Kumar Sharma

Abstract
The ICT has changed the way Library Professional to Interact, Communicate, Share and acquire knowledge. However, when the computer was invented not have much more features and facilities for users to interact. With the evaluation of Internet and Communication Technology, manual library has evolved into a dynamic, interactive and collaborative platform that facilitates exchange of knowledge and information among its users. RFID is an acronym that stands for the Radio Frequency Identification. RFID is a new generation of Auto Identification and data collection technology which facilitate to automate library processes and allow identification of large numbers of tagged books, using radio waves. RFID uses wireless radio communication for unique identification of people or assets. In present scenario effort has been made to reduce manpower and time by application of technologies. This paper presents the overview of RFID, its Definition, Components, Benefits and Limitations.

Keywords
Library Technology, Component, Benefits, Vendors in India.

Introduction
The new age of technology, modes of delivery, types of resources and shift in users preferences have challenged library professionals to adopt new skills and technologies going beyond the conventional approach to reach out to users independent of location and time. At the same time, these challenges also transform themselves into opportunities that broaden the need for redesigning and restructuring the current systems to serve readers more effectively.

The rapid developments in Information Communication Technologies (ICT) have given a solid foundation for revolution changes in the information handling capabilities of libraries and information centers all over the world. ICT includes acquisition, processing, storage, retrieval and dissemination of information by means of computers and communicating systems. In a dynamic and interactive academic learning environment, Information Communication Technology also includes reproductive-micrographic technology, database creation and use, in addition to computer technology, digital technology, multimedia technology, network technology, bar code technology, RFID technology, web technology, etc. Library automation as we see today is a computerization of library activities and application of information technology in libraries. RFID has many library applications that can be highly
beneficial, particularly for circulation staff. Since RFID tags can be read through an item, there is no need to open a book cover or DVD case to scan an item. This could reduce repetitive-motion injuries. Where the books have a barcode on the outside, there is still the advantage that borrowers can scan an entire pile of books in one go, instead of one at a time. Since RFID tags can also be read while an item is in motion, using RFID readers to check-in returned items while on a conveyor belt reduces staff time. But, as with barcode, this can all be done by the borrowers themselves, meaning they might never again need the assistance of staff.

What is RFID?

RFID is a generic term for technologies that uses radio waves to automatic identify an object. There are several methods of identification, but most common is a unique identification number that identifies an object, and perhaps other information, on a microchip that is attached to an antenna. The antenna enables the chip to transmit the identification information to a reader. The reader converts the radio waves reflected back from the RFID tag into digital information that can be passed to computers to make use of it.

According to the Harrod’s Librarian’s Glossary and Reference Book, RFID is an alternative to bar code that uses tiny microchips in tags to hold and transmit detailed data about the item tagged

Dictionary for Library & Information Science defines RFID as the use of microchips to tag library materials and library card, enabling users to check out items by walking through a self-service station equipped with an antenna that emits low frequency radio waves.

RFID Application in Libraries

- RFID (Radio Frequency Identification) is the latest technology to be used in library theft detection systems. Unlike EM (Electro – Mechanical) and RF (Radio Frequency) systems, which have been used in libraries for decades, RFID based system move beyond security to become tracking system that combine security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, invent or ying, and materials handling.
- RFID is a combination of radio frequency based technology and microchip technology. The information contained on microchip in the tags affixed to library materials is read using radio frequency technology regardless of item orientation or alignment (e.g., the technology does not require line of sight or a fixed plane to read tags as do traditional theft detection systems) and distance from the item is not a critical factor except in the case of extra-wide exit gates. The corridors at the building exit (S) can be as wide as four feet because the tags can be read at a distance up to two feet by each of two parallel exit sensors.
- The targets used in RFID systems can replace both EM or RF theft detection targets and barcodes.
- Multiple books can be issued simultaneously.
- Unique ID of the RFID tag prevents count erfeiting.
- Automated material handling using conveyor & sorting systems.
• Multiple books can be issued simultaneously.
• Automated material handling using conveyor & sorting systems.

Components of RFID Systems
A comprehensive RFID system has four components:

RFID Tags (or Transponder)
The chip and the antenna together are called RFID tag (or transponder). These are paper-thin smart labels which are electronically programmed with unique information. Tags are the electronic chips consisting of an integrated circuit and antenna coil that communicate with a reader by means of a radio frequency signal. These tags are available as labels with adhesive backings and ability to roll through a label printer. After sticking RFID label on the book, its vital bibliographical data, including Accession Number is registered in the chip of the label. This function allows writing such information on chip either from the library database or by scanning existing barcode labels and helps to indentify each book. Two types RFID tags are available viz. Active or Passive. Passive tags do not have there on power supply so the device is quite small. These have practical read ranges that vary from about 10 mm up to about 5 meters. Active RFID tags, on the other hand, must have a power source and may have longer ranges and larger memories than passive tags as well as ability to store additional information sent by the transceiver. Active RFID tags can be about the size of a coin and have practical ranges of tens of meters, and a battery life up to several years. Many libraries are making use of passive tags because of their lower cost and appropriate size. The tags can be read at a distance of up to two feet by each of two parallel exit sensors. The devices used for circulation are usually called “readers” while the ones used at building exits are usually called “sensors”.

RFID Readers
RFID readers or receivers are composed of radio frequency module, a control unit and an antenna to interrogate electronic tags via radio frequency (RF) communication. A system includes several different kinds of readers, also known as sensors when installed at library exits. These are radio frequency devices designed to detect and read tags to obtain the information stored thereon. The reader powers an antenna to generate an RF field. When a tag passes through the field, the information stored on the chip in the tag is decoded by reader and sent to the server which, in turn, communicates with the automated library systems when the RFID system is interfaced with it. In a typical library application, RFID readers can be installed at various strategic places to support different functions that RFID tags can perform.

Some of typical installations could be:
• Workstation designed specifically for library staff to facilitate the smooth handling of books and other material having RFID labels/tags.
• The security gets with Theft Detection System. Any item that has not been checked-out either by staff station or self check-out station, will be detected as it goes past
these pedestals.
• Self service station with provision for checking out books independently by borrower with out any intervention of library staff. The theft detection system of the smart label for the book is deactivated to enable smooth passage from the security gate.
• “Drop Box” where returned books are placed th rough suitable slits by users themselves. As books are return through the Book Drop facilities located suitably in a library, the smart label are aut omatically read, and both user record and library database gets up dated.

Antenna

The antenna produces radio frequency waves to transmit signal that activate the transponder. Antenna is the channel between the tag and the reader, which controls the system’s data acquisition and communi cation. The electromagnetic field produced by an antenn a can be constantly present when multiple tags are expected continually. Antenn as can be built into a doorframe to receive tag data from person’s things passing through the door.

Server/Docking station

The server is the hear t of some comprehensive RFID systems. It is the commun ications gateway among the various components. It receives the information from one or more of the readers and exchanges information with the circulation database. Its software includes the APIs (Applications Programming Interface) necessar y to interface it with the automated library system.

Benefits of RFID system

Benefits of RFID techn ology in library are categorised as follows.5

Benefits to Library Management

• Uncompromised security within the library
• Efficient collection management system (can be located suitably and made 24x7)
• Uncompromised collection security
• Flexible staff schedules
• Lab ur saving meth ods free the staff to help customers
• Higher customer/patron satisfaction levels
• Improved inter-library coopera tion
• Better preservation of invent or y because of less handling by staff
• Same security and labeling formats for all items such as books, CDs and DVDs, hence better management of databases

Benefits for library staff

• Time saving devices free them to help customer better
• Lab ur saving devices free them from doing repetitive, physically stressful tasks
• Can have flexible working schedules

Benefits for library patrons

• Self check-in and self check-out facilities
• Check-in and check-out of all types of items (books, audio tapes, video tapes, CDs, DVDs, etc.) at the same locations
• More staff available for assistance
• Quicker service such as payment of fees, fines, etc.
• Better inter-library facilities, more efficient reservation facilities, etc.
• Faster and accurate re-shelving means patrons can find items where they should be, hence quicker and more satisfying service
• Height adjustable self check-in/out tables are liked by children and physically disabled persons who use the library

RFID Vendors in India

There are many vendors of RFID components all over the world and nowadays India is also producing RFID components. A list of some of the RFID vendors with presence in India and Indian sub-continent is given below:

• 3 M Library Systems, New Delhi
• R.S. Barcodes, New Delhi
• Total IT Solutions, New Delhi
• TS Informatics, Delhi
• LibSys Corporation, Gurgaon
• Netlink Information Systems, Gurgaon
• IDCUBE Identification Systems, Noida
• HCL Infosys, Noida
• VTLS Software, Noida
• Bartronics India, Hyderabad
• Capgemini India, Chennai
• Grandeur Technologies, Chennai
• Green Futurz Software Solutions, Chennai
• Modular Technologies India, Chennai
• Rapid Radio Solution, Ahmadabad
• RFID InfoTech., Mumbai
• I-Tek, Pune

LIMITATION OF RFID SYSTEMS

High cost

The major limitation of RFID technology is its cost. While the readers and sensors used to read the information are costing between Rs. 100,000/- to 150,000/- a server costing much as Rs. 500,000/- to 600,000/- and the tags cost Rs. 20 to Rs. 25 each.
Easy to deceive to the technology

It is possible to compromise an RFID system by wrapping the protective material in two to three layers of ordinary household foil to block the radio signal. It is also possible to compromise and RFID system by placing two items against one another so that one tag overlays another. This may cancel out the signals. This requires the knowledge of the technology and careful alignment.

Removal of Tags

RFID tags are typically affixed to the inside back cover and are exposed for removal. This means that there would problems when users become more familiar with the role of the tags. In Indian libraries, it is the major challenge to keep the tags intact.

Exit Sensor (Reader) Problems

While the short range readers used for circulation charge and discharge and inventory appear to read the tags 100% of the time, the performance of the exit sensors is more problematic. They must read tags at up to twice the distance of other readers. The author knows of no library that has done before and after invent or y to determine the loss rate when RFID is used for security.

Fear to Invade User Privacy

Privacy concerns associated with item-level tagging is another significant barrier to library use of RFID tags. The tags contain static information that can be relatively easily read by unauthorized tag readers. This allows for privacy issues describe as “tracking” and “hot listing”.

Tracking refers to the ability to track the movements of a book (or person carrying the book) by “correlating multiple observations of the book’s “bar code” or RFID tag. Hot listing refers to the process of building a database of books and their associated tag numbers (the hot list) and then using an unauthorized reader to determine who is checking out items in the hot list.

Reader collision

The signal from one reader interfering with the signal from another where coverage overlaps is reader collision. One way to avoid the problem is to use of technique called time division multiple access, or TDM A. In simple terms the reader are instructed to read at different times, rather than both trying to read at the same time. This ensures that they don’t interfere with each other. But it means any RFID tag in an area where two readers overlap will be read twice.

Tag collision

Another problem reader have is reading a lot of chips in the same field. Tag clash occurs
when more than one chip reflects back a signal at the same time, confusing the reader. Different vendors have developed different systems for having the tags respond to the reader one at a time. Since they can be read in milliseconds, it appears that all the tags are being read simultaneously.

Lack of standard

The tags used by library RFID vendors are not compatible even when they conform to the same standards because the current standards only seek electronic compatibility between tags and readers. The pattern of encoding information and the software that processes the information differs from vendor to vendor, therefore, a change from one vendor’s system to the other would require retagging all items or modifying the software.

Conclusion

RFID is still a relatively new technology in India. It has the capability of making our personal lives and our work in the library more convenient. RFID mostly provides self-service and vast majority of these libraries are positive about their RFID investment and their benefits. By using application of RFID in library provides benefit for staff as well as user to reduce their energy and time. A number of libraries have successfully installed the RFID solutions in India. The products of many manufacturers of library RFID systems are available in India through their business associates or direct. RFID technology has been used in a number of Indian libraries like: Anna University Chennai, Punjab University Chandigarh, University of Pune (Maharashtra), Indian Institute of Science Bangalore, IITs and IIMs etc. RFID is a technology that is sparking interest in the library community because of its applications that promise to increase efficiency, productivity and enhance user satisfaction. Its application increases productivity, and eliminates human error, improves speed of operations and services.

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Desigining a Content Management System
Using “Joomla” Software for Digital Librar y in Shivalik International School

BHU WAN CHANDRA PANDEY

Abstract
A rapid growth in information and ICT (Information Commun ication Techn ology), modern libraries need to select, collect, organize, maint ain, and serve digital docum ents and disseminate to proper way of channel modern libraries need to familiarize, lear n, and utilize new techn ology in the Librar y so, user can easily get its desired infor mation. This document discusses the designing of a content management system using Joomla software for digital libr ar y. For this purpose, Shivalik International School’s librar y was chosen for creating a digital librar y collection and commun icating with these digital collections among users to achieve its objectives with a digital environment using digital software. Joomla is a free web-based content management software which allows one to crea te and manage websites and powerful online applications. Joomla is a platform based on PHP and MySQL which was created in 2005 by a team of open source developers. It currently has 200,000 commun ity users and contribu tors. There are two parts of the system, the front-end (what the public see) and the back-end (what administrators see). The front-end is what the people see when they visit or see the website, consisting of design, logo, banner, text package etc. The back-end is the administrator area where one can control own websites and access is provided via a special login (if administrator wants) page and only for special users with administrator permission. Sa me was used and we successfully crea ted th e cont ent management system for the school.

Introduction
A Rapid Growth in information and ICT (Information Commun ication techn ology) modern Libraries need to select, collect, organize, maintain, and serve digital documents and disseminate to proper way of channel Modern libraries need to familiarize, learn, and utilize new technology in the Library so, user can easily get its desired information.

Today many web publishers use content management system (CMS) to allow them to instantly and dynamically update web pages and properties as new content become available. So that every visitor to a site is engaging informative, and meaningful. The most popular CMS Software like Joomla, Drupal, Wordpress, Moodle etc... To create dynamic and flexible websites and landing pages participants explore the fundamentals of planning dynamic websites.
The Shivalik International School, Haldwani is a venture of “The Shivalik Educational & Social Welfare Society”. The society is voluntary, nonpolitical and nonprofit making origination established to promote education in the state of Uttar Pradesh and committed to reach downtrodden children, attain and give an international standard in education. TSIS family has strong philanthropic background in education field and has been rendering its services to the society for last 18 years. It promises to bring a revolutionary change in education by freeing learners from the bondage of books and rote learning. Keeping in mind the global prospects it is making a perfect blend of I.B. (International Baccalaureate) and CBSE curriculum, where students have freedom of imagination and get support and expand their horizon through activity based teaching and smart classes. The school follows a progressive and world class curriculum which suits the student centered Environment. Students learn in stress free environment where they get freedom of imagination and research.

In this document we explain the Designing a content management system using Joomla software for digital library in Shivalik International School.

What is content management system

A content management system is software that keeps every piece of content of a digital resource. Content can be simple, text, photos, music, video, documents or any digital form one can think of. It is an art of creating contents with the help of the system and establish library as per requirement. A major advantage of these Content management system (CMS) is almost no technical skills or knowledge required. One easily cope with these system and manage all content as per his/her organization needs.

Why we are using Content management system

• For creating or managing content of a websites with out help of others.
• Front-end (What the Public See).
• Open and Freeware under GNU General public License.
• Easy and Flexible to handle
• User Friendly/Technology advancement as per the user needs.
• No technical skills or Knowledge required.
• More Secure and Protected.

State of Art

Internet and web technology has changed the way of people interact, communicate, share and acquire knowledge with the evolution of internet and communication technology. The digital Library concept will come due to advancement and growing technology in ICT (Internet and Communication Technology). Every institution or organization has to fulfill the needs of the user’s so, through these digital software they provides up to date digital information with seamless access.

A variety of digital information available in internet, for managing such large amount of information libraries adopt the Digital Library Software to preserve unique and Informative knowledge of such collection. The major advantage of Digital Library software is full text searching and easily to achieve desired information. Managing and disseminating
these digital collections to the users and linking (hyperlink) one collection to another, we required content management system.

Content management system is software that keeps all the digital content of an organization. Content management system (CMS) is free web based software which allows ones to create and manage websites. One can control websites content like text, photo, videos etc.

In the past time if we needed a websites, the only option was to hire professional and we are fully dependent on them to maintain it. But now, with the rise of free open source software we can easily build or create a website by using a content management system (CMS). There are several CMS available in market such as Joomla, Drupal, Wordpress, and Moodle etc. All CMS have its own features and unique quality which compare to each others. These software are developed by lakhs of user’s and their community, the unique feature of these software are anyone can freely use and develop their websites by its own style or requirement. So our Department decided to go with Joomla because it fit for our requirement for creating small or medium website.

What is Joomla: - Content management system

Joomla is a free web-based content management software which allows ones to create and manage websites and powerful online applications. These are two part of the system the front-end (what the public see) and the back-end (what administrators see). The front-end is what the people see when they visit or see the website, consisting of design, logo, banner, text package etc. The back-end is the admin area where one can control own websites and access is provided via a special login (if administrator want) page and only for special users with administrator permission. Joomla is a platform based on PHP and MySQL which was created in 2005 by a team of open source developers. It currently has 200,000 community users and contributors.

Features including with core system

- WYSIWYG/TinyMCE
- Content scheduling
- User Management
- Access Control
Next Generation Libraries: Issues and Challenges

- Language Manager
- Banner Manager
- Contact Manager
- Search, Smart search
- Wed link Management
- Content Syndication

![Fig. 2. Feature including core system](image)

- News feed aggregation and display
- Template Management
- Search Engine friendly URL
- Breadcrumb s manager
- Tags Management
- Statistics Management
- Module Manager
- Plug-in manager
- Extension manager
- Media Manager
- System Management/Global configuration

Installation of Joomla on localhost

- Necessary Software Required for Installing Joomla
- Joomla latest full package
- Database Server (Apache, IIS) latest package
- Database Software (MySQL) latest package
- Scripting language PHP latest package

OR

Downloaded together as one package
- XAM PP- for Windows, Linux

Here we install Joomla (version 3.1) using XAM PP (version 1.8.2) in windows

- Run the installation file and follow the step by instructions or un zip the package
C:\Program Files\Xampp
• Open XAMPP control panel application and start “Apache” and MySQL”

![Fig. 3. XAMPP Control Panel Application](image)

Now localhost is installed. One can check if it work or not by typing the address “http://Localhost” in web browser. See a page illustrated below.

![Fig. 4. XAMPP for Windows interface](image)

• Create a database in php MyAdmin
From the XAMPP interface, click php MyAdmin to start creating database

![Fig. 5. Click phpMyAmin](image)

• After Creating database Download the Joomla latest full package at http://www.joomla.org/download.htm1
• Create a new folder inside “htdocs” in XAMPP and unpack the downloaded files into the folder
• Go to URL “http://localhost/mysite “
Step 1. Main Configuration

- Select Language: Choose own language in the drop-down menu, for example, “English (United States)”
- Site Name: Enter the name of site
- Description: Enter the description of site
- Site Offline: Choose status for access website Click “Yes” for “offline” and “No” for “online”
- Admin Email: Enter valid email address
- Admin Username: Enter “admin” as default
- Admin Password: Enter password
- Confirm Admin Password: Re-type password
- Click “Next” to continue Step 2

Step 2. Database Configuration

- Database Type: Select MySQLi
- Host Name: Enter “localhost”
- Username: Enter “root”
- Password: let it blank
- Database Name: enter the name of the database ones created
- Table Prefix: let it generate automatically
- Old Database Process: Click “Backup” to backup tables from former Joomla!
installation, or “Remove” to delete these tables
• Click “Next” to continue Step 3

Step 3. Overview

• Finalizing: one can choose installing sample data or not, by clicking on corresponding selection.
• Overview: This step is to review all information ones configured in step 1. After checking, one click “Install”.
• When installation finishes, one just need to click the button “Remove installation folder” button to complete the installation process. After that, one can either click on “Site” to see ones newly created or “Administrator” to access the administration area.

![Step 3 Overview](image)

Creating contents and Designing with templates

The most important elements of every websites is the creating contents and designing / customizing available contents with templates. The content structure, Categories, Menus, Navigation bar, Header, footer, Banner, Contact, Login form etc. After preparing the content for the websites one can think about its appearance, a template controls the graphical presentation of your digital content, layout, colours, graphics, design, that makes your site unique and different to others, we are using the free template name “liberty” see in fig. 9.

![Liberty Template](image)

Click on the Template (Administrative area) and see the position of modules in fig 10.
Home page of Shivalik international school creating contents using liberty template with different module positions.

**Implementation in Digital Library**

With Joomla one can give Librar y patrons easy access to your librar y’s digital contents. The software is free under GNU General Public License with dynamic interface both front-end and back-end. No technical skills /knowledge required one can easily maintain own website with good planning. Joomla helps librarian and guide for using and managing digital contents, basic set, customizing templates, managing plug-in, user management, content scheduling, access control and lots of new features for improving websites and user experience. While Joomla (CMS) can be powerful tools for institutions or Librar y for managing their digital content with a hidden costs.
Designing a Content Management System Using “Joomla” Software for Digital Library...

The font-end

- The interface that is seen by the visitors to the site.
- The target of your output.
- The place where visitors access the site’s content and functionality.
- Visibility of content and functionality can be categorized by assigning the group.

When user visit our website they see all Digital content like Library hours, Library rules, Work sheet, Activity sheet, Photo gallery, Links to different educational websites, Thoughts for the day, Digital Library, Cont acts and much more mention in fig. 13.

Communicating digital collection among users

Creating digital Library collection and communicat ing with these digital collections among users is most important and essential for an Library. Joomla features with core system provide a powerful tools to collaborate with its clients i.e. Email system, messages (Private, Mass), Creating article, Editing article (Special users), Organizing photo, videos, text etc and sharing /disseminating knowledge to achieve aims and desired goals for an organization.
We are providing all mentioned services to our users for collaborating and disseminating knowledge in the organization.

Using Digital Library Software: Greenstone

Today in Modern era many commercial software are available with the high degree of cost to manage Library operations. But many Libraries or Institutions do not afford the high level of cost using commercial products. Therefore an alternative solution in such situation must be open source software.

Open source software is software freely available with source code and anyone can use, modify and redistribute with their own style. There are ten to fifteen digital Library management software are available in markets out of this maximum open source like Greenstone, Dspace, Eprint, CDSware, Fedora and many more. We shall discuss about Greenstone.

Greenstone Digital Library software is an excellent software for building and distributing digital Library collections. It provides a new way of organizing information and publishing it on internet/internet. Greenstone is produces by the New Zealand Digital Library Project at the University of Waikato and developed and distributed in cooperation with UNESCO and human Info. NGO. It is a open source multilingual software issued under terms of the GNU General Public License. It is widely used in many Libraries and Institutions all over the world.

The beauty of the Greenstone Digital Software is that the full text of the entire collection of documents is searchable by any word in the text of any of the documents. The aim of the software is to empower users, particularly in universities, Libraries and other public service institutions, to build their own digital library. Digital Libraries are radically reforming how information is disseminated and acquired in UNESCO’s partners' communities and institutions in the field of education, science and culture around the world and particularly in developing countries.

Click on the enter library

Fig. 14. Enter Digital Library
By clicking on the enter library options the following screen will appear. One can select his/her desired information from the collection.

By clicking on the collection Greenstone search page will be it appears in Fig. 16.

A search result of query on a collection appears as visible in Fig. 16.

An opening page of Photo collection would appears as in Fig. 17.

Conclusion

A content management system (CMS) is required adaption for the further pursuits of
modern Libraries goals. Its allows mission critical goal to a organization to achieve its objectives with a digital environment using digital software.

If one planning to use these computer applications in your library/Institutions designing a content management system using Joomla software for digital Library produce good result for your organizations.

References

2. Software manual and training materials on Greenstone Digital Library are obtained from internet www.greenstone.org
Institutional Repositories: A Pillar for Libraries

Bibhas H Kumar Mishra; Sujeet Kumar Jha

Abstract
This article provides overview of institutional repository. Paper also discusses about its advantage and software requirement. IR are now being created to preserve, maintain and dissemination of digital assets. The growth of open access institutional repositories has been very remarkable in developing countries. IR is an online resources or place for storing academic materials. A university based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. The main purpose of institutional repository is to preserve and making available of research output of an institution/organization on public domain. Paper also discussed about various type of institutional repository software. Policy decision and technology requirement for IR have discussed in brief. Through IR institutions provides open access to institutional research output to the user community.

Keywords

Introduction
Institutional Repository is a digital archive of scholarly output of an institution. It also includes digital assets produced by academics, such as administrative documents, course notes and conference proceedings. “Institutional Repository is connected with the personal data collection of researches, thesis, synopsis, dissertations, and intellectual output of an institution, particularly a research institution or university. It facilitates the preservation, dissemination and sharing of the research work done by the community or institution worldwide in the form of digital contents. Institutional Repositor y works on web based and accessible nationally and inter nationally. A university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. Repositories often have no limitations on the types of publications or types of data that can be held, so these can range from peer-reviewed journal articles to grey literature, data sets, thesis, and teaching materials” (Varsha Sahu, 2013). Institutional repository provide open access to institutional research output by self-archiving it.
“The word Repository comes from Latin word Repositorium which means place where data is stored and maintained. The online Locus for collecting, preserving and disseminating information maintained and established by an individual institution is known as Institutional Repository. In today’s digital environment this is a university accepted norm that institutions must have their online repositories for making the research output of organizations such as research publications, thesis, annual report, conference proceedings etc. available in an open access environment” (Ankita Srivastava, 2013).

**Definition of Institutional Repositories**

According to Shearer “an Institutional Repository (IR) is a digital archive of an institution’s intellectual output. They collect and make accessible a range of research materials and also part of a larger global system of repositories” (Shearer, 2003).

Clifford A. Lynch defines IR as “a university based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate as well as organization and access or distribution” (Lynch, Institutional Repositories: Essential Infrastructure For Scholarship In The Digital Age, 2003).

**Purpose of Institutional Repository**

The main purpose of IR is to preserve and making available of research output of an institution/organization on public domain. Other objectives to having IR in an institution are:

- To create global visibility and wider access for an institution’s academic research output.
- To serve the research community by putting their research papers at a single location and check the duplicity of work.
- To providing open access to institutional research output.
- To store and preserve other unpublished (grey literature) like thesis and research reports, technical reports etc.
- To get recognition from peers by getting citation of their work. (Manoj Kumar Verma, 2015)

**Need of Institutional Repository**

- Explosion of digital Resources.
- Changing Information Needs of Researchers.
- Faculty desire to increase access to their research.
- Rising cost of scholarly communications.
- Publishers concern.
Advantages of IR

- Institutional Repositories provide researchers, teachers, and students with auto editing tools and instruments to register their scientific, teaching, and learning works.
- Institutional Repositories support the initiatives of their scientists and academics in research and pedagogy.
- Increase visibility to the library.
- Supports teaching and learning.
- Lower technology barriers.
- Safe keeping.
- Responsiveness to local user needs and preferences.
- Enabling and encouraging interdisciplinarity.
- Approaches to research.
- Helps student by providing access to research work and a location for the development of e-portfolios.
- Maximize global scientific understanding. (Kashyap, 2013)

Policy Decisions for Repositories

- Type of documents
- Single database for different types/one.
- Software: like Dspace or GNU Eprints or develop own.
- Resources: Human (IT, Library), Servers, Funding.
- Stake holders: Library, Each Department, Institution as a whole.
- Maintenance of IR.
- Back up files.

Technology

- IR software (open source/commercial)
- OAI-PMH harvesting protocol/software (free)
- Intel/ Pentium servers for IR
- Linux/Red Hat OS, MySQL/Postgress DBMS, Apache/Tomcat Web server, Perl/Java (free)

Legal Considerations

“Librarians and administrators responsible for operating and maintaining repositories need to ensure that all legal requirements are met. These requirements include appropriate software and content licenses. At MIT, authors must sign a nonexclusive license granting MIT permission to deposit, distribute, and preserve repository materials. Many universities have comprehensive intellectual property policies setting forth the responsibilities of faculty and administration. Corporations and not-for-profit organizations may have formal intellectual property policies. In some cases, intellectual property issues may be covered in
employment contracts.”

“If there are limits on distribution of materials or access levels, the repository software needs to build in those limits to ensure compliance. Academic institutions usually opt for open access but may have to restrict access for some research activities. If student portfolios are included in the repository, privacy considerations may limit access” (Drake, 2015).

Some renewed institutional repository

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Software</th>
<th>Type</th>
<th>Year</th>
<th>Website</th>
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</thead>
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<td>1.</td>
<td>Fedora Version 2.1</td>
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<td>2005</td>
<td><a href="http://WWW.fedora-commons.org">WWW.fedora-commons.org</a></td>
</tr>
<tr>
<td></td>
<td>Current version 3.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Dspace</td>
<td>Free open source software</td>
<td>2002</td>
<td><a href="http://WWW.dspace.org">WWW.dspace.org</a></td>
</tr>
<tr>
<td>3.</td>
<td>Eprints</td>
<td>Free open source software</td>
<td>2001</td>
<td><a href="http://WWW.epriynts.org">WWW.epriynts.org</a></td>
</tr>
<tr>
<td>6.</td>
<td>CDS Invenio</td>
<td>Free open source software</td>
<td>1991</td>
<td><a href="http://WWW.cdsware.cern.ch">WWW.cdsware.cern.ch</a></td>
</tr>
<tr>
<td>(former-y CDSware)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion

Institutional Repositories play a very important role in academic institutions/universities and research institutions for collecting, managing and disseminating scholarly works created in digital form. We can also say that institutional repository is a digital library which is maintained by an organization/institution for hosted their research output in public domain.

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Abstract
In the era of Information Communication Technology environment (ICT), metadata is emerging as a powerful tool to search useful information and it will allow information seekers to find information more easily and accurately. To make these electronic resources easily accessible and accurately to its users, the new metadata elements set is created, keeping in mind those parameters which are easily understood by the users friendly mode. The key to homogeneous access to heterogeneous resources (not only information) lies with metadata. The future of advanced information systems depends on metadata. Metadata is data about data. Metadata is the core. Metadata has been recognized as a key technology for management of digital resources in a networked digital information environment. It plays a vital role in description, discovery, organization and management of digital objects on the web. This paper briefly discusses the concepts, purpose, types, history, methods, metadata harvesting, Standard, resources discovery, how to create metadata, Dublin core, metadata crosswalks, elements of Metadata, Metadata Applications, etc.

Keywords
Metadata, Metadata Standard, Interoperability, Metadata Harvesting

Introduction
The wealth of information and its access provides a frustrating dilemma for librarians and information seekers alike. The availability of huge sources of unorganized information on the Internet initiated a need to have tools to organize the information, i.e. metadata. The web is truly huge. The different methods must be used to search this huge bulk of scattered information on the web. The search results on the web using general search engines seldom meet any kind of satisfaction compared to the information retrieval system used in library and information centers. New standards, tools and techniques are emerging for the design, description, discovery and presentation of digital information resources on the web. These new technologies not only facilitate better management of digital resources but also to retrieve more relevant search results. Metadata is an essential tool, which be developed as a standard in this digital era as guide for libraries and library professionals. Metadata is very much useful, especially when digitalizing the documents, it plays an important role. Metadata standards consist of bibliographic elements and have been constructed as per the
requirements for describing various kinds of documents. One of these new standards is Dublin Core Metadata which is widely used in libraries.

Defining Metadata

Metadata is “data about data”. In the context of bibliographic information systems, it is the author, title, published title, place, publisher, subject code, subject heading, etc. for books. In the case of serials, it is the title, publisher, ISSN, etc. The term “metadata” commonly refers to any data that aids in the identification, description and location of networked electronic resources. National Information Standards Organization defines “structured information describes, explains, locates or otherwise makes it easier to retrieve, use or manage an information resource. It is structured, encoded data that describe characteristics of information-bearing entities to aid in the identification, discovery, management, assessment, and the management of the described entities.

Types of Metadata

There are three main types of metadata:

- **Descriptive metadata**: describes a resource for purposes such as discovery and identification. It can include elements such as title, abstract, author, and keywords.
- **Structural metadata**: indicates how compound objects are put together, for example, how pages are ordered in chapters.
- **Administrative metadata**: provides information to help manage a resource, such as when and how it was created, file type, and other technical information, and who can access it.

There are subsets of administrative data

- **Rights management metadata**: which deals with intellectual property rights, and
- **Preservation metadata**: which contains information needed to archive and preserve a resource.

Purpose of Metadata

Metadata is used for several purposes.

- Describing data for the purposes of data exchange
- Describing data for the purposes of global access from query (including update) to optimize recall and relevance
- Describing data for the purposes of query optimization
- Describing data for the purposes of answer integration and explanation
- Describing data for the purposes of correct analytical processing or interpretation, representation or visualization
- Describing the data to overcome multilingualism and multimedia heterogeneities
- All of these purposes require that the data be described:
  - Such that the resource is constrained formally to ensure integrity
  - Such that the resource is reachable by automated means
  - Such that there is sufficient description for the purposes to utilize the resource.
• Assist with management and long-term preservation of digital files.
• Ensure quality control for metadata records.

WHAT DOES METADATA DO?

An important reason to create metadata is to facilitate discovery of relevant information. In addition to resource discovery, metadata can help organize electronic resources, facilitate interoperability and legacy resource integration, and provide digital identification, and support archiving and preservation.

History of Metadata

The history of metadata has existed for centuries not in a standardized format but similar by means of objectives and purpose of cataloguing which are in place in various libraries, archives and museums. Vellucci (1998) said that the term “metadata” dates back to the 1960’s but become established in the context of Database Management Systems (DBMS) in the 1970’s. Woodyl (1999) traces the first reference to “Metadata” back to Ph.D dissertation on “An info logical approach to data bases which made the distinction between:

• Objectives (real world phenomena)
• Information about the object; and
• Data representing information about the object (i.e. metadata)

Haynes (2004) described metadata as the data that describes the content format or attributes of data record or information resources. It can be used to describe highly structured resource or unstructured information such as text documents. Metadata can be applied to description of: electronic digital resources data and printed documents such as books, journals and reports. Metadata is a set of elements or data, which describes the properties or characteristics of an information object or resource which professionals, wants to digitize.

Need of Metadata

Metadata is a systematic method for describing resources and thereby improving access to them. The primary aim of metadata is to improve resources discovery.

• Resource documentation, Resource selection, evaluation and assessment
• Resource identification and location, Improving the quality and quantity of search result
• Electronic commerce to encode prices, term of pay, etc.
• Protecting instinctual property rights, Efficient content development and archiving

METHODS OF METADATA ON RELATED WORKS

Based on characteristics such as structure, scalability and capabilities in interoperating with other heterogeneous metadata, the existing library systems are categorized into three categories.
• **Bibliographic Metadata Based Method**: This method is used to integrate information resources into a library system by embedding the access information within the metadata information. For example, the element ‘identifier’ in the Dublin Core Metadata Set (DCMS) can contain a URL/URN that links to the full text access information. This method is constrained to specific metadata set and it is extremely hard to interoperate with other information resources built in different metadata standards.

• **Database Browsing and Navigating Based Method**: This method is a widely used one similar to the Open Directory and Yahoo, in which this kind of library systems classify the collections/databases into different categories according the predefined subjects, media types, or even the alphabet. The users will find it easier to find relevant information if he wants to something within a special subject.

• **Global as View (GaV) Based Method**: In order to integrate and search cross heterogeneous resources built in different types of metadata, one simple idea is to create a global schema as a view over local ones. Figure 1 illustrates the approach of Global as View (GaV) based method. This global set contains nine different metadata formats and furthermore, each of them is mapped separately into qualified DC which is adopted to annotate the records returned to the users.

![Fig. 1. Global as View Method](image)

• **Local as View (LaV) Based Method**: The GaV method is generated a union of various available metadata formats. It leaves the individual metadata to the data provider side, while it just distributes user queries to all digital collections, gathers results from each of them and delivers the list of search results back to the users’ browser. Figure 2 illustrates the approach of Local as View (LaV) based Method. Many examples can be found from the Web-based search engines, such as the MetaCrawler2. The advantages of a meta-search are that one search can highlight the strengths of many top search engines like Google, Yahoo! and the entire web.
Standardization of Metadata

Metadata is represented in the form of elements. A set of metadata elements and rules for their use that have been defined for a particular purpose is called a metadata standard. It is a data model for collecting information about documents on the web. The process of standardization of metadata – models, semantics and syntax – is only just beginning, and then mainly in the data domain. A general metadata model, RDF (Resource Description Framework) has been proposed with the implementation language XML (eXtended Markup Language). Some of the metadata standards are MARC, MARC21, Dublin Core, UK MARC (now transformed to MARC21), etc. MARC21 is the latest standard in terms of metadata. Dublin Core metadata is widely used among all metadata.

Metadata Interoperability

Interoperability is describing a resource with metadata. Interoperability is the ability of multiple systems with different hardware and software platforms, data structures and interfaces to exchange data with minimal loss of context and functionality.

Metadata Harvesting Services

The harvested metadata is accrued in a database that can be searched. An Open Archives Initiative (OAI) Institutional Repositories (IR) whose content is indexed and posted for open use from a World Wide Web server. The OAI/PHM metadata is an international standard protocol for classification fields for any item that is shared in an OAI archive such as author, content description, abstract, file, tags etc.

Resource Discovery

Metadata serves same functions in resource discovery as good cataloguing does by

- allowing resources to be found by relevant criteria
- identifying resources, bringing similar resources together
- distinguishing dissimilar resources and, giving location information
HOW TO CREATE METADATA?

To encode Information the Data should be expressed in proper way. Create a Single disk file for each metadata record, that is, one disk file describes one data set. Then use some tool to enter Information into this disk file so that the metadata confirm to the standard. The procedure is,

- Assemble Information about the data set and create a Digital file containing the metadata, properly arranged.
- Check the Syntactical Structure of the file. Modify the arrangement of Information and repeat until the syntactical structure is correct.
- Review the content of the metadata, verifying that the information describes the subject data completely and correctly.

ROLE OF METADATA IN INFORMATION MANAGEMENT SYSTEM (IMS)

The role of Metadata in Content Management is something Interesting and worth interrogating. Metadata is used in variety of situations and applications with widespread web applications. For “Searching” techniques, the metadata role is very very important.

Dublin Core

Dublin Core is a metadata standard formed over a series of workshops attended by professionals from the computer science and library science worlds, as well as other professions (Hudgins, Agnew, & Brown, 1999). The name Dublin Core is derived from Dublin, Ohio, where the first workshop was held in 1995. That initial workshop produced the thirteen basic core elements. Today, fifteen elements make up the level of Dublin Core use which is called Simple. Dublin Core is an internationally recognized metadata standard comprised of fifteen elements used to describe a resource.

1. Title: The name given to the resource by the CREATOR or PUBLISHER.
2. Creator: The person(s) or organization(s) primarily responsible for the intellectual content of the resource; the author.
3. Subject: The topic of the resource; also keywords, phrases or classification descriptors that describe the subject or content of the resource.
4. Description: A textual description of the content of the resource, including abstracts in the case of document-like objects; also may be a content description in the case of visual resources.
5. Publisher: The entity responsible for making the resource available in its present form, such as a publisher, university department or corporate entity.
6. Contributor: Person(s) or organization(s) in addition to those specified in the CREATOR element, who have made significant intellectual contributions to the resource but on a secondary basis.
7. Date: The date the resource was made available in its present form.
8. Type: The resource type, such as home page, novel, poem, working paper, technical report, essay or dictionary. It is expected that TYPE will be chosen from an enumerated
9. **Format**: The data representation of the resource, such as text/html, ASCII, Postscript file, executable application or JPG image. FORMAT will be assigned from enumerated lists such as registered Internet Media Types (MIME types). MIME types are defined according to the RFC2046 standard.

10. **Identifier**: A string or number used to uniquely identify the resource. Examples from networked resources include URLs and URNs (when implemented).

11. **Source**: The work, either print or electronic, from which the resource is delivered (if applicable).

12. **Language**: The language(s) of the intellectual content of the resource.

13. **Relation**: The relationship to other resources. Formal specification of RELATION is currently under development.

14. **Coverage**: The spatial locations and temporal duration characteristics of the resource. Formal specification of COVERAGE is also now being developed.

15. **Rights Management**: A link (URL or other suitable URI as appropriate) to a copyright notice, a rights-management statement or perhaps a server that would provide such information in a dynamic way.

Table-1. Dublin Core Metadata Elements

<table>
<thead>
<tr>
<th>Title</th>
<th>Format</th>
<th>Creator</th>
<th>Subject</th>
<th>Source</th>
<th>Description</th>
<th>Publisher</th>
<th>Contributor</th>
<th>Date</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>title of resources</td>
<td>physical or digital</td>
<td>- author</td>
<td>- subject, keyword</td>
<td>- journal collection, etc.</td>
<td>- content table, language-abstract</td>
<td>- person/institute</td>
<td>- person/institute</td>
<td>- date</td>
<td>- nature of content</td>
</tr>
</tbody>
</table>

Major Metadata Harvesting Services in India

A metadata harvesting service harvests or indexes metadata from OAI-compliant archives or repositories through harvesting software that supports a protocol known as OAI-PMH (Open Access Initiative Protocol for Metadata Harvesting). Some Indian institutions have been experimenting with metadata harvesting services and installed metadata harvesters. Major metadata harvesting services in India are:

- Search Digital Libraries (SDL)
- SJPI (Scientific Journal Publishing in India) Cross Journal Search Service
- SEED (Search Engine for Engineering Digital-repositories)
- Open J-Gate, Knowledge Harvester@INSA, Open Index Initiatives
- Prototype Digital Archive of Indian Aerospace Research (P-DAINAR)
- Cross Archives Search Service for Indian Repositories
Table-2: Metadata Service Provider

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name</th>
<th>URL</th>
<th>URL Host</th>
<th>Software Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Searched Digital Libraries (SDL)</td>
<td><a href="http://drtc.isibang.ac.in/sdl">http://drtc.isibang.ac.in/sdl</a></td>
<td>DRTC, Bangalore</td>
<td>PKP (Public Knowledge Project System)</td>
</tr>
<tr>
<td>2.</td>
<td>SJPI Cross Journal Search Service</td>
<td><a href="http://144.16.72.144/harvester">http://144.16.72.144/harvester</a></td>
<td>NCSI, IISc</td>
<td>PKP System</td>
</tr>
<tr>
<td>3.</td>
<td>SPEED J-Gate</td>
<td><a href="http://eprint.iitd.ac.in">http://eprint.iitd.ac.in</a></td>
<td>IIT, Delhi</td>
<td>PKP System</td>
</tr>
<tr>
<td>4.</td>
<td>Open-J-Gate</td>
<td><a href="http://www.openj-gate.com">www.openj-gate.com</a></td>
<td>Informatics India</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Knowledge Harvester@INSA</td>
<td><a href="http://61.16.154.195/harvester">http://61.16.154.195/harvester</a></td>
<td>INSA</td>
<td>PKP System</td>
</tr>
<tr>
<td>6.</td>
<td>Open Index Initiatives</td>
<td><a href="http://oiijidr.ac.in">http://oiijidr.ac.in</a></td>
<td>IGRIDR, RBI</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Prototype Digital Archive of Indian Aerospace Research (P-DAINAR)</td>
<td><a href="http://www.ncsi.iisc.ernet.in">www.ncsi.iisc.ernet.in</a></td>
<td>National Centre for Science Information</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Cross Archives Search Service for Indian Repositories</td>
<td><a href="http://casin.ncsi.iisc.ernet.in/oai">http://casin.ncsi.iisc.ernet.in/oai</a></td>
<td>IIS, Bangalore</td>
<td></td>
</tr>
</tbody>
</table>

Metadata Applications

Metadata has been recognized as a key technology for management of digital resources in a networked digital information landscape. This metadata has become very popular because of its simplicity, extensibility, interoperability and modularity. It has been used for several applications. The Dublin Core Metadata Set is about semantics of sixteen core data elements. The simplicity of Creation & Maintenance, Comm only Understood Semantics, International Scope, and Extensibility are the underlying goals of the Dublin Core Metadata Set. It is devised to make web search more sophisticated than search facilities provided by free text indexing and search engines. The intention is that the Metadata should be capable of being generated automatically either from the conventional document description available in word processing packages or through completion of a simple submission form by the originator. On the Internet, metadata is designed for tasks ranging from resource description and discovery to archiving, trading, content filtering, resource syndication and information management. This diversity of purpose reflects the variety of information resources available on the Internet, which range from personal web pages to huge portals for government
Eric Miller (1998) described the applications of metadata as follows:

- Cataloguing (item & collections).
- Resource Discovery, Electronic Commerce
- Intelligent Software Agents, Digital Signatures
- Content Rating, Intellectual Property Rights
- Privacy Preferences & Policies

Nevile (2004) classified the purpose of metadata applications. Metadata is used:

- For tagging of content that makes it universally accessible as it is used by a range of access devices.
- To identify the conformance of content to accessibility and other standards.
- To describe the needs and preferences of people.
- To describe the features of a resource for matching it to the needs and preferences and
- For a universally remote console to give access to people with disabilities to utilities and appliances.

According to Brophy (2001), Metadata serves a number of purposes and applications:

- Aids resource discovery
- Assists the user to evaluate the object
- Enables the user to check the object’s availability
- Describes the terms under which the object may be used
- Enables a location for the object to be determined
- Provides the owners of the objects with a means of asserting their rights
- States IPR rights and terms for use of objects
- Assists Librarians in managing collections of objects
- Metadata is useful to several stakeholders such as Librarians, Publishers, Abstracting and Indexing Service Providers, Archives, Internet Search Engine Companies, Document Supply Services, Book Sellers Subscription Agents, Governments and many more.

### METADATA APPLICATION IN LIBRARY & INFORMATION CENTERS

Metadata can be applied in the library for following fields which are mentioned as:

- Catalog, Union Catalogue, OPAC, WEBOPAC
- Digital Library, Institutional Repository, ETD
- Document Supply Service, E-Journal Database
• E-book Databases, Indexing and abstracting, CAS & SDI Services

Metadata Crosswalks

A crosswalk allows metadata created by one community to be used by another group that employs different metadata standards. Crosswalks are important for virtual libraries where resources are being collected from a variety of sources and are expected to act as a whole, perhaps with a single search engine applied.

Digital Identification

Most metadata schemes include elements such as standard numbers to uniquely identify the work or object to which the metadata refers. The location of a digital object may also be given using a file name, URL, or some more persistent identifier such as a Persistent URL (P URL) or the Digital Object Identified (DOI). Persistent identifiers are preferred because file locations change frequently, making the URL (and therefore the metadata record) invalid. In addition to the actual elements that at point to the object, the metadata can be combined to act as a set of identifying data, differentiating one object from another for validation purposes.

Conclusion

Metadata is one of methodological aiding in a particular retrieval of information. Metadata is an essential tool that can be developed as a standard in this digital era as guide for libraries and librarians. The growing number of digital repositories that are available on the web is rendering it difficult for the users to track individual sites in search of necessary information. It plays a vital role in description, discovery, organization and management of digital objects. The expectations, however, from the data providers to re-check and re-annotate their own documents are very unlikely. So, how to automatically annotate the collection with ontology-based semantics will be the future work. Additionally, many efforts will be put into improving the query mechanism in order to allow users to choose their favourite data providers.

Reference

www7/tutorial/


Paradigm Swing in Training Programmes to Raise Cultural Competencies of Lib-Culture

CHAN DA ARYA; SUPERNA SHARMA

Introduction

Libraries hold an important place in people’s lives. If current trends in usage continue, libraries will increasingly become a minority service-driven. Therefore, Library training with a multicultural perspective is essential to encourage library use, as it enhances appreciation and understanding of other cultures as well as one’s own. Training with this perspective promotes the learner’s sense of the understanding different user communities.

Cultural competence is a highly developed ability to recognize the significance of culture in one’s own life and in the lives of others, and to come to know and appreciate diverse cultural backgrounds and characteristics through interaction with individuals from diverse linguistic, cultural, and socio-economic groups.

Lib-Culture explains about the overall culture of library and its staff. Most of the persons think that library professionals are passive civil servants, hurrying about “Sshh- ing” people and stamping things. But in “Information-on-fingers era” library professionals bring wisdom and culture to masses by preserving every aspect of human knowledge as they are not confined to disciplines and have capabilities of all knowing and all seeing by virtue of their vast power. The rapid pace of change in technology and different library services had made it difficult for libraries to determine just what technology skills various types of library personnel should know. Competencies not only are present but they are practiced and developed to facilitate superior performance in library culture. Core technology competencies for library professionals provide practical look at skills, technological know-how and personal attributes that enables library professional to take full advantage of technology to deliver dynamic library collections and services. Higher skills levels of library professional can able to take more advantage of technology to improve the library culture and that can be achieved by Basic Training, Professional Training and Advanced Training.

The library profession should take steps to ensure cultural competence as an integral part of LIS education, training and practice, and to increase research and scholarship on culturally competent practice among library professionals. Academic library administrators should be encouraged to provide culturally competent in-service training and opportunities for continuing education for library faculty and staff.
Basic Training

In Basic Training, basic knowledge of library works and technicalities about library collection and services are given. Here, the new entrants can be trained in latest technology to develop systems for organizing and managing the information so that it can be easily retrieved. Programmes of study should be designed to prepare graduate students as professionals mediating between information and people by developing the skills to communicate with a diverse clientele and information seeking behaviour of diverse groups.

Professional Training

In the time of information explosion professionals have to play new roles to fulfill users’ requirements and to take on these new roles effectively they need to equip themselves with new skills and values. Personal competencies are a set of attitudes, skills and values that enable practitioners to work effectively and contribute positively to their organization and clients. In Professional training, library professional can be made familiar about subject area and clientele of the particular region. This training programme will present librarian as a subject specialists. Librarian professionals can attend crash courses to understand the multicultural community of the region which may be run at state level to fill the gap between basic knowledge and working knowledge to understand user community of the particular region.

Continuing education programme can be conducted under the supervision of the institution and the course should be based on the assumption that an understanding of the requirements of multicultural society. Time to time there should be proposed a series of workshops, seminars focusing on multiculturalism and diversity in the workplace.

Education and professional practice cannot be constructive if LIS educators and professionals continue to use and rely on past practice, old knowledge, or untested practice. In order to remain vital in its goal to educate professionals to serve in a culturally diverse society needs to conduct research on multicultural issues, to revisit old practices, and to institute holistic education programmes in order to successfully and effectively prepare information professionals to mediate between people and information. Transferring libraries into multicultural institutions will require culturally competent professionals who understand and respect the diverse backgrounds of individuals, and who have developed a high level of expertise and knowledge about culture and its significance in all aspects of librarianship. There should be run short term courses of multicultural competencies for library professionals after degree courses.

Advanced Training

On the library practising side, librarians need to focus on their users’ knowledge and remain updated in their professional knowledge in order to provide value added services to their users, anywhere and anytime and in desired formats. They need to manage all types of organisational knowledge to maximise its utilisation and support it to the provision of information services to bridge the gap between the skills acquired in classrooms and those required in practice. For that purpose an academy should be established at national level for the librarians where they can acquire administrative and management skills,
communication skills and programming skills and evolve as a culturally competent leaders who can foster sensitivity, a spirit of inquiry to other world views and cultural orientations and create opportunites for cross-cultural communites and skill development of staff.

LIS education should be in critical thinking, applying creativity in problem solving, logical reasoning, and analyzing scientific information, accepting social duties in a positive and responsible manner, thinking globally and act locally. Staff with these qualities can build up a culturally competent organization where a librarian plays the role of mentor or for users of different communty by developing multicultural competencies for self as well as for his/her staff.

Internationalization of LIS programs

On talking the issues and problems in internationalizing LIS education, one international body immediately comes to mind: The International Federation of Library Associations and Institutions (IFLA) Section on Education and Training. Inter nationalization of education should include practice intercultural communication, share knowledge on culture, heritage and educational subjects. Internationalization of curriculum is an important aspect of the inter nationalization process. It is the responsibility of LIS faculty to implement inter nationalization of curriculum in LIS schools. Faculty members should be properly educated themselves in order to effect these changes. It is also about changing the perception and assumtions of teachers about international students. LIS Schools should collaborate with the Office of International Affairs to create internationalized curricula and facilitate curriculum change.

References

Impact of Social Networking Sites on Engineering Students of Bipin Tripathi Kumaon Institute of Technology, Dwarahat (Almora): A Study

CHARU CHANDRA TIWARI; PRAKASH CHANDRA PANDEY

Abstract

Social Networking Sites are those sites which allow their users to build social relations on the Web. It is the web based service accessed by students which provides them to interact virtually and share their thoughts in the forms of comments, likes, messages, tags, etc. here users can upload photos, videos. Social networking can positively or negatively affect educational performance of students and hence must be managed efficiently. The present study demonstrates and elaborates the various aspects of social networking sites used by engineering students such as, awareness approach, adequacy, purpose, confidence level and benefit of using social networking sites. A research questionnaire was designed to determine the factors of social networking websites that have impact on students.

Introduction

The social networking services are web based and allows users to interact each other online with the help of e-mails, instant messaging, etc. The social networking sites permits users to share their views, interests, events, ideas, photos, videos, links, activities, etc. with the others users who are in their network.

Now days there are many Social Networking Sites such as: Facebook, Twitter, Orkut, YouTube, Google+, MySpace, etc. All of them allow their users to connect and share their information.

Social Networking Service is a Computer-Based Communication which is fully based on the internet and it offers users to create their profile in which they provide their personal information. The individual were asked to fill a form which contains a series of questions and their profile was created according to the answers of these questions. Their profile information mainly consists of age, sex, location, interest, hobbies, about me, qualifications, etc. and offers to upload a profile photo. According to their given detail others user can find their friends or relatives on these Social Networking Sites.

In 2014, Social Networking Sites were accessible from anywhere and became an important part of people, more than 2.2 Billion users on Facebook, 4 billion videos watched by users every day on YouTube and 500 million tweets send, received by users on the Twitter and LinkedIn has 300 million professional users.
Review of Literature

Sunith a Kuppu swamy and P.B. Shankar Narayan\textsuperscript{2} their study analyzed that at these social networking websites distract stud ents from their studies, but these websites can be useful for education based on sound pedagogical principles and proper supervision by the teachers. Moreover, the research concludes that at social networking websites have both positive as well as negative impact on the education of youth, depending on one’s interest to use it in a positive manner for his or her education and vice versa. Priyanka Rani, Jagriti Ch and and Vaibhav Patel\textsuperscript{3} in their paper has reflected upon the use of social networking technologies in an educational context SNSs have more positive impact on their academic performance. This is due to the fact that at the SNSs can be used for various academic activities such as communication with the faculty and university authority, communicating with lecturers and supervisors, making academic discussions with classmates and chatting with friends in respect to topics of educational interest. Social Networks provide an alternative to the traditional lecture format, creating an online classroom community, and increasing teacher-student and student-student interaction. Issues related to student privacy and vulnerability with social networking sites are growing concerns that need to be addressed by institutions as a whole. K.P Sing & M.S. Gill\textsuperscript{4} reflects that at the popular concept of Social Networking Sites (SNSs) is associated with the broader context of Web2.0, which is a recent phenomenon among scholars. These are providing various ways to interact with each other. Patient Rambo\textsuperscript{5} in Exploring the Impacts of Social Networking Sites on Academic Relations in the University stated that at to enhance social capital formation, foster trust, and connect interactions in remote locations, there is a dearth of research on how SNS potentially leverages academic /power relations in university settings. Mindful of the unsubstantiated nexus between power relations, knowledge construction, and academic appropriation of SNS, un raveling the impact of SNS on lecturer-student and student-peer power relations in the university can illuminate the understanding of this academic connection/puzzle. Ashraf Jalal Yousef Zaidich\textsuperscript{6} stated that there are some benefits and obstacles that face the using the social networking as educational tool. Privacy, real friendship, taking up time and miscommunication are the most important challenges facing education through the social networking.

Objective of the Study

1. To find out the number of students who actively using social networking sites.
2. To identify potential contribution of Social Networking Sites to fill the gaps among students.
3. To know how students retrieve the relevant information by the use of Social Networking Sites.
4. To find out the purpose of using Social Networking Sites.
5. To find out the frequency of using Social Networking Sites.
6. To determine the controversy of either or not the SNS’s were used.
7. To identify the awareness of SNS’s among the students.
8. To find out the popularly used SNS’s.
9. To find out the time spent on SNS’s.
Methodology

Keeping in view the above objectives in mind, a structured questionnaire was prepared to collect data from the students of Bipin Tripathi Kumaur Engineering College, Dwara hat (Almora). Questionnaire contains various questions pertaining to the use of Social Networking Sites. For this purpose a total of 150 questionnaires were distributed among students of Engineering College. Out of 150 questionnaires distributed, 130 valid questionnaires were collected and then data was analyzed, tabulated, interpreted and presented in the form of this paper.

Table 1. Number of students using social networking sites

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>74</td>
<td>56.92%</td>
</tr>
<tr>
<td>No</td>
<td>56</td>
<td>43.08%</td>
</tr>
</tbody>
</table>

Table 2. Purpose of using Social Networking Sites

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To make new friends</td>
<td>17</td>
<td>13.07%</td>
</tr>
<tr>
<td>Connected with existing friends</td>
<td>31</td>
<td>23.85%</td>
</tr>
<tr>
<td>Find old friends</td>
<td>09</td>
<td>06.93%</td>
</tr>
<tr>
<td>Informed with latest information</td>
<td>41</td>
<td>31.54%</td>
</tr>
<tr>
<td>Interact with those people who have common interests</td>
<td>13</td>
<td>10.00%</td>
</tr>
<tr>
<td>Sharing of information and other course related material</td>
<td>19</td>
<td>14.61%</td>
</tr>
</tbody>
</table>

Above table shows that students mostly use SNS’s for to get informed with latest information (31.54%), after that they use for stay connected with their existing friends and relatives (23.85%), here the term ‘Social’ is benefitted. To make new friends (13.07%) and sharing of information and other course related material (14.61%) they use SNS’s. There are many pages on the SNS’s where users find friends who have common interests, so less (only 10%) people use these for this purpose and to find old friends some users use SNS’s.

Table 3. Mostly used Social Networking Sites

<table>
<thead>
<tr>
<th>Social Networking Sites</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>57</td>
<td>43.85%</td>
</tr>
<tr>
<td>Orkut</td>
<td>06</td>
<td>04.62%</td>
</tr>
<tr>
<td>Google +</td>
<td>24</td>
<td>18.46%</td>
</tr>
<tr>
<td>Twitter</td>
<td>09</td>
<td>06.92%</td>
</tr>
<tr>
<td>YouTube</td>
<td>21</td>
<td>16.15%</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>13</td>
<td>10.00%</td>
</tr>
<tr>
<td>Hi5</td>
<td>0</td>
<td>Nil</td>
</tr>
<tr>
<td>MySpace</td>
<td>0</td>
<td>Nil</td>
</tr>
<tr>
<td>Yaari</td>
<td>0</td>
<td>Nil</td>
</tr>
</tbody>
</table>
Impact of Social Networking Sites on Engineering Students of Bipin Tripathi Kumaon...

Above table shows that the Facebook (43.85%) is the most favourite Social Networking Site among the students, after that Google+ (18.46%), and for videos YouTube (16.15%) is quite favourite, and after that LinkedIn (10%), Twitter was also used by the students (6.92%) and very less users use Orkut.

Table-4. Number of Social Networking Sites used by students:

<table>
<thead>
<tr>
<th>Number of Social Networking Sites</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2</td>
<td>104</td>
<td>80.00%</td>
</tr>
<tr>
<td>2 to 4</td>
<td>24</td>
<td>18.47%</td>
</tr>
<tr>
<td>4 to 6</td>
<td>02</td>
<td>01.53%</td>
</tr>
<tr>
<td>More than 6</td>
<td>00</td>
<td>Nil</td>
</tr>
</tbody>
</table>

As we all know that there is not a single Social Networking Sites, so most of the students use 1 to 2 Social Networking Sites (80%) and some of them also use 2 to 4 Social Networking Sites (18.47%) and only single users use 4 to 6 Social Networking Sites and no one uses more than 6 Social Networking Sites.

Table-5. Time spent on using social networking sites by the students

<table>
<thead>
<tr>
<th>Time</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 hour</td>
<td>82</td>
<td>63.08%</td>
</tr>
<tr>
<td>1 to 2 hours</td>
<td>31</td>
<td>23.85%</td>
</tr>
<tr>
<td>2 to 4 hours</td>
<td>15</td>
<td>11.54%</td>
</tr>
<tr>
<td>4 to 6 hours</td>
<td>02</td>
<td>01.53%</td>
</tr>
<tr>
<td>More than 6 hours</td>
<td>00</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Many of the students spend more than 1 hour on the Social Networking Sites (63.08%), after that some of them spend 1 to 2 hours on the Social Networking Sites (23.85%), there are some users who spend 2 to 4 hours on the Social Networking Sites (11.54%), and very few of the users spend more than 4 hours on the Social Networking Sites.

Table-6. Frequency of using social networking sites

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>63</td>
<td>48.47%</td>
</tr>
<tr>
<td>Alternatively</td>
<td>23</td>
<td>17.69%</td>
</tr>
<tr>
<td>Weekly</td>
<td>35</td>
<td>26.92%</td>
</tr>
<tr>
<td>Monthly</td>
<td>09</td>
<td>06.92%</td>
</tr>
</tbody>
</table>

Many of the students are the daily users of Social Networking Sites (48.47%), some of them access Social Networking Sites Weekly also (26.92%); alternate users are also there they access Social Networking Sites alternatively (17.69%), and there are fewer users who access Social Networking Sites Monthly.
Table 7. Number of students on which Social Networking Sites have created negative impacts

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33</td>
<td>25.38%</td>
</tr>
<tr>
<td>No</td>
<td>97</td>
<td>74.62%</td>
</tr>
</tbody>
</table>

Above table states that the students think that Social Networking Sites have not created any negative impact (74.62%), but some of them felt that yes Social Networking Sites have created some negative impacts on them (25.38%).

Table 8. Cause of negative impacts of Social Networking Sites on students

<table>
<thead>
<tr>
<th>Negative impacts</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of privacy</td>
<td>13</td>
<td>10.00%</td>
</tr>
<tr>
<td>Loss of time</td>
<td>81</td>
<td>62.31%</td>
</tr>
<tr>
<td>Addiction</td>
<td>32</td>
<td>24.62%</td>
</tr>
<tr>
<td>More reliance on machines</td>
<td>04</td>
<td>03.07%</td>
</tr>
</tbody>
</table>

By using Social Networking sites they have wasted their time (62.31%), they think that they may get addicted of these Social Networking Sites (24.62%). The Social Networking Sites consist of the personal information of the users, so they think that due to any problem they may lose their privacy (10%), some of the students think that they don’t want to be more dependent on the machines so hesitate to use Social Networking Sites (3.07%).

Table 9. Social networking sites helped students to receive information about their subject

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>98</td>
<td>75.38%</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td>24.62%</td>
</tr>
</tbody>
</table>

Above statistics says that (75.38%) of the students get their information about their subject from the Social Networking Sites and rest of the students could not get their information.

Table 10. Social Networking Sites helped students to receive information in

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In course queries</td>
<td>22</td>
<td>16.92%</td>
</tr>
<tr>
<td>To get latest information</td>
<td>94</td>
<td>72.31%</td>
</tr>
<tr>
<td>Prepare projects, assignments, etc.</td>
<td>14</td>
<td>10.77%</td>
</tr>
</tbody>
</table>

Above table states that Social Networking Sites helps the students in getting the latest information (72.31%), in course queries (16.92%) and also in the preparation of projects, assignments, etc. (10.77%).
Table 11. Social Networking Sites used as a bridge to communicate with other students related to course material:

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>78</td>
<td>60%</td>
</tr>
<tr>
<td>No</td>
<td>52</td>
<td>40%</td>
</tr>
</tbody>
</table>

Above data reveals that 60% of students think that the Social Networking Sites used as a bridge to communicate with other students because the Social Networking Sites are very common medium of exchange of information; and 40% of them say no.

Conclusions

This study focused on the impact of social networking sites on engineering students. It is crystal clear from the result that the younger generation here accepted the information resources through social networking sites. Social networking sites are new tools and techniques of internet or WEB 2.0, where people interact with each other virtually, share their feelings in the forms of comments, likes, photos, videos, etc. Internet has brought the whole world under a computer screen where a user can do all its work remotely. It has both positive as well as negative effects. It depends upon the users how they can use it. Social networking sites are the tools if the users use it for good purpose they get benefited and for any wrong intention they get negative things.

Reference

1. http://www.inter net marketing-onlinetips.blogspot.com
Open Source Software For Library Management

Chetan Sudhakar Sonawane

Abstract

Open Source Software (OSS) is available free of cost to the users and it provides the flexibility of modifying the source code available under a license. The user can modify the source code and can customize the software as per the need and can redistribute it in a modified or unmodified form. Libraries have been early innovators and adopters of open source. The Koha library management system is now 15 years old. DSpace is 12 years old. Both are widely adopted in institutes of all sorts. Koha has found its implementation mostly in public libraries and it serves the most diverse audience. Roles of commercial companies in the adoption of Open Source Software have been prominent. Project such as DSpace, Hydra and Kuali includes the collaboration of multi-institution which together funded in the development and support, while Koha as built a rich, diverse community of contributors around the world. Wide adoption of open source has encouraged innovative approaches to open source in all aspects of library operation. This paper will provide a brief overview of Open Source Software for library management.

Keywords

Open Source Software, Koha, DSpace, Library Management System

Introduction

Open Source Software (OSS) is computer software which is available free of cost and whose source code is made available to the users under a license which bestow them the right to study, change and improve the software, and to do modification in it as per the need and can distribute its copies to other users to follow a pattern (Kamble, V.T., Raj, Hans and Sangeeta, 2012). OSS is an open community – the type of community that is only possible in a globally networked computing environment (Morgan, Eric., 2009). Library automation begins with the acquisition of Library Management System (LMS) or Integrated Library System (ILS). The purchase of the LMS is completely dependent on the modules it has, and the modules that are essential to buy and of course the budget. The LMS should necessarily have the maximum facility to automate the library into a computerized system. Thus, the term Library Automation refers to information and communication technologies that are used to replace manual systems in the library. The key functions of any library which are now automated includes acquisition, cataloging, circulation, serial control,
Open Source Software For Library Management


There are many closed source or commercial softwares available that are well established in the market, and many libraries are making use of it. But along with this there has been onset of OSS movement during the last one and half decade as a result we have seen the proliferation of many OSS for libraries. Due to the vast features and easy to use characteristic open source library management software have become popular in short duration along with digital library software, content management software and E-learning management softwares.

Open Source Movement

The open source movement is a broad reaching movement of individuals who support the use of license for some or all software. The open source movement begins in the 80’s and it was known as free source movement earlier. In the year 1988 a group of individuals advocated that the term free software should be replaced by open source software (OSS) so that it will have a more corporative look and its adoption and community participation can also be increased. Software developer can also feel the desire to publish their software with an open source license, so as anybody can also develop the same software or can understand its functionality. The open source movement has now become community driven, it is about community—the type of community that is only possible in a global networked computing environment. There is no way any single vendor of software will be able to gather together and support all the programs that are well-managed open source software can support (Rahndwa, Sukhwinder, 2008).

Open source software generally allows anybody to make a new version of the software, port it to a new operating system and processor architecture, share it with others or mark it. The aim of the open source is to let the user understand, modify, duplicate, make it reliable or simple, while keeping it in its earlier stage. The open source movement has found fertile support from library professionals as a result we have seen the development of many LMS. The movement has taken pace during the time when most of the library professionals were frustrated with the commercial vendors (Breeding, Marshall, 2009). In addition to this the shrinking budgets and the increasing prices of Books and Journals have posed difficulties for the library professionals. Many of the commercial LMS vendors charges a hefty amount for the AMC (Annual Maintenance Contract) and they still lacks in providing proper support for installation/re-installation of the software, solving any issues while using the software, upgrade of the software, providing new features of the software, import/export/migration of data in standard library format for future preservation, easy document creation manuals, data entry support with library standards (such as MARC-21, AACR-II etc.), interoperability support for data exchange between libraries, email server support, multilingual support etc. (Barve, Sunita and Dahibhate, N. B., 2012).

Above mentioned issues are not properly handled by the commercial vendors and OSS is the best solution for this. A very important factor in the adoption of open source LMS product by libraries involves the role of commercial companies. Each of the LMS product is closely tied to commercial business that market, develop and support it (Breeding, Marshall, 2009). The general trend is that there is a lot of fear among library professional regarding OSS and hence the adoption is less, it is the software which one can modify, fix, add to and distribute to others. The benefits offered by open source ILS are numerous including having
the ability to create good software that works for you and for your library, all for while paying the fraction of cost that one might spend on proprietary software.

Types of Open Source Software (OSS) for Libraries

There are many types of OSS available for Libraries which the library professionals can use to offer the user new value added services while handling large volumes of library data. Many of the library professionals are either unaware of these software or due to insufficient technical knowledge they cannot implement these software in their organisations (Barve, Sunita and Dahibhate, N. N., 2012).

Among these are Library Management System (LMS) or Integrated Library System (ILS), Digital Library Software/Institutional Repository (IR), Content Management System (CMS), E-learning management software, and some other are there to name a few. In the present paper, some popular OSS are listed which are heavily used by different libraries. These software’s are regularly updated and they have a strong user community across the globe. Many of these software run on Linux as well as Windows operating system.

LIBRARY MANAGEMENT SYSTEM (LMS) OR INTEGRATED LIBRARY SYSTEM (ILS)

There are a range of open source Library Management System (LMS) available, out of these very few updated/ upgraded regularly and has large user base. We will take overview of most widely used open source LMS only. Koha, Evergreen, OPALS, Invenio, Senayan Library Management System, NewGenLib, E-Granth alaya (not OSS but available free after filling form), ABC D, Glibms (not updated after 2002), Emilda (not updated after 2005), OpenBiblio (not updated after 2008), are some of the software available free to end users for library automation (Barve, Sunita and Dahibhate, N. N., 2012).

Koha (http://koha-community.org/)

Koha has been installed widely across the world and has a large user base from developed country to developing country hence it can be used in all types of libraries from academic to public to corporate library. Many count ries used Koha effectively to complete their automation and bring their OPACs on the web. Evergreen, Koha and OPALS LMS have become mainstream in the libraries of USA. Koha is a 100% open source ILS, and the updating of it takes place every fortnightly. It has a global community of its developers and has a large user base across the world (approximately more than 2000 installations). The work performed by developers are overlooked by people who in turn provide suggestion for improvement and accordingly changes are brought out.

Koha has all modules of library application such as acquisition, circulation, cataloguing, serial control, and reference service. It has support for Z39.50 sever, multilingual support, support for library standards such as MARC-21/UNIMARC, OAI-PMH, ISO 2709 as well as support several next generation/third generation OPAC features. In India many commercial vendors provide support for Koha, a list of support companies is provided on Koha website (Barve, Sunita and Dahibhate, N. N., 2012).
NewGenLib (http://www.verussolutions.biz/)

NewGenLib is an integrated open source LMS available under the most widely used free software license, GNU GPL. NewGenLib is the outcome of collaboration between specialist in library automation and software specialist. The software is a result of joint venture between a professional charitable trust, Kesavan Institute of Information and Knowledge Management (KIKM) and a fledgling software making company, which took four years to complete it. Unlike the other developed and developing consortia, India is still a way behind in using international metadata and interoperability standards (e.g., MARC-21, Dublin Core, OAI-PMH) and due to this sharing of metadata and building of union catalogue and networking has not become possible to maximum extent. Due to the fact that libraries are not networked and thus they cannot share bibliographic data and full text resources among themselves, the need of software that would allow both library management and creation of institutional open access repositories increases (Khode, Subhash and Chandan, Sunil Singh, 2015).

Evergreen (http://evergreen-ils.org/)

Evergreen ILS is another option when researching for open source ILS option. The Evergreen project has developed an open ILS which is used by more than 1000 libraries around the world. The software also known by the name Evergreen is developed to offer a public catalogue interface as well as to manage back of house operation such as circulation (checkout and check-ins), acquisition of library materials and (in particular in case of Evergreen) sharing resources among group of libraries (“Evergreen ILS”, 2015).

The Evergreen project was initiated by Georgia Public Library System (GPLS) in 2006 to serve their need for a scalable catalogue shared by (as of now) more than 275 public libraries in the state of Georgia. After Evergreen was released, it has since been adopted by a number of libraries in the USA and Canada as well as various individual libraries and has now started being adopted outside the libraries of North America. Evergreen was developed by the Georgia Public Library System (GPLS) to support the PINES (Public Information Network for Electronic Services) consortium. The development work began in June 2004 when state librarian Lamar Veach announced in a letter addressed to all after reviewing option available, GPLS decided to develop its own library automation system. GPLS was confident of developing a system, customized to fit its need better at a lower cost than the fees currently being paid.

Development priorities for Evergreen are that it be stable, robust, flexible, secure, and user-friendly. Evergreen modules include Circulation, Cataloguing, OPAC, Acquisition, Statistical Reporting, SIP 2.0 support, Search/Retrieve via URL and Z39.50 server (Rahwa, Sukhwinder, 2013).

OPALS (http://help.opalsinfo.net/)

Open Source Automated Library System (OPALS) is a powerful cooperatively developed, web-based open source programme. This alternative technology provides internet access to information databases, library collections and digital archives. OPALS is a reliable open source community that can be trusted. OPALS have not yet found wide adoption outside
USA and Canada. OPALS appeal to primary to K-12 school libraries. Mediaflex is providing commercial support of OPALS in USA. OPALS demo site is available for access on above mentioned website and the site provides access to all of OPALS functions. We can circulate items, uploads records, import records with Z39.50 client directly into demo site, view reports and more (“About OPALS”, 2015).

Kuali OLE (http://www.kuali.org/ole)

The Kuali OLE (Open Library Environment) is a LMS software application development project sponsored by the funding from The Andrew W. Mellon Foundation, Indiana University, Duke University, Lehigh University, North Carolina State University, the University of Chicago, the University of Florida, the University of Maryland, the University of Michigan, and the University of Pennsylvania. OLE intend to build an extensible services-driven library management system managed by a community source functional software ethic and driven by functional specification from investing libraries. The software will be open and free for use by any institutions. Project development breaks down into four phases:

- Community Phase: 2008-2009
- Design Phase: 2009-2010
- Build Phase: 2010-2012
- Sustainability Phase/Maintenance Phase: 2012-2022

Implementation Schedule

The Kuali OLE is freely available to any community under the Open Source Initiative’s Educational Community License V 2.0. Potential web based discovery layer resources considered were: Project Blacklight, VuFind, Librarian. All three take advantage of modern open source tool such as Apache Lucene and Apache Solr (“Community Sourced Kuali OLE Serves Libraries”, 2015).

DIGITAL LIBRARY SOFTWARE

Digital libraries (DLs)/Institutional Repositories (IRs)/digital archives are been discussed heavily since 2000. Under open source license terms and conditional range of digital library software’s are available especially CDS-Invenio, DoKS, DSpace, Eprints, Fedora, Greenstone, MyCoRe, Hydra, Islandora, and Digital Commons etc. Each of the above
mentioned software has its merits and demerits. DSpace and EPrints are the most popular software used across world for building digital repositories as per the statistics from Registry of Open Access Repositories (ROAR)/ Directory of Open Access Repositories (DOAR).

**DSpace** ([http://dspace.org](http://dspace.org))

DSpace has been designed and developed by Massachusetts Institute of Technology (MIT) and Hewlett Packard (HP). DSpace was designed as an open source software so as to enable the institutional output to be maintained and preserved the intellectual output of any organization over the web. Institutional Repository (IR) enable long term preservation of intellectual asset of any organization (Randhwa, Sukhwinder, 2009). DSpace supports the facility to store, index, preserve, and redistribute the intellectual output of any organization in digital format. DSpace offers the ability to create communities, sub-communities, set alerts, etc. It can be installed on Linux, UNIX and Windows platforms. DSpace is available under BSD license. It permits the users to add any item in any format in text, audio, video and data. It indexes work, so users can search and retrieve items. DSpace provides a way to manage the research materials and publications in a professionally maintained repository to give them greater visibility and accessibility over time (Khode, Subh ash and Chandel, Sun il Singh., 2015).

**E-Prints** ([http://www.eprints.org](http://www.eprints.org))

E-Print was developed at the University of Southampton, UK with the first version of the software publicly released in 2000. It is the first professional software compliant with OAI-PMH repositories, it has many features which resembles with Document Management System, but it is primarily used for institutional repositories and scientific journals. Thesis, Reports and multimedia, scientific data can be easily digitized in the E-Prints repositories. E-Print 3 is a major leap forward towards functionality, giving even more control and flexibility to repository managers, depositors, researchers and technical administrators. The latest version of E-Print: v3.3.10 is available for Debian/Ubuntu, Redhat/Fedora and Windows. In brief, E-Prints requires Apache (with mod_perl), MySQL and Perl with some extra modules (Khode, Subh ash and Chandel, Sunil Singh., 2015).

**Greenstone** ([http://www.greenstone.org](http://www.greenstone.org))

Greenstone Digital Library Software (GSDL) is a suite of software for building and distributing digital library collections. It offers a new way of organizing information and publishing it over the web. It is not a digital library but a tool for building digital libraries. GSDL is developed by the New Zealand digital library project at the University of Waikato, and developed and distributed in cooperation with UNESCO and Hum an Info NGO. It is available under the GNU General Public License. It is open source and it supports the most number of languages than any other OSS. The aim of the software is to empower users, particularly in universities, libraries, and other public service institutions, to build their own digital libraries. GSDL was developed in 2000, it is programmed using C++ and Perl and runs on all version of Windows, and Unix/Linux and Mac OS-X. The complete GSDL interface is available in English, French, Russian and Kazakh (Khode, Subh ash and Chandel, Sunil Singh., 2015).
Hydra (http://projecthydra.org/)

Hydra is free and open source software available under Apache 2 license. The Hydra project was conceived and executed as a collaborative, open source effort from its very beginning in 2008. Initially Hydra was a joint development project between Stanford University, the University of Virginia and the University of Hull in close collaboration with Fedora (now Fedora commons part of DuraSpace). Hydra is being used as the basis for number of institutional repositories (IRs) each of which contains a range of content types. The University of Hull has one such containing ETD, past examination papers, learning materials, journal articles, small dataset and more; the University of Virginia has another containing ETDs, journal articles and datasets. These IRs exploit the flexibility of Hydra to implement flexible workflows for deposit and flexible display to provide the end-user with different page layouts and contents depending on the type of material retrieved.

Northwestern University is using Hydra to develop its digital image library (DIL). As well as providing access to a collection of images, the Hydra head allows users to manipulate them (crop, rotate etc.) and to store the derivative in various ways – for instance to build up a particular personal collection to use in a lecture series.

The Rock and Roll Hall of Fame is using a hydra head to manage the administration and workflow required to develop a repository containing its large collection of historical video recordings. At present the majority of these are available to view only on the premises, but the museum has provided a screen cast showing how the process works. The Hydra community is driving force behind the development of a Fedora version 4 (“Hydra Project”, 2015).

**CONTENT MANAGEMENT SYSTEM (CMS)**

Library website maintenance is one of primary activity of any library, but creating website can be daunting. It requires a technical skills, which is not there in many library professionals. Hence open source content management system (CMS) is a solution over this. The CMS tool enables to create complex library website with a lot of new features. There are several free OSS available which are heavily used all over the world to maintain institutional web site hence same can be used for managing library website as well. The well-known among these software are Drupal, Plone, Joomla, Wordpress etc.

Plone is a difficult system to learn and install. Wordpress, Joomla, and Drupal are relatively easy to install and use. Among these Wordpress is easiest to learn and implement but can be used for small website management only (Barve, Sunita and Dahibhate, N. B., 2012).

Drupal (http://drupal.org)

Drupal is another web publishing option that allows an individual to easily publish, manage, and organize a wide variety of content on a website. Ten of thousands of people and organization have used Drupal to power score of different web sites, including community web portals, Discussion sites, corporate web site, Intranet applications, personal web site or blogs, E-commerce applications, Resource directories, Social Networking sites. Drupal supports several web 2.0 features, a library catalogue can also be created by importing MARC records into Drupal (Rahwa, Sukhwinder, 2008).
Wordpress (http://wordpress.org)

Wordpress started as a quick, free, open-source blogging solution just a few years ago, today it is a viable option for building a website from scratch. In addition to being free to use (and easy to install), the Wordpress community has exploded, with thousands of users and programmers creating custom themes and plug-ins to completely change the way the software looks and operates. The most important aspect of the software is its easy to use interface and content management system. With its visual rich editor, anyone can publish text and photos to the website. Other options include multiple authors (with separate log-ins), built in RSS (Real Simple Syndication) technology to keep subscribers updated, and a comment system that allows reader to interact with the site content. A nice way to connect with staff and patrons etc. (Randhwa, Sukhwinder, 2008).

Joomla (http://www.joomla.org)

Joomla is a free, open source software, available to anyone under the GPL license. Joomla is an award winning content management system (CMS), which enables you to build web site and powerful online applications. Many of its aspect including ease of use and extensibility, have made Joomla the most powerful web site software available. Joomla is used all over the world to power web sites of all shapes and sizes (“Joomla! The CMS Trusted by Millions for their Websites”, 2015). Joomla is written in PHP, uses Object Oriented Programming (OOP) technique (since version 1.5), and software design pattern, store data in a MySQL, MS SQL (since version 2.5), Postgre SQL (since version 3.0) database, and includes features such as page caching, RSS feeds, print able version of pages, news flashes, blog posts, search, and support for language internalization (“Joomla”, 2015).

E-Learning Management System

E-Learning management system (LMS) is a system used to deliver online education. Today, most LMS make extensive use of web and include features such as discussion forums, chats, journals, grading tools, and student tracking.

Moodle (http://moodle.org)

It is one of the most popular open source e-learning course management system (CMS), it is also known as learning management system or a virtual learning environment (VLE). It is a free web application that educators can use to create effective online learning sites. A single Moodle website possesses the capacity of hosting a large number of courses. Courses contain activities such as discussion forums, journals, quizzes, surveys, assignments, chats, and workshops. Moodle includes support for grading, file uploads, user logging and tracking, multimedia, email integration, and many other features, all comparable to those available in a proprietary LMS (Barve, Sunita and Dahibhate, N. B., 2012).
Conclusion

Open Source Software can let the libraries saving in time, money, and resources. Large number of librarians have started adoption of OSS in their libraries. But in the recent years and in coming years there will be an explosion of OSS of libraries. Decision regarding the choice for adoption needs to be taken carefully taking in view the factors like global community strength, upgradation, local commercial vendor support system etc.

References

Journal Article


Website Content and Address


Websites

Abstract
In the space of less than a decade, preservation metadata has evolved from a research topic to an integral part of best practice for the long-term stewardship of digital materials. The first edition of this report chronicled the evolution of preservation metadata from concept to standard, ending with the release of the PREMIS Data Dictionary. In second edition, this report focuses on new developments in preservation metadata made possible by the emergence of PREMIS as a de facto international standard. The report is intended for digital preservation practitioners interested in learning about the key developments in preservation metadata, especially as these developments concern the PREMIS Data Dictionary; the report will also be of interest to anyone seeking to learn more about the general topic of preservation metadata. The focus of work in preservation metadata has shifted from theory to practice; consequently, this report focuses on the key implementation topics that have emerged since the publication of the PREMIS Data Dictionary, including revisions of the Data Dictionary; community outreach; packaging (with a focus on METS), tools, PREMIS implementations in digital preservation systems, and implementation resources. The report also suggests some areas which in future work in preservation metadata should address.

Keywords
Digital preservation, Audio-visual preservation, Digital Metadata

Introduction
Digital preservation is the active management of digital content over time to ensure ongoing access. The National Digital Information Infrastructure and Preservation Program is implementing a national strategy to collect, preserve and make available significant digital content, especially information that is created in digital form only, for current and future generations.

Digital repositories are computer systems that at ingest, store, manage, preserve, and provide access to digital content for the long-term. This requires them to go beyond simple file or bitstream preservation. They must focus on preserving the information and not just the current file-based representation of this information. It is the actual information content of a document, data-set, or sound or video recording that should be preserved, not the
Microsoft Word file, the Excel spreadsheet, or the QuickTime movie. The latter represent the information content in a specific file format that will become obsolete in the future.

Preservation policies define how to manage digital assets in a repository to avert the risk of content loss. They specify, amongst other things, data storage requirements, preservation actions, and responsibilities. A preservation policy specifies digital preservation goals to ensure that:

- Digital content is within the physical control of the repository;
- Digital content can be uniquely and persistently identified and retrieved in the future; all information is available so that digital content can be understood by its designated user community;
- Significant characteristics of the digital assets are preserved even as data;
- Carriers or physical representation change;
- Physical media are cared for; digital objects remain renderable or executable;
- Digital objects remain whole and unimpaired and that it is clear how all the parts relate to each other;
- Digital objects are what they purport to be.

Digital Preservation and the Information Profession

As the field of digital preservation expands, so building a professional workforce and training becomes an important issue. This is the focus of a number of papers in the last few months. A briefing paper by the DPE explores the benefit of different learning technologies and e-learning for information professionals.

Digital Preservation Life-cycle

A number of articles address different aspects of the preservation lifecycle, from appraisal to ingest, to automatic metadata extraction. Life-cycle: An article in the International Journal of Digital Curation sets out the draft lifecycle model for the Digital Curation Centre. The model is generic and can be applied to any organization across the whole lifecycle, or at stages throughout it.

Digital Preservation Metadata

“All of these preservation functions depend on the availability of preservation metadata—information that describes the digital content in the repository to ensure its long-term accessibility. While the Open Archival Information System (OAIS) reference model defines a framework with a common vocabulary and provides a functional and information model for the preservation community, it does not define which specific metadata should be collected or how it should be implemented in order to support preservation goals”.

The specific metadata needed for long-term preservation falls into four categories based on basic preservation functional groupings:

Descriptive Metadata

Describes the intellectual entity through properties such as author and title, and supports
discovery and deliver y of digital content. It may also provide an historic context, by, for example, specifying which print-based material was the original source for a digital derivative (source provenance).

Structural metadata

Captures physical structural relationships, such as which image is embedded within which website, as well as logical structural relationships, such as which page follows which in a digitized book.

Technical metadata for physical files

includes technical information that applies to any file type, such as information about the software and hardware, on which the digital object can be rendered or executed, or checksums and digital signatures to ensure fixity and authenticity. It also includes content type-specific technical information, such as image width for an image or elapsed time for an audio file.

Administrative metadata

“Includes provenance information of who has cared for the digital object and what preservation actions have been performed on it, as well as rights and permission information that specifies, for example, access to the digital object, including which preservation actions are permissible. Even through all four categories are essential for digital preservation, the latter category in particular is often referred to as Preservation Metadata. The entities that are described by semantic units are the digital objects themselves, both as abstract, intellectual entities and as physical realizations in the form of renderable or executable file sets. Semantic units can also describe a digital object’s hardware, software, and societal environments; rights and permissions attached to them; software and human agents involved in the preservation process; and events that took place during the digital object’s life cycle.”

Combining digital preservation metadata specifications

In the early days of digital preservation, there were several uncoordinated efforts to define institutional specific sets of semantic units and metadata elements. These efforts were soon merged into a smaller number of coordinated international activities that aimed to define sharable preservation metadata specifications. This would ensure interoperability—the ability to exchange amongst institutions and to understand the digital object metadata and its digital content.

A complication was, however, the breadth of metadata needed to support the full range of digital preservation goals. Many years of expertise and effort had already gone into specifying metadata dictionaries or implementation specifications for subsets of the four categories listed above that are also used to support functions outside digital preservation. There was no point in trying to reproduce or outdo this effort. Additionally, it is not possible to define one set of metadata that applies equally to all content types or organization types. Archival records, manuscripts, and library records, for example, require different descriptive metadata; images, text-based documents, and software source code require
different technical metadata. Because of this, a number of metadata definition efforts have evolved, both in a content type—organization type—specific space and a preservation function space. Figure 1 illustrates this in a very simplified way. Several of these initiatives have reached the status of a standard or are de facto standards.

Descriptive Metadata

Descriptive metadata approaches have been well covered and thoroughly discussed beyond the digital preservation community, and we do not cover them further. This includes both general purpose approaches, such as Dublin Core, and library community approaches, such as MODS and MARC.

Preservation Specific Metadata

PREMIS (Preservation of metadata: Implementation Strategies) is one attempt at specifying the semantic units needed to support core preservation functions. Core preservation metadata is relevant to a wide range of digital preservation systems and contexts, and it is what “most working preservation repositories are likely to need to know” to preserve digital material over the long term. This includes administrative metadata, but also generic technical metadata that is shared by all content types. It permits the specification of structural relationships if this is relevant for preservation functions, but users may choose to instead use the structural relationships offered by their container metadata specifications, as discussed below.

PREMIS defines a common data model to encourage a shared way of thinking about and for organizing preservation metadata.

The semantic units that describe the entities in this data model are rigorously defined in PREMIS’s data dictionary. PREMIS supports specific implementations through guidelines for their management and use and puts an emphasis on enabling automated workflows. It makes, however, no assumptions about specific technology, architecture, content type, or preservation strategies. As a result, it is “technically neutral” and supports a wide range of implementation architectures. For example, metadata could be stored locally or in an external registry (such as a shared file format registry); it could be stored explicitly or known implicitly (e.g., all content in the repository are newspaper articles). PREMIS does not even specify whether a semantic unit has to be implemented through a single field or through more complex data structures. Nonetheless, the PREMIS Editorial Committee maintains an optional XML schema for the convenience of the community.

While PREMIS is very flexible about possible repository-internal implementations, in order to improve interoperability, it is more restrictive on cross-repository information package exchange.

LMER (Long-Term Preservation on Metadata For Electronic Resources) of the German National Library is an alternative solution to capturing preservation metadata. LMER was designed to meet the requirements of a specific project. Unlike PREMIS it is not a general model for long-term preservation metadata. It implies specific preservation strategies, such as file format migrations, and records detailed information to support this type of preservation action. It enables documenting the provenance of a digital object including tools, reasons, and relationships. As with PREMIS, it includes basic technical metadata,
such as checksums and format information. Content type-specific metadata can be embedded using additional schemas such as MIX or Text MD.

LMER’s process approach is more workflow oriented than the PREMIS event approach. Any modification to an object is interpreted as a planned process, whereas PREMIS events coincide with the planning that impacts the preserved objects.

**Significant Characteristics**

When preservation actions are performed on a digital object in its original environment, usually a new digital object is created which is rendered or executed in a new environment. For example, a Word file in its Microsoft rendering environment is migrated to a PDF file in an Adobe rendering environment. With most preservation actions, here is a risk that some characteristics of the original digital object will be lost or modified. In the example migration, one might lose original macros, editing histories, and a degree of interactivity not supported in PDF.

Significant characteristics reflect business requirements. They capture the characteristics of the original object and environment that need to be preserved by a preservation action. For example, one might wish to specify that for a newspaper collection all pages need to maintain their original margins in a content migration. This requirement guides decisions on which preservation actions should be selected. This specific requirement would, for example, exclude migrations which include cropping within the page edges.

**Metadata Containers**

Digital objects are abstract objects which represent the information entity that should be preserved, accessed, or managed. Metadata containers aggregate their descriptive, administrative, technical, and structural metadata, as well as their physical representations into a single serialization. Metadata Container Specifications: Since XML is human as well as machine readable, it is the preferred method for specifying metadata containers; it is self-descriptive. The container specifications, however, don’t specify a single XML schema containing the complete set of metadata elements. Rather, they are frameworks of high-level elements that define extension points where specific descriptive, administrative, technical, and structural metadata can be embedded. This specific metadata is captured in extension schemas that define the specific metadata elements. It may be physically embedded or reference externally stored metadata.

**Structural Metadata**

In the analog world, most physical objects are described by a non-hierarchical catalog record. Exceptionally, a catalog may capture the hierarchical containment of parts, such as articles within a serial issue. Digital objects are decomposed to a much finer level of granularity. Even a simple webpage is a complex object. It typically comprises an HTML file, as well as images, JavaScript, and style sheets. All are required to render the digital object. Additionally, relationships exist between webpages that form a network of objects, allowing users to navigate between them. Each digital object component can be addressed separately—either directly or by following the relationships between components. Their relationships
are captured through structural metadata to create one coherent digital object.

Physically, digital objects are represented through files or byte streams. One digital object may have multiple representations, such as a TIFF and an OCR'ed text representation of the same newspaper page. Structural metadata relates the abstract object to its physical representations.

The METS (Metadata Encoding and Transmission Standard) is a specification for exchanging and storing metadata independent of specific project needs. The only mandatory section in METS is the struct Map section. Digital objects can be described from different perspectives, resulting in different struct Map sections. The physical perspective may describe pages, columns, and text areas and their layout relative to each other. The logical perspective may describe sequences, such as the sequence of songs on a CD, or content alignment, such as the content alignment of a chapter in a book. These perspectives are captured in separate hierarchical tree structures. Objects in struct Map sections can be linked to each other. They can also be linked to the file section which describes the corresponding files.

Files in the file section can be organized into one or more file groups. Files may be grouped according to user needs, for example by file format, image resolution, or the intended use of the file (preservation copy, access copy, thumbnail, etc.).

Every object defined in the struct Map section, as well as every file, may have descriptive or administrative metadata (divided into provenance, source, and technical or rights metadata within METS) describing them outside the struct Map or file section. Even though METS endorses the use of particular extension schemas, it supports every kind of well-formed XML in these sections. METS uses XML’s ID/IDREF linking mechanism for attaching the metadata section to the object. Figure 4 illustrates the METS architecture.

Part 2 of this standard is the digital Item declaration language (DIDL). DIDL uses five basic concepts for describing complex digital objects. The semantics of these concepts are more abstract than the sections in METS. Containers can group container items and/or items. An item can group further items or components. A component groups resources. All resources within the same component are regarded as semantically equivalent. DIDL defines a resource as an individual byte stream that contains the actual content of an item and can either be embedded into the DIDL description or referenced.

DIDL only defines the structure of a complex object. Any additional descriptive or administrative metadata about a container, item, or component must be stored in a metadata wrapper, called a descriptor. The MPEG-21 Rights Expression Language (REL) in Part 5 and the Digital Item Identification Language (DII) in Part 3 of the standard can be used to capture some of this metadata. Additionally, a descriptor or may contain any non-MPEG-21 XML structure to capture preservation metadata.

MPEG-21 DIDL defines a conceptual data model and its representation as an XML byte stream. The container, item, component, resource, and descriptor objects are represented as nested XML elements. Therefore, an ID/IDREF linking mechanism for linking different sections is, unlike in METS, not necessary. Unlike METS, DIDL provides few attributes for capturing technical or descriptive metadata. Figure 5 illustrates the MPEG-21 DIDL architecture. 

**Content Type-Specific Technical Metadata:** Technical metadata may be specific to a content type, such as raster or vector image, sound, video, text, spreadsheet, or e-mail. Some content type-specific metadata is essential for rendering a digital object representation. For example, it is essential to know the sample rate of digital audio data, or the width, height, and color depth of an image.
Some file formats enable the capture of technical, and other, metadata within their files, which has the advantage of keeping the files self-descriptive. However, by extracting and storing metadata explicitly we may also benefit. Separate metadata can:

- be kept small and processed efficiently;
- be distributed separately;
- have different access rights and licensing arrangements than the content;
- help to account for the whole life cycle of digital objects;
- have its description standardized across file formats; and
- be managed and preserved by preservation systems.

The ANSI/NISO Z39.87 standard, Data Dictionary – Technical Metadata for Digital Still Images, defines semantic units to describe digital raster images. The standard does not prescribe a serialization. But, in partnership with NISO, the Library of Congress maintains an XML Schema called mIX (metadata for Images in Xml Schema) that is widely used by content creators and in the digital preservation community. Tools, such as JHOVE, are available to extract technical metadata from image files and export the metadata as MIX serialization.

Like the Z39.87 standard, MIX defines four sections of metadata:

1. **Basic Digital Object Information**: Basic non-content type-specific metadata such as file size, checksums, and format information.
2. **Basic Image Information**: Metadata that is required to render an image, including the compression algorithm and the image dimensions.
3. **Image Capture Metadata**: Metadata about the image capturing process, such as the scanning device, settings, and software used in the process.
4. **Image Assessment Metadata**: Metadata important for maintaining the image quality. Information in this section is necessary to assess the accuracy of output. This includes colour information (such as white points and colour maps) and resolution information.

**Metadata Exchange**

Preserving digital content is a collaborative effort. Organizations which are running a preservation repository may want to share content with selected partners to provide distributed preservation solutions. These preservation solutions must exchange complex objects between heterogeneous preservation systems.

The **TIPR** (Towards Interoperable Preservation Repositories) project develops a prototype for distributing content between three different partners who are running technically heterogeneous repositories with distinct data models. The common transfer format for the information package is based on METS and PREMIS as defined in the TIPR Repository Exchange Package (RXP). In order to handle the different data models manifested in the complex objects from other partners, each repository must understand the other repository’s data model. The de facto standards METS and PREMIS proved to be flexible enough for transmitting the information packages between repositories.
Conclusion

This article introduced metadata for digital preservation and argued why it is needed. It outlined the space of different metadata specifications and alluded to the problems inherent in defining and combining a small, but comprehensive set of standards.

Currently, few metadata specifications contributing to digital assets’ long-term preservation are sanctioned by national or international standards bodies. Some, like PREMIS or METS, have the status of de facto standards with well-defined common processes for maintaining and updating them. While communities have a strong desire for long-lasting, stable metadata standards, they continue to evolve as the number of repository implementations and applications grows. Experience remains too limited to set a preservation metadata standard in stone.

In addition to strong growth in practical experience, research and technology development projects, such as the EU co-funded Planets project, have added substantially to our fundamental understanding of the preservation metadata space. They have brought us closer to ending digital preservation solutions that test the flow of preservation metadata across multiple digital preservation service. This combination of practical experience and renewed fundamental exploration contributes to a growing understanding of digital preservation metadata.

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Digital Divide in Academic Environment in Hyderabad City: A Study

DEEPAK KUMAR GOUD

Abstract

The Traditional societies are fast realizing the relevance of knowledge using computers Internet in day-to-day life, and are getting converted into knowledge driven societies. Knowledge-drive societies are giving rise to knowledge using computer and telecommunication network. The concept of digital divide grows more complex as the phrase becomes shorthand for every conceivable disparity relating to online access. India is one of the developing countries in the world. With the second largest population, working towards uplifting the Socio-economic conditions of its citizens of reducing the technology divide in India, information and networks across the country, Department of Telecommunication (DOT), Bharat Sanchar Nigam Limited (BSNL), Videsh Sachar Nigam Limited (VS NL), of the Government of India are responsible for providing maintaining facilities, this paper identify the nature of digital divide in academic libraries in Hyderabad City.

Introduction

The Traditional societies are fast realizing the relevance of knowledge using computers Internet in day-to-day life, and are getting converted into knowledge driven societies. Knowledge-drive societies are giving rise to knowledge using computer and telecommunication network. This being a global phenomena, societies that have less access to knowledge are less privileged of the societies that have access to knowledge become privilege of advanced. Among the societies, individuals with poor access to computer knowledge remain backward, regions either remote in population remain backward owing to lack of knowledge.

There are several factors that inhibit people from using knowledge and that is why they become less advantaged and they remain poor, in all respect. Some of the factors that influence people to resist change include:

- Lack of Literacy
- Lack of Computer Knowledge
- Lack of Internet access
- Lack of access to necessary Information.

The concept of digital divide grows more complex as the phrase becomes shorthand and for every conceivable disparity relating to online access. The multi-dimensionality of the concept has been framed into three distinct aspects,
• Global divide—divergence of Internet
• Social divide—gap between information rich and information poor in each nation.
• Democratic divide—difference between those who do and those who do not use the new technologies to further political participation.

India is one of the developing countries in the world. With the second largest population, working towards uplifting the Socio-economic conditions of its citizens of reducing the technology divide in India, information and networks across the country. Department of Telecommunication (DOT), Bharat Sanchar Nigam Limited (BSNL), Videsh Sanchar Nigam Limited (VS NL), of the Government of India are responsible for providing of maintaining facilities. India has been able to achieve a moderate success in making computers operational in spite of various inadequacies of the infrastructure.

India in spite of being one of the nations most closely associated with the onward march of IT that has attained noteworthy success in software industry faces a huge digital divide. The Government of India has also taken many initiatives. However just a small proportion of educated mass has access to IT and the challenge is to make sure the vast majority 70% of population that lives in villages are not left behind. As such in many ways India has become a case study for global application in the area of bridging the digital divide. It is emerging as a laborator y for testing out new technologies and business models to narrow the divide between urban and rural people in a developing economy. The paper attempts to identify the nature and extent of digital divide in academic environment in Hyderabad City.

Objectives of Study

• To identify the use of computer by the respondents in Hyderabad.
• To investigate the familiarity of Internet technology among respondents in Hyderabad.
• To know the nature of digital divide.
• To suggest the measures to bridge the digital divide among residents in Hyderabad.

Scope and Limitation

The scope of the present study confines itself to identify the nature of digital divide in a semi-urban environment of Hyderabad city. The study is based on the opinions expressed by them. The study is made by the survey method using a structured questionnaire.

Methodology

There are various methods such as survey, interview, scheduled, observation methods, etc. which are useful to study the problem. The present day study uses the survey method wherein a questionnaire has been developed as a tool to elicit the response from the people of Hyderabad. The questionnaire has been devised keeping in view the objectives of this study. The questionnaire consisted four parts, first part elicits general information, second part deals with computer knowledge, third part with use of Internet and fourth part deals with searching skills.

A questionnaire method has been adopted for collecting data from respondents of
Hyderabad.

A total of 150 questionnaires will be distributed among respondents in Hyderabad and out of which 125 (80%) duly filled in were collected.

Study of population

The study population comprises of Students, Doctors, Lawyers, teaching faculty, Business and government or private or corporate employees.

Global Digital Divide versus the Digital Divide

The “global digital divide” is distinguishable from the “digital divide”, a phenomenon wherein the rich get richer and the poor get poorer, at least with respect to technology, as the gap between the technological haves and have-nots widens. The concept of the digital divide was originally popularized with regard to the disparity in Internet access between rural and urban areas of the United States of America.

Unlike the case in many classical economic analyses of income disparity, there is no claim in this case that the developed nations’ advances in information and communication technologies (ICT) have fed off the labour or resources of developing nations. Conversely, there is generally no claim that developing nations are faring absolutely worse because developed nations are doing better.

Fig 1. Global Digital Divide

It is clear that developed nations with the resources to invest in and develop ICT infrastructure are reaping enormous benefits from the information age, while developing nations are trailing along at a much slower pace. This difference in rates of technological progress is widening the economic disparity between the most developed nations of the world (primarily Canada, the United States, Japan, Western Europe and Australasia and the underdeveloped and developing ones (primarily Latin America, Africa, and Southeast Asia),
thus creating a digital (that is, digitally fostered) divide. This global divide is often characterized as falling along what is sometimes called the *north-south divide* of “northern” wealthier nations and “southern” poorer ones.

**Summary of Findings**

The summaries of findings of the study are:

- Majority of the respondents are in the age group between 18 and 30 years (71.7%).
- The respondents covered in the study are Male respondents accounting to (75.7%).
- Majority of the study population possess P.G. Degree/Masters Degree accounting to (96.00%).
- Majority of the study population covered in the study are student community (52.63%).
- Majority of the respondents are having Computer at home (84.2%).
- Majority of the respondents are Computer literate (88.2%).
- Majority of the study populations are Computer literate (88.2%).
- Majority of the respondents use Computers daily (61.2%).
- Majority of the respondents have undergone training in using Computer technology (58.6%).
- Majority of population are have computer skills are (59.2%).
- Majority of the respondents are having access to Internet facility (84.2%).
- Majority of the respondents are having access to the Internet facility at home (38.8%).
- Majority of the respondents are using Internet facility 1-4 years (45.4%).
- More than half of the respondent have rated ability to use Internet as average (64.50%).
- That (44.1%) of the respondent have undergone formal training in Internet access by registering at private computer centre.
- The familiarity of Internet related terms were asked to the respondent and presented in table 15. It is found that (73.7%).
- That the main purpose of using Internet by respondent is for E-mail (80.3%).
- Different types of information sources accessed by respondent is shown table 17 Books (7.4%).
- Among the different types of information resources available on the Internet, Subject information (69.1%).
- Among the various Internet services, it is found from the table that (44.1%).
- As indicate earlier table, E-mail www are the two important services used by the respondent. As a result, the respondent as a result, the respondent describe instruct as an effective communication tool (51.3%).
- More than half of the respondent have rated their ability are good towards using Internet technology (50.7%).
- It is found that (69.7%) of the respondent search information on the internet by browsing the websites.
- The major problems faced by the respondents in surfing the internet are getting connected to (38.80% some extent) and (19.10% full extent).
- State of Internet technology to support their academic and research activities and only (11.20%).
The respondent are of the opinion that internet is not going to replaced traditional library and future (67.10%)

The major reason for not using internet is because of lack of internet facility (5.9%)

Conclusion

The results of the study have implications for the effective implementation of programmes aimed at bridging the digital divide. With regard to the use of Internet four groups can be identified.

1. Interested who can afford to have Internet at their home.
2. Interested who cannot afford to have Internet at their home.
3. Disinterested who can afford to have Internet at their home.
4. Disinterested who cannot afford to have Internet at their home.

A reduction in the divide among the two types of “Disinterested” groups is a long term objective and is beyond the scope of the present paper. The interested who can afford to have Internet at their home, prefer to access Internet at their respective workplaces followed by cyber café rather than accessing it at their home. Because they feel that monthly Internet accessing charges are represents expenditure whereas learning computer is considered as an asset. It is not their primary way of communication and as such, has not become their part and parcel of life yet, as phone, vehicle and mobile have. There is a limited use of Internet. They have realized the great potentiality of Internet. They prefer Internet only when there is not choice. For example, to know the results of various examinations like SSC, PUC they prefer Internet, but not for reading newspapers and also not for viewing TV soaps. This is an indication to the fact that a kind of technological culture is missing. This needs to be awakened or rekindled.

As the Indian middle class seems to find its own way of responding to its changing needs from time to time, those interested and who cannot afford to have Internet at their home are depending on cyber café. Cyber café located in various parts of the city are the major centers that are providing the Internet based services and training at least to the literate, computer savvy urban youth who can afford to pay. Though few government departments, banks, and the like have Internet, access is restricted to its workforce.

By offering the citizens the chance to use technology to improve their learning, skills and understanding of the work, they will be in a better position to address this enormous challenge. But the position of public libraries and school libraries in India is not encouraging. With its rapid strides information technology (IT) has made inroads into several areas. It is ironical, however, that the benefits of IT are yet to have a major impact on a vital source of information in the state public libraries.

The department of public libraries has embarked upon a series of e-initiatives, most of which are confined to branches in Bangalore, with promises of a statewide network. Though efforts are on to extend the facility to other places in the state the public library, Hyderabad has not made any initiation in this regard. Libraries have always been in the forefront of efforts towards universal access to information and have willingly taken on such tasks given to them by Government. If public libraries are to reach out to the excluded mass they have to really move beyond passive preoccupations. Though the primary reason for the existence of public libraries is free provision of information, it is high time if public library...
Hyderabad starts providing Internet based services of course on a free (either nominal or cheaper i.e., lesser than the charged incurred at cyber café). At least those “interested but cannot afford” will make use of the facility and to that extent the divide is minimized. The public library has to work with their funding providers and need to be aware that at extent the divide is minimized. The public library has to work with their funding providers and need to be aware that the initiatives and ventures can only be achieved by partnering with business, suppliers, agencies and cultural institutions.

Hence it has to redefine its activities in order to initiate remedial measures and to rebuild its image. Because “public libraries are the ideal vehicle to provide... access and support, and to foster the spread of vital new technological skills among the population”. Of course there are many challenges—technological, infrastructural, financial and the biggest one is the slow and notorious bureaucratic system. It has to overcome all these things.

References
Institutional Data Management and Retrieval System

Deepak Singh; Jayvar Dhan & Hem Chan dra

Abstract

Research data shows high growth rates in terms of research and audit purposes they are economic assets that at the institutions are required to register and manage. The value of research increases significantly when they are managed, linked, searchable and reusable and they generate new types of research. In institutions every day new data are generated and previous data is updated so need to plan data management system. The rapid developments of the information people find information more and more useful and need it every more than the past. Owning to the massive data there is a huge challenge to the data storage technology. So how to save so many data and how to find data as fast as possible become the key point.

Keywords

Data Management, Data Storage, Retrieval System, Types of File Format

Introduction

All electronic data considered of institutional value should be stored onto secure storage media on a regular basis. Each Institution should implement an institutional data management programme and policy which recommended institutional data management, storage, process and retrieval. Institutional data is defined as specific data necessary for the conduct of the organizations. Generally, commercially-available applications and operating systems are not considered institutional data.

Off-site location is defined as a location where backup media can be stored that at the computer servers and other systems being backed up reside.

Why need a Data Management

Institutional data management need day to day record keeping, Retrieval, Indexing and File insertion, Security of Confidential data, Tracking and Storing Information, Consultancy and Benchmarking, Institutional based access, Data Sharing or Publishing and Data Synchronization.
Institutional Data Management Plan

<table>
<thead>
<tr>
<th>Institutional Data Plan</th>
<th>Support</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Access to Database and Archives</td>
<td>• Training of Researcher and Staff Members</td>
<td>• All research data kept in according to the file format</td>
</tr>
<tr>
<td>• Data Sharing and Re-use of Data</td>
<td>• All Staff given to Clarify our Research data in a Comm on Files Format</td>
<td>• Daily update the data if any changes in past data</td>
</tr>
<tr>
<td>• Records Management</td>
<td>• If staff change our data keep update to files and format</td>
<td>• Addressing Data</td>
</tr>
</tbody>
</table>

Format of Institutional Data

The Institutional Data (information) may be stored in one of the following file format.

Types of Comm on Files format

1. Text File
2. Data File
3. Audio Files
4. E-Book Files
5. 3D Image Files
6. Raster Image Files
7. Vector Image Files
8. Camera Image Files
9. Page Layout Files
10. Spreadsheet Files
11. Database File
12. Executable Files
13. Game Files
14. CAD Files
15. GIS Files
16. Web Files
17. Plugin Files
18. Font Files
19. System Files
20. Setting Files
21. Encoded Files
22. Compressed Files
23. Disk Image Files
24. Developer Files
25. Backup Files
26. Misc. Files

Data Management design and Storage System

Some of the Key points to design the Data Management System:

• Ability to Sort and Search
• Consistency
• Ability to Update records

Institutional Data Collection Design and Storage

![Diagram of File Type and Extension]

- **Project Name/Number**
- **File Type**
  - D = Data
  - G = Graph
  - L = Letter
  - P = Proposal
  - MD = Miscellaneous Data
- **File Extension**
Techniques of Institutional Data Retrieval

The following are some of the techniques for retrieving or recalling stored data in institutional industry.

- All Research Data Provide Unique Code
- Server Management working on Unique Code
- Label e.g. alphabetically or numerically
- Projection
- Graphical representation etc.

The following graphical representation denote the way easily how to storage and management of institutional data and how to retrieve for the researchers.

Flowchart/Frame work on Planning, Managing and development of Data Backup and Update Process
Conclusion

Institutional data management or document management systems that are supported by information technologies enable improvement of efficiency of business processes as well as cost savings, with additional ecology impact, of course.
This paper presents results about research in the field of benefits of Institutional data management, functionality and types of file formats of these systems.

References
5. Ann Arbor, MI. Inter-university Consortium for Political and Social Research (ICPSR), (2012).  
Abstract
This paper discusses the marketing of library products and information services in the present scenario. It discusses about the marketing concept of library and information services covering various topics. The present paper explores the discipline of marketing of library services as a new academic subject in library and information education focusing on the Indian experience. This paper also deals the important variables involved in marketing the products and services of academic libraries. The importance of the quality of service and a focus on the customer is emphasized. Though inadequate funding may affect delivery of services, the academic librarian should be motivated by this challenge to plan and implement a marketing strategy to ensure heavy patronage.

Keywords
Library and Information Services; Marketing in library and Information centre.

Introduction
Marketing has been defined and explained in many ways by different marketing authors. Though the definitions given by the American Marketing Association (AMA) and The Chartered Institute of Marketing (CIM) have been widely accepted over the years, but are redefined time and again. The National Association of Marketing Teachers, a predecessor of the AMA, adopted what seems to be the first official definition of marketing in 1935. “Marketing is the performance of business activities that direct the flow of goods and services from producer to consumers.” The AMA adopted the 1935 definition in 1948, and in 1960 when the AMA revisited the definition it was decided not to change it. This original definition stood for 50 years, until it was revised in 1985, as: “Marketing consists of individual and organizational activities that facilitate and expedite exchange relationships in a dynamic environment through the creation, servicing, distribution, promotion and pricing of goods, services, and ideas.” Again in 2004, the AMA the definition was revised to read: “Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders.”
Marketing concepts in Library Services

Philip Kotler, Marketing Guru has define marketing “as social and Managerial process by which individuals and groups obtain what they: need and want through creating, offering and exchanging product of value and others”. In view of the above definition, library activities are a team work or the efforts of group working in library. To attract more and more users to the library, library staff needs to extend promotion and cooperation to users and marketing their services. The basic purpose behind promotion is to educate the staffs, faculty members in how to use the library and its resources and also to upkeep their knowledge by providing information appended in various sources available in the library. Like Companies promotion and marketing concept, library promotion and marketing services are different. The primary purpose of marketing of company products is to increase sales and ultimately to gain the more profit from it. The libraries are non-profit organizations; it is a social organization and service centre.

Need of Library Marketing of Library Services

- To promote the use of available reading material in the library and create awareness among the users.
- To optimize the use of information within limited resources and manpower.
- Limited Budget for library needs to market services and generate funds for library.
- To improve the image of the library.
- Due to information explosion, readers require precise and correct information for their research and study.

Unless and until what is available in the library, how it would be accessible and disseminated to the users of the library. The users do not aware the resources available in the libraries. Nowadays libraries are investing huge amount to purchase reading material and subscription to periodicals and online databases to fulfil the needs of their students, faculty members and research scholars. Investing such amount for the resources, the usage of these resources should also increase. Libraries should think and work out the cost benefit analysis of this investment.

Therefore it is quite necessary to utilize the services provided by libraries and promote its use. There are several ways to promote the usage and marketing of services

- Organization of Information Literacy programmes on regular basis at various level.
- Organization of workshops/training programmes about awareness of resources available in the libraries and Information centres.
- Organization of Training programmes to library staff with modern technologies and expertise people.
- Attract the people by organizing book exhibitions of new books with the help of vendors or the material available in the library should be displayed at prominent place.

Plan for Libraries to Marketing of LIS

The special libraries and information centres have been reflected as social and non-profit...
service oriented organizations providing information to their members from a long time before. Their traditional functions include selection, acquisition, storage, processing, circulation as well as referral and reference functions and activities. Over a period of time, due to change in the nature of demands by users, libraries have extended their functions to include documentation and document delivery systems. The libraries have also been initiated to make them as profit making organizations providing effective information products and services to users. It may be noted that many functions in a library or information centre are back office functions. Only limited members of the staff interact with customers and that too, mostly at the initiative of the customers themselves. There would be hardly any library or information centre in India where there is a function/section called marketing.

A marketing plan provides the librarian or information manager with a blueprint for identifying and targeting opportunities and user groups and for the cost-effective supply of specific information products and services to the identified user groups. Marketing plan may be prepared for specific product(s) or service(s) as well as for the library or information centre as a whole. In preparing a marketing plan for a product or service, or for the library or information centre as an entity, the library staff must be prepared to go through several steps and processes.

**Table-1.** Five Laws and its Implementation to Marketing of LIS

<table>
<thead>
<tr>
<th>The law</th>
<th>Actions to be taken</th>
<th>Marketing implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books are for use</td>
<td>Optimum use of resources, facilities, and services.</td>
<td>Acquiring appropriate information material and ensuring sufficient resources and services are available for the use of users. Convenient location, effective signage, and longer opening hours; helping hands for using resources and services.</td>
</tr>
<tr>
<td>Every reader his/her book</td>
<td>Meeting users need satisfactorily</td>
<td>Collecting and interpreting information, understanding the needs of users, and matching with the organizational resources.</td>
</tr>
<tr>
<td>Every book its reader</td>
<td>Reaching out to users</td>
<td>Publicizing value and benefits, promotional campaign, advocacy, public relations, personal communication, etc.</td>
</tr>
<tr>
<td>Save the time of user</td>
<td>User benefits and preferences</td>
<td>Repackaging information into appropriate form, availability of information when they need. Ensuring quality of services and offerings.</td>
</tr>
<tr>
<td>Librarian is a growing organism</td>
<td>Adapting to future User needs</td>
<td>Mobilizing resources, dealing with uncertainty about future user needs, new services, new customer groups, new environment, etc.</td>
</tr>
</tbody>
</table>

According to Table-1 we can explain marketing implementations in library and information centres these concepts and strategy discusses belows:

**Marketing Use in Library and Information Centre**

There are four key business concepts that provide the basis for marketing thought and
action in the nonprofit environment which are considered (Shapiro, 1981):

1. The self-interest aspect of the transaction or exchange, in which both the buyer and the seller believe they are receiving greater value than they are giving up;
2. The marketing task, which stresses the importance of satisfying customer needs. However, the typical non-profit organization operates in a more complex manner than a profit-oriented organization. The non-profit organization has two constituencies: a client to whom to provide goods or services, and donors from whom it receives resources.
3. The marketing mix, the elements or tasks used in marketing, usually referred to as the four P's identified by McCarthy (Webber, 1999), i.e. product, price, promotion and place. Shapiro re-categorizes the four Ps for the purposes of a non-profit organization as advertising and product policies.

**Product (service):** Defining the characteristics (quality, design, reputation, credibility, authority) of library product or service to meet the needs of the customers (users).

**Price:** Deciding on a pricing strategy. If the library decides not to charge for a given service, it is useful to realize that this is still a pricing strategy. Identifying the total cost of the user is a part of the price element.

**Promotion:** This includes advertising, personal selling (e.g. attending exhibitions), sales promotions (e.g. special offers), and atmospherics (creating the right impression through the working environment). Public Relations is included within promotion by many marketing people.

**Place:** Looking at the location (e.g. library), distribution channel (where a service is delivered), geographical coverage, telecommunications, travels, etc. We can extend the number of P’s—the two, which are usually seen as useful additions for services (including information services) are:

**People:** The essential ingredient (staff/personnel) for providing effective information services among users. Good information services are not likely to be delivered by people who are unskilled or demotivated.

**Process:** The way in which the user gets hold of the service (e.g. the way in which a document or a search can be ordered). The library or information centre should get ready to provide information services for users in a convenient way (e.g. the help of information technology may be taken if need).

### Basic Steps followed in Marketing of LIS

Libraries and information centers of all types and sizes are faced with the need to market. Librarians/Library Managers and information professionals must learn to effectively market and advertise their services.

1. **Competition for Customers:** Libraries are part of a highly competitive service industry. Competition comes from mega-bookstores, online book dealers, consultants, the Internet, and individuals who feel they can go it alone. Libraries are no longer the only information show in town. Free web access to information is here to stay and non-library and fee access information providers won’t hesitate to market to library customers.
2. **Competition for resources**: Libraries of all types have to compete with other organisations or departments for funds. Public libraries have to vie for public monies that provide for their existence. Special libraries find their funding is frequently targeted during parent organisation budget cuts. Marketing library services benefits the bottom line.

3. **Maintain your relevance**: Libraries need to market themselves to remain connected with their communities and have some bearing on real-world issues and present-day events.

4. **Stop being taken for granted**: Libraries need to convey what is unique about the access and services they provide. Both customers and librarians cannot assume that libraries will always be available.

5. **Promote an updated image**: Librarians are not perceived as well-trained, technologically savvy information experts. Most customers do not see the demanding information management responsibilities of a librarian.

6. **Visibility**: Librarians are not on the radar screens of many people who think of themselves as information literate. People who are in positions to employ librarians are not reading much in their professional literature about a librarian’s value.

7. **Valuable community resource**: Libraries are and should be viewed as essential and valuable community resources. People need to be made aware of the services and products that are provided and their comparative value. Librarians should be the resource that at the local power structure goes to for information.

8. **Rising expectations**: Libraries expect recognition, attention, and appreciation for their individual information needs. Customers also have ever-changing needs and wants, which makes the library market as dynamic as retail markets. Marketing helps to create an environment in libraries that fosters customer consciousness among employees.

9. **Survival**: Libraries depend on the support of others for their existence. A library must communicate and work with its customers and governing/funding entities to provide information about what the library is doing and to enable the library to learn about the community it serves.

10. **Beneficial to library image**: Effective marketing can among other things: increase library funds, increase usage of services, educate customers and non-customers, change perceptions, and enhance the clout and reputation of the library and its staff (Steadley, 2003).

**Problems faced to Marketing of LIS**

Marketing is an exercise of identifying the needs, wants and demands of users and matching them with the design and development of new services and products. Within this context it involves the following activities:

- Knowing the different segments of users and their needs;
- Assessing the needs and demands of users;
- Developing and designing new products and services; and
- Assessing the strength and weakness of existing environment.

The situation in India however, does not present a good picture. Indian libraries in general
provide routine and traditional services. There is hardly any effort on the part of the librarians to identify the genuine needs of their users. The development and design of new products and services to meet the expressed needs are still quite rare. On the other hand libraries are often considered last in the allocation for financial assistance. The information facility unfortunately, is still seen as a luxury rather than a necessity.

Marketing of Library and Information Products

Libraries and other non-profit organizations have only recently become aware of the need to market their products and services. Library and information products and services are now being recognized as commodities that can be sold, exchanged, lent, and transmitted. Libraries rely on their host organizations for operational costs. To gain some self-sufficiency, university libraries think seriously about not only recovering the costs incurred but also making a profit through their services. Narayana (1991) points out that the “survival of a library depends among other things on its image in the minds of the users and the fund allocators. This image should be the outcome of the quality and effectiveness of the services, the ability to anticipate the desires and requirements of actual and potential users and their fulfilment. Marketing is the instrument through which these library objectives can be fulfilled. Vishwa Mohan, Srinivas, and Shakuntala (1996) observe that marketing is essential, because those who lack information may not even be aware of this need.

Information marketing by libraries in India is essential in order to:

- Promotion of the use of information resources.
- Create perception of need and thereby create demand.
- Ensure the optimum use of information.
- Improve the image and status of the libraries and librarians.
- Tackle the problems of rising costs of reading materials, journals, and databases.
- Cope with the information explosion.
- Introduce cutting-edge information technology systems in library services.
- Balance shrinking funds.
- Save libraries from devaluation.
- Save libraries from declining reader-support.
- Uphold the dictum that information is power.

Promotion/Advertisement of LIS

For effective marketing of LIS, libraries must promote its services through various forms of promotions so that library users are aware of new services being offered. Following are the strategies recommended for promoting of LIS for their optimum use by the users given below:

- Advertisement
- Advertisement Through TV and Radio
- Marketing Through Blogs
- Mobile Technology
- E-mail
- E-portal
• Articles in Newspapers and Magazines
• Articles in Scholarly Journals
• Instigations of New Users
• Production of Brochures
• Organising Exhibitions
• Participate in the Trade or Business Exhibition
• Group Discussions, Lectures and Conference/Seminars
• Production of Posters
• Telemarketing
• Newsletters
• Extension Services/Activities
• Librarian Tour
• Librarian Day/Week
• Librarian Bulletin/Mobile Library
• User Education Programmes

Conclusion

In the present era print and digital/electronic products and services must be made as an integral part of librarian and information services. Libraries and information centres that have introduced print and digital/electronic products and services should promote its use to the society. Libraries and information centres must have marketing strategies to connect libraries and communities through IT and services. Marketing strategies of print and digital/electronic products and services act as a driving force in achieving quality librarian and information centres services that meet information needs of the community. The modern librarian is now generally called an information market and the librarian user is a consumer of information. Information is a vital resource for research and development of any nation. Marketing is essential in making the proper planning, designing and use of such services and products for the better and optimal use of information. For quality marketing of print and digital/electronic products and services, it requires an integration of three marketing strategies, namely: forward marketing, internal marketing and reverse marketing. As librarians professionals we should be actively marketing and promoting our librarian and information services. The basic aim of marketing is to know and understand our users in order that the librarian is able to satisfy those needs in an effective way. A marketing plan is an essential tool which will enable us to focus our efforts. The ultimate aim of marketing here is “to provide the right information to the right user at the right time”.

Reference

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Are University Students Evaluating Web Contents?

Devendra Singh; Manoj K. Joshi

Abstract
Survey on evaluation of web contents among 150 students (response rate 84.67 per cent) at Post Graduate (PG) and Research Scholars (RS) level was conducted at Kurukshetra University. A short five point scale of 10 items – Web Contents Evaluation Scale (WCES) was prepared by the authors. T-test and Analysis of Variance are used for hypotheses testing. Results revealed that range of WCES scores varied from 15 to 41 and significant differences were observed between: class category (PG and RS); discipline; and students of various classes. Almost all of the participants had not received any training in this regard.

Keywords
Evaluation; Internet; Online Information; University Students; Web Contents

Introduction
Research in higher education has disclosed that reliance on Internet for academic information is rising and shifting towards it, than print based resources (Metzger, Flanagin & Zwarun, 2003; Liu, 2006; Shabani, Naderikharaji & Abedi, 2011; and many others). With increased access and availability, many traditional resources have become online and various others, born digital, also form part of the credible resources in electronic format. Brophy & Bawden (2005) investigated that the search engine Google can provide huge “coverage and accessibility” in finding information but “library systems are superior for quality of results” and both are required nowadays.

Globally, our country is the third major user of Internet. In the year 2014 (estimated), India accounted 17.50 percent of world’s total population and 8.33 percent world Internet users reside here (Internet Live Stats 2014a) and from 12th global position in the year 2001, India consistently ranks 3rd from 2011 onwards (Internet Live Stats 2014b).

After submitting its Presidential report on Information Literacy (IL) in the year 1989, the Association of College and Research Libraries – ACRL (2000) together with American Library Association (ALA) introduced Information Literacy Competency Standards for Higher Education in 2000 comprising five standards. The third IL standard reads as: “The information literate student evaluates information and its sources critically and incorporates
selected information into his or her knowledge base and value system” (ACRL 2000).

Hence, critical evaluation of information and the sources from where it came from is an important aspect with which higher education academicians are concerned with and rising Internet connectivity in our country led to this research for identifying web contents evaluation skills among university students.

Kurukshetra University: An Overview

Located in the state of Hariana, the Kurukshetra University, Kurukshetra (KUK) is the first university of the state. Its foundation stone was laid by the first President of our country – Dr. Rajendra Prasad in the year 1957. The war of Mahabharata was fought in the holy city of Kurukshetra and the origin of Bhagwad Gita is just 4 Kms. (at Jyotisar) away from this university. KUK is spread about 400 acres of land and is Grade A accredited university by National Assessment and Accreditation Council (NAAC), India. KUK is a premier institution in the field of higher education and it excels in sports also (Kurukshetra University, 2014). Apart from various documents and a huge fully air conditioned reading capacity for users, the Nehru Library also hosts a computer laboratorium with about 200 computers, which are in addition to the computers or laptops provided in respective departments, faculty members, girls hostels etc. To equip students with the latest Information and Communication Technology (ICT) infrastructure, KUK campus is well connected with wi-fi network of 54 Mbps. The university also provides orientation sessions for the use of subscribed electronic resources during the start of an academic session.

Review of Literature

With the increase in electronic resources, higher education faculty also encourages students to use web documents, however, in conjunction with print resources but seriously doubts evaluation of online information by students (Herri ng, 2001). This may be due to the fact that students prefer to use Internet and only the Internet and this too without evaluating the online information (Graham & Metaxas, 2003). It has been observed that expectations of the faculty also rise as students move from first year to Graduate level (Bur y, 2011) and students can apply different criteria to evaluate online and print based library documents (Head & Eisenberg, 2010).

Evaluation of web resources among 49 undergraduate (UG) students was done by Scholz-Crane (1998) by forming two groups – criteria (28 students) and essay group (21 students). The criteria group was provided with a criterion for evaluation while the essay group was asked to evaluate online sources in a subjective manner. It was found that simply given a short criterion may not be sufficient in inculcating evaluation skills and more discussion in this respect is needed with students. Martin (2008) also observed that at one-shot training sessions for using traditional library resources are not sufficient.

A study on 578 teachers in six universities of Karnataka revealed that all faculty members were not aware of user education programmes and those who were aware, all may not participate (Walmiki, Ramakrishnan aegowda & Prithviraj, 2010). In another Indian study of 31 university faculty members (Devendra Singh, 2011) 54.83 per cent (N = 17) had never and 12.9 per cent (N = 4) rarely checked who wrote the web page while none of them had received any training to evaluate web contents.
Studies had shown that higher education students consider currency of information as the most important aspect while evaluating information (Vord, 2010; Korobili, Palliari & Christodoulou, 2009; Head & Eisenberg, 2010), however, this opinion of students can differ from faculty (Mark, 2011). It may be interesting to note that when students rely upon some other basis to evaluate online information then currency may not seem that much important (Bird, McInerney & Mohr, 2010). Devendra Singh & Joshi (2014) found significant difference (t-test) in the information evaluation skills among UG and PG students at Patiala University. The reviewed literature discussed some studies on the aspect of web contents evaluation and the present investigation is an effort in this regard to identify these competencies among students of Kurukshetra University.

**Objectives of the Study**

This study was carried out with the following objectives:

1. To find out how much university students are evaluating web contents; 2. To identify web contents evaluation skills among students; 3. To know how much students rely on online information; and 4. To find out whether students had received any training to evaluate web contents.

**Research Hypotheses**

To achieve the objectives, the following null hypotheses were formulated to be tested:

1. There is no difference between Post Graduate (PG) students and Research Scholars (RS) in web contents evaluation skills; 2. There is no difference between male and female students in web contents evaluation skills; 3. There is no difference between the students of various disciplines of Sciences, Social Sciences and Arts/Humanities in web contents evaluation skills; and 4. There is no difference between students of various classes in web contents evaluation skills.

**Research Design and Method**

University students were surveyed with written questionnaires during the month of November 2014. **Statistical Package for the Social Sciences** (SPSS 12.0) was used to analyze the data. 150 questionnaires were distributed to the students but only 127 were returned and found useful for data analysis. Hence, response rate for this study was 84.67 per cent.

**Participants**

Table 1 shows class, gender and discipline-wise number of students. Out of total 127, there were 72 students of the Post Graduate (PG) class and 55 Research Scholars (RS). In all, there were 71 male and 56 female students. 44 students were studying in the discipline of Sciences, 54 in Social Sciences, and 29 in Arts/Humanities. Figure 1 further describes the
gender and class-wise details of participants, for example, PG-II year students comprised 13 male and 15 female students.

**Table-1.** Gender and Discipline of Participants

<table>
<thead>
<tr>
<th>Class Category</th>
<th>Gender</th>
<th>PG No. (%age)</th>
<th>RS No. (%age)</th>
<th>Total No. (%age)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>35 (48.6)</td>
<td>36 (65.5)</td>
<td>71 (55.9)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37 (51.4)</td>
<td>19 (34.5)</td>
<td>56 (44.1)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td><strong>72 (100.0)</strong></td>
<td><strong>55 (100.0)</strong></td>
<td><strong>127 (100.0)</strong></td>
</tr>
</tbody>
</table>

**Discipline**

<table>
<thead>
<tr>
<th>Discipline</th>
<th>PG No. (%age)</th>
<th>RS No. (%age)</th>
<th>Total No. (%age)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sciences</td>
<td>33 (45.8)</td>
<td>11 (20.0)</td>
<td>44 (34.7)</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>25 (34.7)</td>
<td>29 (52.7)</td>
<td>54 (42.5)</td>
</tr>
<tr>
<td>Arts/Humanities</td>
<td>14 (19.5)</td>
<td>15 (27.3)</td>
<td>29 (22.8)</td>
</tr>
<tr>
<td>Total</td>
<td><strong>72 (100.0)</strong></td>
<td><strong>55 (100.0)</strong></td>
<td><strong>127 (100.0)</strong></td>
</tr>
</tbody>
</table>

**Fig. 1.** Gender and Class

**Research Instrument**

A short Web Contents Evaluation Scale (WCES) was prepared by the authors. WCES consists of 10 items and assesses web contents evaluation on a five point scale (Never; Rarely; Sometimes; Frequently; and Most Frequently) and it includes one negative item also (requires reverse coding for data analysis). Reliability of W CES was measured for 10 items with Cronbach’s alpha and it came to 0.727. A Cronbach alpha of more than 0.7 is generally considered satisfactory. Apart from preliminary questions, one open-ended question was also asked in the case of those students who had received any training to evaluate web contents.

**Assessment**

Assessment of web contents evaluation is done by summing the five point scale with ten
items, which comes to a maximum score of 50. W CES scores in various ranges may be interpreted at the range of 0 (zero) to 20 scores show much poor skills in web contents evaluation. Scores in the range of 21 to 30 reveal a low ability in these skills. The range of scores between 31 to 40 exhibits somehow satisfactory skills while scores in the range of 41 to 50 reveal good web contents evaluation skills among respondents. However, it may be noted that scores in the highest range may not reflect possession of excellent skills since W CES is a short instrument and these skills can change over a period of time.

Present action of Results and Formulae used for Hypotheses Testing

Results are presented with simple frequency count and percent age in this study. Since summation helps to perform parametric tests of hypotheses, hence, t-test and Analysis of Variance (ANOVA), as appropriate are used for hypotheses testing (two-tailed) at 95 percent significance level. Post Hoc testing for ANOVA is performed as per appropriate statistic. Further more, effect size, where applicable, is also reported. To find out effect size, the formula by Rosenthal 1991; and Rosnow & Rosenthal 2005 (both as cited in Field, 2009, p. 332) for converting t-value into Pearson’s correlation coefficient (r-value) is used and Cohen’s classification of 1988 & 1992 (as cited in Field, 2009, p. 57) being small, medium or large effect is used for its interpretation. Omega Squared (ω²) is used in the case of ANOVA and interpreted according to Kirk’s classification of 1996 (as cited in Field, 2009, p. 390) for the effect size being small, medium or large.

Data Analysis and Interpretation

Internet usage (Table 2) shows that about one-third (N = 42, 33.1 per cent) students browse it several times a day, followed by 37.8 per cent (48 students) at least once a day.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>PG No. (%age)</th>
<th>RS No. (%age)</th>
<th>Total No. (%age)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Several times a Day</td>
<td>24 (33.3)</td>
<td>18 (32.7)</td>
<td>42 (33.1)</td>
</tr>
<tr>
<td>Once Daily</td>
<td>22 (30.6)</td>
<td>26 (47.3)</td>
<td>48 (37.8)</td>
</tr>
<tr>
<td>2-3 times a Week</td>
<td>17 (23.6)</td>
<td>10 (18.2)</td>
<td>27 (21.3)</td>
</tr>
<tr>
<td>Weekly</td>
<td>9 (12.5)</td>
<td>1 (1.8)</td>
<td>10 (7.8)</td>
</tr>
<tr>
<td>Total</td>
<td>72 (100.0)</td>
<td>55 (100.0)</td>
<td>127 (100.0)</td>
</tr>
</tbody>
</table>

| Using since (mean years) | 3.25 years | 5.02 years   |
| Mode                    | 3 years    | 4 year       |
| Range                   | 1 to 10 years | 2 to 11 years | –          |
| One sitting (mean hours) | 2.25 hours | 2.42 hours   |
| Mode                    | 2 hours    | 2 hours      |
| Range                   | 1 to 7 hours | 1 to 5 hours | –          |
As per Table 2, 27 students (21.3 per cent) surf the Internet about 2-3 times in a week and only 10 students using it on a weekly basis. PG students had started using the Internet for the last 10 years at the maximum with an average of 3.25 years and maximum PG students were using it for the last 3 years (mode). Research scholars had started using the Internet for the last 2 to 11 years with an average of 5.02 years and mode of 4 years. The data further revealed that PG students spend 2.25 mean hours usually on the Internet in one sitting with mode of 2 hours while their range varied from 1 to 7 hours. Research scholars spend around 2.42 mean hours on Internet in the range of 1 to 5 hours (mode 2 hours).

Scores of Web Contents Evaluation Scale (W CES) among PG students and research scholars are provided in Table 3. None of the students scored less than 10. The minimum range was 15 scores. Just a single RS had a score of 41 (maximum range in this study). One-fourth (N = 18, 25.0 per cent) PG students scored between 11 to 20 and only one RS in this range. About half of the total participants (N = 67, 52.8 per cent) scored in the range of 21 to 30, which consisted more than half of the PG students (N = 41, 56.9 per cent) and nearly half of the RS (N = 26, 47.3 per cent). Out of 127, about one-third (N = 40, 31.5 per cent) students scored in the range of 31 to 40, comprising nearly one-fifth (N = 13, 18.1 per cent) PG students and about half of the research scholars (N = 27, 49.1 per cent).

Table 3. Class wise W CES Scores

<table>
<thead>
<tr>
<th>Class Category</th>
<th>PG No. (%age)</th>
<th>RS No. (%age)</th>
<th>Total No. (%age)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (Zero) to 10 scores</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>11 to 20 scores</td>
<td>18 (25.0)</td>
<td>1 (1.8)</td>
<td>19 (15.0)</td>
</tr>
<tr>
<td>21 to 30 scores</td>
<td>41 (56.9)</td>
<td>26 (47.3)</td>
<td>67 (52.8)</td>
</tr>
<tr>
<td>31 to 40 scores</td>
<td>13 (18.1)</td>
<td>27 (49.1)</td>
<td>40 (31.5)</td>
</tr>
<tr>
<td>41 to 50 scores</td>
<td>–</td>
<td>1 (1.8)</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td>Total</td>
<td>72 (100.0)</td>
<td>55 (100.0)</td>
<td>127 (100.0)</td>
</tr>
</tbody>
</table>

Range varied from 15 to 41 scores

Hypotheses Testing

Table 4 shows the testing of first (class category – PG and RS) and second hypotheses (gender). The first null hypothesis stands rejected because the mean difference of 5.20 between PG students and research scholars is significant with a t-value of – 5.246 at 125 degrees of freedom (df) with probability (p) < .05. The mean score of research scholars was 30.03 at 5.29 standard deviation (SD), which is higher than PG students (mean score 24.83 at 5.71 SD). Effect size in this case was 0.42 which is considered as a medium sized effect. However, no significant difference was observed in male and female students (second hypothesis) because the mean difference in their scores of web contents evaluation skills was just 0.64 with p > .05. Hence, the second null hypothesis is accepted as such.
Testing of third hypothesis is presented in Table 5. It was found that students studying in different disciplines significantly differed in their online evaluation skills because the overall ANOVA is significant with F value of 10.291 (2, 124 df) and p < .05. Hence, the third null hypothesis is rejected. Medium effect size was observed in this case with Omega Squared value of .13.

Further testing (post hoc) in this case (Table 5) revealed that students in the disciplines of Sciences & Social Sciences differed significantly with a mean difference of 3.89 with probability < .05. Mean score of students in the discipline of Sciences was 30.06 with 5.97 SD, which was higher than the students of Social Sciences (mean score 26.17 with 5.72 SD). Moreover, students in the discipline of Sciences also differed significantly with Arts/Hum anities (mean score 24.27 with 5.15 SD) on a mean difference of 5.79 and probability < .05. However, no significant difference was observed between the students in the disciplines of Social Sciences & Arts/Humanities because the mean difference was just 1.90 W CES scores only and probability > .05.

### Table 4: Class category and Gender-wise Hypotheses Testing

<table>
<thead>
<tr>
<th>Variable of Total WCES Scores</th>
<th>Variable (No.)</th>
<th>Mean Score</th>
<th>SD</th>
<th>Equality of Variances</th>
<th>MD</th>
<th>t-test value (df)</th>
<th>Sig. Value – p</th>
<th>Effect Size (r) (Type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>PG (72)</td>
<td>24.83</td>
<td>5.71</td>
<td>Assumed</td>
<td>5.20</td>
<td>- 5.246 (125)</td>
<td>.000</td>
<td>0.42 (Medium)</td>
</tr>
<tr>
<td>Category</td>
<td>RS (55)</td>
<td>30.03</td>
<td>5.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male (71)</td>
<td>26.80</td>
<td>5.82</td>
<td>Assumed</td>
<td>0.64</td>
<td>- 0.589 (125)</td>
<td>.557</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female (56)</td>
<td>27.44</td>
<td>6.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SD = Standard Deviation; MD = Mean Difference; df = Degrees of Freedom; Sig. Value = Probability (p)

### Table 5: Discipline-wise Hypotheses Testing of WCES Scores

<table>
<thead>
<tr>
<th>Variable (No.)</th>
<th>Mean Score</th>
<th>SD</th>
<th>Equality of Variances</th>
<th>F-test value (df)</th>
<th>Sig. Value – p</th>
<th>Effect Size (ω²) (Type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sciences</td>
<td>(44)</td>
<td>30.06</td>
<td>5.97</td>
<td>Assumed</td>
<td>10.291 (2, 124)</td>
<td>.000</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>(54)</td>
<td>26.17</td>
<td>5.72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts/Humanities</td>
<td>(29)</td>
<td>24.27</td>
<td>5.15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Post Hoc Testing (Hochberg Test) | Mean Difference | Sig. Value – p |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sciences &amp; Social Sciences</td>
<td>3.89</td>
<td>.003</td>
</tr>
<tr>
<td>Sciences &amp; Arts/Humanities</td>
<td>5.79</td>
<td>.000</td>
</tr>
<tr>
<td>Social Sciences &amp; Arts/Humanities</td>
<td>1.90</td>
<td>.387</td>
</tr>
</tbody>
</table>

SD = Standard Deviation; df = Degrees of Freedom; Sig. Value = Probability (p); ω² = Omega Squared
The fourth hypothesis was formulated to identify any significant difference between the students of different classes (PG – I; PG – II; M. Phil. and Ph.D.) in their online evaluation skills. Testing of class-wise difference is presented in Table 6. The overall ANOVA in this case was significant with F value of 16.154 (3, 123 df) and p < .05, thereby fourth null hypothesis got rejected. A large sized effect was measured in this case with Omega Squared value of .26.

To find out which individual classes significantly differed from other ones, post hoc testing was also performed (Table 6). The mean score of W CES among various classes was 25.02 for PG – I year stud ents (SD 5.80); 24.53 for PG – II year stud ents (SD 5.67); 25.64 for M. Phil. scholars (SD 3.51); and 32.00 for Ph.D. scholars (SD 4.76). It was found that the mean score of Ph.D. scholars differed significantly with rest of the classes and higher than: PG – I year stud ents (mean difference = 6.98, p < .05); PG – II year stud ents (mean difference = 7.47, p < .05); and M. Phil. scholars (mean difference = 6.36, p < .05). However, no significant difference was observed between the stud ents of: PG – I & PG – II year stud ents; PG – I year stud ents & M. Phil. scholars; PG – II stud ents and M. Phil. scholars.

Table 6. Class-wise Hypotheses Testing of W CES Scores

<table>
<thead>
<tr>
<th>Variable (No.)</th>
<th>Mean Score</th>
<th>SD</th>
<th>Equality of Variances</th>
<th>F-test value (df)</th>
<th>Sig. Value - p</th>
<th>Effect Size (ω²) (Type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG – I (44)</td>
<td>25.02</td>
<td>5.80</td>
<td>Assumed</td>
<td>16.154 (3, 123)</td>
<td>.000</td>
<td>.26 (Large)</td>
</tr>
<tr>
<td>PG – II (28)</td>
<td>24.53</td>
<td>5.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.Phil. (17)</td>
<td>25.64</td>
<td>3.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D. (38)</td>
<td>32.00</td>
<td>4.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Post Hoc Testing [Hochberg Test] | Mean Difference | Sig. Value - p |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PG – I &amp; PG - II</td>
<td>0.49</td>
<td>.999</td>
</tr>
<tr>
<td>PG – I &amp; M. Phil.</td>
<td>0.62</td>
<td>.999</td>
</tr>
<tr>
<td>PG – I &amp; Ph.D.</td>
<td>6.98</td>
<td>.000</td>
</tr>
<tr>
<td>PG – II &amp; M. Phil.</td>
<td>1.11</td>
<td>.982</td>
</tr>
<tr>
<td>PG – II &amp; Ph.D.</td>
<td>7.47</td>
<td>.000</td>
</tr>
<tr>
<td>M. Phil. &amp; Ph.D.</td>
<td>6.36</td>
<td>.000</td>
</tr>
</tbody>
</table>

SD = Standard Deviation; df= Degrees of Freedom; Sig. Value= Probability (p); ω² = Omega Squared

Table 7 shows that how students feel about online information’s authenticity. 15 (11.8 per cent) respondents believed online content is authentic up to 25 per cent. Participants considering web contents to be authentic in the range of 25 to 50 per cent were 43 (33.9 per cent), between 50 to 75 per cent were 47 (37.0 per cent) and from 75 to 100 per cent were 22 (17.3 per cent).
### Table-7. How much Online Content is Authentic

<table>
<thead>
<tr>
<th>Authenticity</th>
<th>Class Category</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>PG</strong></td>
<td>(%age)</td>
<td><strong>RS</strong></td>
<td>(%age)</td>
<td><strong>Total</strong></td>
<td>(%age)</td>
<td></td>
</tr>
<tr>
<td>0 to 25 per cent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>(13.9)</td>
<td>5</td>
<td>(9.1)</td>
<td>15</td>
<td>(11.8)</td>
<td></td>
</tr>
<tr>
<td>25 to 50 per cent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>(34.7)</td>
<td>18</td>
<td>(32.7)</td>
<td>43</td>
<td>(33.9)</td>
<td></td>
</tr>
<tr>
<td>50 to 75 per cent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>23</td>
<td>(31.9)</td>
<td>24</td>
<td>(43.6)</td>
<td>47</td>
<td>(37.0)</td>
<td></td>
</tr>
<tr>
<td>75 to 100 per cent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>(19.5)</td>
<td>8</td>
<td>(14.6)</td>
<td>22</td>
<td>(17.3)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>72</strong></td>
<td>(100.0)</td>
<td><strong>55</strong></td>
<td>(100.0)</td>
<td><strong>127</strong></td>
<td>(100.0)</td>
<td></td>
</tr>
</tbody>
</table>

Table 8 reveals that almost all (120 out of 127, 94.5 per cent) students had not received any training to evaluate web contents. The 3 out 7 participants who had received such training were research scholars of Library and Information Science (LIS) while rest 4 students did not mention from where they had received any training to evaluate online information. Surprisingly, 54 out of 127 (42.5 per cent) felt no need for training in this regard by the university comprising 34 (47.2 per cent) PG students and 20 (36.4 per cent) research scholars.

### Table-8. Training to Evaluate Web Contents

<table>
<thead>
<tr>
<th>Training Received</th>
<th>Class Category</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>PG</strong></td>
<td>(%age)</td>
<td><strong>RS</strong></td>
<td>(%age)</td>
<td><strong>Total</strong></td>
<td>(%age)</td>
<td></td>
</tr>
<tr>
<td>Yes*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>(1.4)</td>
<td>6</td>
<td>(10.9)</td>
<td>7</td>
<td>(5.5)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>71</td>
<td>(98.6)</td>
<td>49</td>
<td>(89.1)</td>
<td><strong>120</strong></td>
<td>(94.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>72</strong></td>
<td>(100.0)</td>
<td><strong>55</strong></td>
<td>(100.0)</td>
<td><strong>127</strong></td>
<td>(100.0)</td>
<td></td>
</tr>
</tbody>
</table>

7 Yes* = 3 RS of LIS; 3 RS and 1 PG not mentioned from where

<table>
<thead>
<tr>
<th>Should University Provide Training</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>(52.8)</td>
<td>35</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>(47.2)</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>72</strong></td>
<td>(100.0)</td>
</tr>
</tbody>
</table>

### Discussion

Overall low W CES scores (Table 3) indicate much lower ability in web contents evaluation skills, especially among PG students. 15.0 per cent (N = 19) and 52.8 per cent (N = 67) students scored up to 30 only. Just 13 (18.1 per cent) PG students scored in the range of 31 to 40 scores while nearly half of the research scholars (N = 27, 49.1 per cent) were in this range and only one research scholar had scores in the range of 41 to 50 scores but this highest score was limited to 41 scores only.

The mean difference of 5.20 scores between PG students and research scholars was significant with t-test with a medium sized effect (Table 4). This led to the rejection of the
first null hypothesis. As RS showed better skills, this difference may be attributed to their usage of Internet (Table 2) because their mean years in starting Internet were 5.02 years (mode = 4 years) which is more than PG students (3.25 years). Age and other aspects may also have an impact in this regard, however, these points were beyond the scope of the present investigation. As far as gender is concerned, no significant difference was found between male and female university students with t-test (Table 4) hence, the second hypothesis was accepted as such.

With respect to the third hypothesis, students' usage in different disciplines showed significant difference with AN OVA in their W CES scores having a medium-sized effect with Omega Squared (Table 5) hence, it was rejected. However, to identify students of which disciplines differed significantly in W CES, post hoc testing was performed with the appropriate statistic (Hochberg Test). Post hoc analysis revealed that students in the Sciences discipline differed significantly from Arts/Humanities and Social Sciences with mean differences of 5.79 and 3.89 W CES scores respectively, while no significant difference was observed between the students of Social Sciences and Arts/Humanities. More difference with the Arts/Humanities may be due to increased usage and experience with Internet by the students of Sciences discipline as most of the electronic resources in Sciences are in electronic format only.

The fourth null hypothesis was formulated to identify students of which class differ individually in their web contents evaluation skills. AN OVA showed significant difference having a large-sized effect with Omega Squared between the students of PG-I, PG-II, M. Phil. and Ph.D. (Table 6) hence, the fourth hypothesis was rejected. However, to find out which class differs significantly from others, post hoc testing was performed with appropriate test (Hochberg Test). This further testing revealed significant difference of Ph.D. scholars having more W CES scores than the rest of the three classes (PG-I, PG-II and M. Phil.). The highest difference was found with PG-II students with a mean difference of 7.47 scores which was followed by 6.98 scores in the case of PG-I students and 6.36 scores with M. Phil. scholars. Apart from Ph.D. scholars, the rest of the individual classes did not show any significant difference in their web contents evaluation skills. This finding may indicate that students in a higher class such as Ph.D. can affect online evaluation skills.

Despite low ability in web contents evaluation skills, most of the students regarded online content to be authentic in the range of 50 to 75 per cent by 47 (37.0 per cent) students and in the range of 75 to 100 per cent by 22 (17.3 per cent) students (Table 7). Surprisingly, with out any training (94.5 per cent) by most of the students (Table 8), 54 (42.5 per cent) students did not need any need for training in this regard. Furthermore, of those seven students who had received such training, three were research scholars in LIS department.

Recommendations and Conclusion

Web contents evaluation skills among PG students and research scholars at Kurukshetra University were assessed in this paper with a 10 items five-point scale. No significant difference was observed between male and female university students. Identifying the difference between students of individual classes revealed that Ph.D. scholars significantly differed in web contents evaluation skills from PG-I, PG-II and M. Phil. Furthermore, students studying in the discipline of Sciences also differed significantly from Social Sciences and Arts/
Humans.

Increased access and usage of online information necessitates the need to prepare information literacy students. Web contents evaluation tips can be inculcated in many ways among the students. Proper Information Literacy Instruction (ILI) can be started in the university. However, other brief forms of training in this respect may also be initiated. For example, printed page / brochure at the point of Internet access across desks; a separate web page in the university website; marketing on social media websites; organizing specific workshops/seminars to create awareness etc.

Acknowledgements

Authors are thankful to Mr. Pankaj Kumar Jiloha, Teaching Associate-cum-Research Scholar, Department of Microbiology, Kurukshetra University, Kurukshetra for his kind help in administering questionnaires among students of the department.

References


Cloud Computing And Its Application in Library and Information Centre

Dhan de Shankar Ashok

Abstract
In this paper, includes cloud computing application in Library and Information Centre it provide a better understanding of cloud computing and focus on the better use and application for the Library and Information Centre. It includes an overview of cloud computing, its advantages for Library and Information Centre and Types of Cloud computing are discussed. This paper impact on the new generational library and information skills and techniques for the library and information management.

Introduction
Due to the unprecedented success of internet in last few years, computing resources is now more ubiquitously available. And it enabled the realization of a new computing concept called Cloud Computing. Cloud Computing environment requires the traditional service providers to have two different ways. These are infrastructure and service providers. Infrastructure providers manage cloud platforms and lease resources according to usage. Service providers rent resources from infrastructure providers to serve the end users. Cloud Computing has attracted the giant companies like Google, Microsoft, and Amazon and considered as a great influence in today’s Information Technology industry. Business owners are attracted to cloud computing concept because of several features. Cloud computing is a technology that uses the internet and central remote servers to maintain data and applications. Cloud computing allows consumers and businesses to use applications with out installation and access their personal files at any computer with internet access.

Definitions
What is Cloud Computing? The National Institute of Standards and Technology (NIST) defines Cloud Computing as follows: Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Also Cloud computing is a way of leveraging the Internet to consume software or other IT services on demand. Users share processing power, storage space, bandwidth, memory, and software. With cloud computing, the resources are shared and so are the costs. Users can pay as they
Cloud computing can also be defined

As an IT deployment model, based on virtualization, where resources, in terms of infrastructure, applications and data are deployed via the internet as a distributed service by one or several service providers. These services are scalable on demand and can be priced on a pay-per-use basis.

Understanding Cloud Computing Applications Cloud computing, at its simplest, is a collection of computing software and services available from a decentralized network of servers. The term “cloud” has long been used as a metaphor for the Internet, and there are many popular services and Web sites which you may already be enjoying, with out being aware that they are cloud-based. Social networking sites, Web-based email clients like Yahoo! and Gmail, Wikipedia and YouTube, and even peer-to-peer networks like Skype or Bit Torrent are all applications that run in the cloud. In other words, there is no one centralized location or organization that controls them, and nothing is required to utilize them besides a Web browser and an Internet connection. Enterprise cloud computing is for the business world. Instead of purchasing and installing the physical infrastructure necessary to run software programmes, a business instead consumes resources on a software-as-a-service (SaaS) basis. Running individual applications such as Microsoft, SAP, or Oracle will require hardware and an extensive infrastructure to support it: office space, power, networks, servers, storage, cooling, and bandwidth, not to mention the experts needed to install and run them. Cloud computing offers a streamlined, simplified solution to this complexity and the capital expenditure it necessitates.

Advantages of cloud computing

Cloud computing offers numerous advantages both to end users and businesses of all sizes. The obvious huge advantage is that you no more have to support the infrastructure or have the knowledge necessary to develop and maintain the infrastructure, development environment or application, as were things up until recently. The burden has been lifted and someone else is taking care of all that. Business is now able to focus on their core business by outsourcing all the hassle of IT infrastructure. Let’s visit some of the most important advantages of cloud computing and discuss them in more detail. One will include both a company’s and an end-user’s perspective.

1. Convenience and continuous availability: Public clouds offer services that are available wherever the end user might be located. This approach enables easy access to information and accommodates the needs of users in different time zones and geographic locations. As a side benefit, collaboration becomes easier than ever to access, view and modify shared documents and files. Moreover, service
uptime is in most cases guaranteed, providing in that way continuous availability of resources. The various cloud vendors typically use multiple servers for maximum redundancy. In case of system failure, alternative instances are automatically spawned on other machines.

2. **Backup and Recovery:** The process of backing up and recovering data is simplified since those now reside on the cloud and not on a physical device. The various cloud providers offer reliable and flexible backup/recovery solutions. In some cases, the cloud itself is used solely as a backup repository of the data located in local computers.

3. **Cloud is environmentally friendly:** The cloud is in general more efficient than the typical IT infrastructure and it takes fewer resources to compute, thus saving energy. For example, when servers are not used, the infrastructure nor mally scales down, freeing up resources and consuming less power. At any moment, only the resources that are truly needed are consumed by the system.

4. **Resiliency and Redundancy:** A cloud deployment is usually built on a robust architecture thus providing resiliency and redundancy to its users. The cloud offers automatic failover between hardware platforms out of the box, while disaster recovery services are also often included.

5. **Scalability and Performance:** Scalability is a built-in feature for cloud deployments. Cloud instances are deployed automatically only when needed and as a result, you pay only for the applications and data storage you need. Hand in hand, also comes elasticity, since clouds can be scaled to meet your changing IT system demands. Regarding performance, the systems utilize distributed architectures which offer excellent speed of computations. Again, it is the provider’s responsibility to ensure that at your services run on cutting edge machinery. Instances can be added instantly for improved performance and customers have access to the total resources of the cloud’s core hardware via their dashboards.

6. **Quick deployment and ease of integration:** A cloud system can be up and running in a very short period, making quick deployment a key benefit. On the same aspect, the introduction of a new user in the system happens instantaneously, eliminating waiting periods.

7. Furthermore, software integration occurs automatically and organically in cloud installations. A business is allowed to choose the services and applications that best suit their preferences, while there is minimum effort in customizing and integrating those applications.

8. **Increased Storage Capacity:** The cloud can accommodate and store much more data compared to a personal computer and in a way offers almost unlimited storage capacity. It eliminates worries about running out of storage space and at the same time it spares businesses the need to upgrade their computer hardware, further reducing the overall IT cost.

9. **Device Diversity and Location Independence:** Cloud computing services can be accessed via a plethora of electronic devices that are able to have access to the internet. These devices include not only the traditional PCs, but also smartphones, tablets etc. With the cloud, the “Bring your own device” (BYOD) policy can be easily adopted; permitting employees to bring personally owned mobile devices to their workplace. An end-user might decide not only which device to use, but also
where to access the service from. There is no limitation of place and medium. We can access our applications and data anywhere in the world, making this method very attractive to people. Cloud computing is in that way especially appealing to international companies as it offers the flexibility for its employees to access company files wherever they are.

10. **Smaller learning curve**: Cloud applications usually entail smaller learning curves since people are quietly used to them. Users find it easier to adopt them and come up to speed much faster. Main examples of this are applications like GMail and Google Docs.

**Key Characteristics of Cloud Computing**

**On-demand self**—service—a consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed without requiring human interaction with each service’s provider.

a. **Ubiquitous network access**—capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, lap tops, and PDAs).

b. **Location independent resource pooling**—the provider’s computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. The customer generally has no control or knowledge over the exact location of the provided resources. Examples of resources include storage, processing, memory, network bandwidth, and virtual machines.

c. **Rapid elasticity**—capabilities can be rapidly and elastically provisioned to quickly scale up and rapidly released to quickly scale down. To the consumer, the capabilities available for use often appear to be infinite and can be purchased in any granularity at any time.

d. **Pay per use**—capabilities is charged using a metered, fee-for-service, or advertising based billing model to promote optimization of resource use. Examples are measuring the storage, bandwidth, and computing resources consumed and charging for the number of active user accounts per month. Clouds within an organization accrue cost between business units and may or may not use actual currency.

**Types of Cloud Computing is typically classified in two ways**

1. Location of the cloud computing infrastructure is shared by many organizations. 2. **Public cloud**: The computing infrastructure is shared by many organizations. Some experts consider that private clouds are not real examples of cloud computing. Private clouds are more expensive and more secure when compared to public clouds. **Private clouds are of two types**:

   - **On-premise private clouds** and externally
hosted private clouds. Externally hosted private clouds are also exclusively used by one organization, but are hosted by a third party specializing in cloud infrastructure. Externally hosted private clouds are cheaper than an On-premise private clouds.

3. **Hybrid cloud** Organizations may host critical applications on private clouds and applications with relatively less security concerns on the public cloud. The usage of both private and public clouds together is called hybrid cloud. A related term is Cloud Bursting. In Cloud bursting **Private cloud are of two types: On-premise private cloud s** and externally hosted private clouds. Externally hosted private clouds are also exclusively used by one organization, but are hosted by a third party specializing in cloud infrastructure. Externally hosted private clouds are cheaper than an On-premise private clouds, 3. Hybrid cloud Organizations may host critical applications on private clouds and applications with relatively less security concerns on the public cloud. The usage of both private and public clouds together is called hybrid cloud. A related term is Cloud Bursting. In Cloud bursting organization use their own computing infrastructure for normal usage, but access the cloud for high/peak load requirements. This ensures that a sudden increase in computing requirement is handled gracefully.

1. **Commonity cloud**: Involves sharing of computing infrastructure in between organizations of the same commonity. For example all Government organizations within the state of California may share computing infrastructure on the cloud to manage data related to citizens residing in California. Classification based upon service provided based upon the services offered, clouds are classified in the following ways:

There are mainly four models of cloud computing

1. **Infrastructure as a service (IaaS)** involves offering hardware related services using the principles of cloud computing. These could include some kind of storage services (data storage or disk storage) or virtual servers. Leading vendors that provide Infrastructure as a service are Amazon EC2, Amazon S3, Rackspace Cloud Servers and Flexiscale.

2. **Platform as a Service (PaaS)** involves offering a development platform on the cloud. Platforms provided by different vendors are typically not compatible. Typical players in PaaS are Google’s Application Engine, Microsoft’s Azure, Salesforce.com’s force.com.

3. **Software as a service (SaaS)** includes a complete software offering on the cloud. Users can access a software application hosted by the cloud vendor on pay-per-use basis. This is a well-established sector. The pioneer in this field has been Salesforce.coms offering in the online Customer Relationship Management (CRM) space. Other examples are online email providers like Google’s Gmail and Microsoft’s hotmail, Google (Business Productivity Online Standard Suite). The above classification is well accepted in the industry. David Linthicum describes a more granular classification on the basis of service provided.

These are listed below

service 5. Application-as-a-service Related Technologies Cloud computing typically has characteristics of all these technologies: a. Grid computing b. Virtualization c. Utility Computing d. Autonomic Computing A quick overview of these technologies is given here. Grid Computing Grid Computing involves a network of computers that are utilized together to gain large supercomputing type computing resources.

Computing Utility Computing defines

A “pay-per-use” model for using computing services. In utility computing, billing model of computing resources is similar to how utilities like electricity are traditionally billed. When we procure electricity from a vendor, the initial cost required is minimal. Based upon the usage of electricity, electricity companies bills the customer (typically monthly). In utility computing billing is done using a similar protocol. Various billing models are being explored. A few common ones are:

1. **Billing per user count**. As an example if an organization of 100 people uses Google’s Gmail or Microsoft Live as their internal email system with email residing on servers in the cloud, Google/Microsoft may bill the organization on per user basis.

2. **Billing per Gigabyte**. If an organization is using Amazon to host their data on the cloud, Amazon may bill the organization on the disk space usage.

3. **Billing per hour/day**. As an example a user may pay for usage of virtual servers by time utilized in hours.

There are two basic types of cloud infrastructure **Internal and External**: In an internal cloud, servers, software resources, and IT expertise are used inside the school system to build a scalable infrastructure that meets cloud computing requirements. In an external cloud, service providers sell on-demand, shared services to a school. IT support, services, and expertise are included in the package; the school needs to run only the provided applications and services.

1. **Teaching and learning platforms**: Servers can provide some or all software applications, operating systems, and Internet access, rather than having these installed and maintained on each platform separately. Servers deliver on demand, as needed by the school population, to the full spectrum of learning platforms and devices. For example, a single application might be shared by hundreds of students and teachers on notebooks, tablets, and desktops.

2. **School IT**: Cloud computing allows for cost- and energy-efficient centralization of school infrastructures. It takes advantage of server capabilities to adjust allocation based on demand—all invisible to teachers and students. Remote management and maintenance can save time and increase security. For instance, an application or operating system served by the cloud can be upgraded once at the server level, rather than on each individual platform. Platform access can be restricted or denied in the event of a loss or theft.

3. **Access**: Along with the greater control for IT comes increased flexibility for teachers. They can select from the entire pool of available applications those which best complement their curriculum and students at any given time. The wide range of Internet-based software and tools can also be quickly and easily served by the cloud.
Information security is another important research topic in cloud computing. Since service providers typically do not have access to the physical security system of data centers, they must rely on the infrastructure provider to achieve full data security. Even for a virtual private cloud, the service provider can only specify the security setting remotely, without knowing whether it is fully implemented. **The infrastructure provider, in this context, must achieve the following objectives:**

1. **Confidentiality**, for secure data access and transfer.
2. **Auditability**, for attesting whether security setting of applications has been tampered or not.

Confidentiality is usually achieved using cryptographic protocols, whereas auditability can be achieved using remote attestation techniques. Remote attestation typically requires a trusted platform module (TPM) to generate a non-forgable system summary (i.e., system state encrypted using TPM’s private key) as the proof of system security. However, in a virtualized environment like the clouds, VMs can dynamically migrate from one location to another; hence directly using remote attestation is not sufficient. In this case, it is critical to build trust mechanisms at every architectural layer of the cloud. Firstly, the hardware layer must be trusted using hardware TPM. Secondly, the virtualization platform must be trusted using secure virtual machine monitors. VM migration should only be allowed if both source and destination servers are trusted. Recent work has been devoted to designing efficient protocols for trust establishment and management.
Conclusion

Cloud computing is a buzz word now days. It has changed the whole scenario. Cloud computing being “on demand” following in line with other “utilities”, such as electricity and teleph one. Not even the business organization and several educational institu ions have been considering and some of them even adopting cloud computing strategies in order to meet their requirements. Cloud computing services are a growing necessity for business organizations as well as for educational institution ions. Alth ough there are still several risks and challenges are associated with cloud bu t its potential benefits outweigh the risks.

Cloud computing remains strong and has great potential for the futu re. Happy cloud computing!

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Importance of ICT in LIS Education for Next Generation Library Management System

Dhiraj K. Chogale

Abstract

Library and Information Science Education in India is undergoing a fundamental change in its basic framework and is being re-oriented to meet the current needs of the information society. This paper explains the importance of Information and Communication Technology in Library and Information Science Education. The role of libraries is to collect, preserve and disseminate the intellectual output. Nowadays this output includes printed as well as the digital versions of the same. In this change ICT plays a very important role. So in the today’s LIS Education ICT based learning is very important. Because it helps in next generation library management system.

Keywords

Next Generation Library, LIS Education, ICT

Introduction

The library plays an important role in the academic world by providing access to world-class information resources and services, and stimulates academic research in the country. Information and communication technologies (ICT) are the major technological milestones in the history of library transformation. ICT has changed the traditional methods of library activities and services providing new dimensions for teaching, learning and research in higher educational institutions. With the help of ICT tools, it is possible to store, retrieve, disseminate and organize information by creating websites and databases. Information is now published both electronically and by print making it accessible to users according to their demands. It is important to access the ICT applications in library and information centres in the context of changing user needs. The rapid growth of ICT and the emergence of the Internet have a tremendous change in the library field. So in LIS Education management of libraries by using ICT based education learning is very important.

LIS Education in India

Library and information science is the combination of library science and information...
Importance of ICT in LIS Education for Next Generation Library Management System

Science. Very often, library science is considered as traditional area of study and information science is regarded as advanced field of study that deals with different aspects of information, involving application of ICT in a great deal. Library and Information Science (LIS) provides education for library and information professionals. It aims at creating appropriate human resources to run the libraries and information centres such as Librarians, Information officer and Document Officer. It is just a question of preference. In actual practice, there are no hard and fast rules. LIS education is a life-long process. After initial formal education, it continues in the form of continuing education and staff development. LIS education actually started in India for the first time in erstwhile Imperial Library (now National Library) in Calcutta in 1901 but it took long 45 years to introduce diploma course by the Calcutta University in the vicinity of this pioneering organization. In India a variety of courses in LIS are offered and such the learners have a wide choice. From a three months certificate course to two years diploma courses are available to create professional. The Bachelors, Masters offered by most of the universities conducting LIS courses. Even at the Master Degree level, there are two courses offering one BLISc and one year MLISc or a two year integrated MLISc programme.

ICT based recent Technologies in Libraries

ICT based Library Activities

ICT has revolutionized each and every facet of library and information centres. Providing an information services with the aid of ICT will help Library Professionals to provide pinpointed, exhaustive and expeditious information to the library patrons. With the help
of ICT following Library Activities are revolutionary changed.

- **Library Circulation**: Circulation department is one of the important departm ent of a library. It provides lending services and facilities for return of loaned items. Renewal of materials and payment of fines are also handled at the circulation counter. Circulation staff may provide basic search and reference services, to library users. Using ICT and library software continuously eases library circulation work every day.

- **Library Cataloguing**: Online cataloguing has greatly enhanced the usability of catalogues, OPACs have enhanced usability over traditional card formats. The online catalogue does not need to be sorted statically; the user can choose author, title, keyword, or systematic order dynamically. Most online catalogues offer a search facility for any word of the title is reached even better.

- **Library Bibliography**: Bibliographic Services Compilation of bibliographies, reading lists and state-of-art reports are very parts of LIS work, particularly in research and academic libraries. Browsing through bibliography database in electronic form on CDROM or online, offers convenient, efficient and cost-effective information retrieval. Bibliography databases also provide unique search features such as searching on multiple criteria and variety of display formats and styles.

- **Library Database**: Library is a collection of sources, resources and services and the structure in which it is housed it is organized by the library for the use of library members. Modern libraries are increasingly being redefined as places addition to providing materials, they also provide the services of specialists, librarians who are experts at finding and organizing information and at interpreting information needs.

- **On-line Networking**: Networking is one of the most effective ways of serving users needs comprehensively. Networked access to databases would help get newly published information to library users.

- **Library Audio-Video Services**: Audiovisual materials are important sources of information, education and entertainment. Many libraries particularly media libraries and large academic and public libraries hold audio visual material such as DVD, films, pictures and photographs etc. Libraries allow their members to borrow these. Recent developments in storage media, compression and encryption technology have made it possible to store large amount of multimedia documents on hard disk and disseminate through internet.

- **Digital Library**: Digital libraries must compete with other library resources and services. The stronger the case the digital library can make for effective user outcomes, the better it will be accepted in the library vision of service to its users.

**Importance of ICT in LIS Education**

Information is a valuable resource in all types of libraries, but the ICT tools that are important to create, collect, consolidate and communicate information are not yet used in majority of libraries. The rapid developments in Information Communication Technologies (ICT) have given a solid foundation for revolutionary changes in the information handling capabilities of academic libraries and information centres all over the world. ICT includes acquisition, processing, storage, retrieval and dissemination of information by means of
computers and communicating systems. So in present LIS Education system ICT based LIS Education is very important.

**Conclusion**

Information and Communication Technologies play an important role in enhancing efficiency in development of library services. ICT changing the work of libraries. An increased number of users, a greater demand for library materials, an increase in the amount of material being published, new electronic formats and sources, and the development of new computers are some of the reasons for the growing need for ICT in India. Librarians, library patrons and supporters, must help develop ICT based libraries to meet the changing demands of the users. So ICT based LIS Education is very important for next generation library management system.

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Style Manual for Preparation of Bibliography/References

Dilip G. Patil

Abstract
As spiral of scientific method, research is continuous process, new findings or innovations are possible only through the study from previous available documents or data. In the era of information explosion it is very difficult to find out relevant information. The exact references can be only find if they are listed or documented systematically and scientific way. There are many types of making bibliographies or references. They have their own standards. This paper has tried to light some of the style of bibliography/references. Paper concludes all sources used for preparing the write-up, should be cited, citations should be provided in the form of references and references should be given in any standard format for proper identification of sources used.

Introduction
The Term "Bibliography" was first used by Louis Jacob de Saint in his Bibliographiya Parsiana (1645–50), and became popular in the eighteenth century. It is derived from two Greek words, “biblion” means “Books” and “graphein” is to “write.” Thus, etymologically bibliography means the writing of Books.

Currently, in our context, bibliography is considered “as the Technique of systematically producing descriptive lists of written or published records (especially books and similar materials),” and is defined “as such a list, so produced and is supposed to give sufficient detail to fulfil its aim.

Researchers are required to write research papers, project reports, thesis, etc. to fulfill there academic requirements. For writing any paper, number of sources on the same subject is consulted and help is taken from many of them. When any information is used in the process of writing, it becomes important to mention from where the information has been taken. Acknowledge the works used for writing, adds to the authenticity of the new work. This is done by providing citations and bibliography. The bottom line is ideas, concepts and works of other authors must be formally acknowledged, or else it leads to plagiarism.

Reference
Without proper bibliographical references, it is impossible for any researcher to trace relevant information. Provision of Bibliographical references has following purpose:
• to furnish complete information of a document so as to serve as a source of identification
• to provide ordered arrangement of complete bibliographical details of documents used for the purpose of writing
• to support any statement made in the work which adds to the authenticity of the work

Bibliography Vs. Reference

Citations are generally divided into two categories:

1. Bibliography
2. References

These are often confused by most of us to be the same, but technically speaking they are different.

• Reference list is a list of sources given at the end of article. It gives the complete description of the sources from which the information has been taken and cited within the text. These are usually arranged according to number of citation or alphabetically at the end of the article/chapter.
• Bibliography is also a list of the sources used for initial reading on the topic. It helps to provide conceptual clarity about the topic and ideas covered in the study. Bibliography is not connected to any particular chapter but to the whole document.
• The Indian standard Recommendations for Bibliographical References: Essential and supplementary elements (First revision) 1978, defines Bibliographical references as:
  • A sequence of items of information needed for enabling a reader to identify, locate and to ascertain the relevance of document or part of a document referred to. It usually include such elements as the name of the authors and or editors, title, locus, imprint, edition, volume and issue No., place of publication, year of publication etc. Appending upon the nature of citing publication.

Why of Bibliographical References

• Giving credit to earlier work
• Showing awareness of any work done in the field
• Providing background reading if so desired.
• Identifying methodology, equipment etc.
• Supporting one’s view-point and giving shape to ideas.
• Identifying original publication in which ideas or concept was discussed
• Showing that the work undertaken is either a new work or corroboration of an earlier work
• A new explanation to an old phenomenon and finally
• Paying Tribute to pioneers in the field
Occurrence

- A bibliographical reference may occur in a document
- In the body of the text
- In a footnote
- At the end of the text or chapter or section
- In an appendix

Bibliographic Standards

Use of an accepted system of giving bibliographic description in the write-up, add to establish a standard system of referencing which ensures more efficiency and uniform system of citing the information.

Today a number of styles are available. Some well known are

Citations

• While writing, citations must be given at the following two places:
  • Within the running text section.
  • At the end of the write-up.
• Citations in the running text are added at the specific section of the work to authenticate or correlate the given ideas with the source.
• Citations can be for definition, concept, theory or idea in the text, as given by author or in his writing.

EXAM PLES ARE

I. Single Auth or

• Chicago (Chris 2005)
• Harvard (Ranganathan, 1956)
• MLA (Lancaster 21)

Harvard and Chicago follow the same style i.e. surname and year of publication added within a bracket. However, Harvard uses comma between surname and year of publication. MLA uses surname and pages (instead of year of publication).

II. Two (Or Up To 3) Authors

• Chicago (Finburn, Smith and Cosby 2004)
• Harvard (Tortora and Grabowski, 2000)
• MLA (Tortora and Grabowski 254-75), (Payne, Greer and Corbin 19-48)

Harvard and Chicago follow the same styles i.e. surname of two or three authors and year of publication added within a bracket. However, MLA also uses surnames of all the authors (two or three) followed by pages.

III. Multi-authors (4 Or More Authors)

• Chicago (Zipursky et al. 2004) or (Zipursky and others 2004)
• Harvard (Atkinson et al. 2000)
• MLA (Atkinson et al. 201-11) (Brewin, Townsend, Chirs, Boyle 199-204)

In Chicago and MLA two styles are prescribed i.e. first authors surname followed by ‘et al.’ or surname of first author or followed by ‘and others’ (Chicago) surname of all the authors (MLA)

IV. Editorial Works

• Chicago (Christina 2000)
• Harvard (Bumphrey, 1995)
• MLA (Doyle 120-31)

The term author includes editor as well as compiler therefore the abbreviations ed. and
comp. etc. are not included in the *Text Reference* but they appear in *Reference List* entries given at the end.

**V. Chapter In A Book/Conference Papers In Proceedings**

- Chapters in book as well as conference proceedings papers are cited on the analogy of simple book as given below.
- *Chicago* (Repgen 1992)
- *Harvard* (Yerxa, 1983)
- *MLA* (Yeats 198-99)

**Citation In The Reference List: Books**

- Reference List is the complete list of source used in writing, which has also been referred as Works Cited, Literature Cited, Sources Cited, Reference etc.
- It is given at the end of the work, usually in alphabetical order with full bibliographical detail of all source used in the work.
- These references are evidence of the documentary literature and other sources used in the writing.
- The first two elements of the reference i.e. author and date/page, given in the running text constitut es the link made to the references.
- This enables the reader to make a relationship between the text citation and the list of reference to trace full bibliographical description of the cited document.

**Important Elements**

For providing citations to books, following elements are important:

- Authors (s), editors (s), compiler (s) or the institution (s) responsible for thought content of the work
- Year of publication
- Title and subtitle (if any) of work
- Series and individual volume number (if any)
- Edition, if not the first
- Place of publication
- Publisher

**Examples**

**Single Auth or**


• For writing title, *Chicago* uses italics whereas *Harvard* and *MLA* prescribe both italics or und erline. *MLA* uses *Title Case*, where each substantive word starts with capital letter. Year of publication, both in *Chicago* and *Harvard* are given after the auth or ( *Harvard* uses bracket) however, *MLA* adds year (with comma) at the end of entry after publisher.

• For continuation of entry in next line, *Chicago* leaves two spaces, *MLA* leaves five and *Harvard* continues from the same indentation, leaving no space (see examples).

**Two Authors**

**Chicago:**


**Harvard:**


**MLA:**


• In *Chicago* and *MLA* only first auth or is inverted, other auth or is given in its natural order as above whereas in *Harvard* both of the surnames are inverted.

**Three Authors**

**Chicago:**


**Harvard:**


**MLA:**


*MLA* prescribes use of abbreviations in case of publishers also by making use of its given lists of abbreviations.
Multi-Authorship (4 Or More Authors)

**Chicago:**

**Harvard:**

**MLA:**

**Editorial Works**

**Chicago:**

**Harvard:**

**MLA:**

**Corpor ate Authorship**

**Chicago:**

**Harvard:**

**MLA:**

Chicago prescribes use of full name followed by abbreviations within brackets. MLA prescribes use of abbreviations for publisher not for corporate author as in case of National
Academy above. List of abbreviations is given in the manual.

Conference Papers And Proceedings

Harvard:
Paper Contribution:

Whole Conference:
- Conference on Evidence Based Practice (1999) Building on the evidence proceedings of the Second Conference on Evidence-Based Practice 16-17 April Norwich, Norfolk Healthcare Trust.

MLA:

Chicago does not make any provision for conference proceedings according to Author-Date Style. MLA treats the published proceedings of a conference like a book but adds the pertinent information about the conference like place of publication, publisher and year.

Printed Journals
1. This category includes periodicals, journals, serials, popular magazines and newspapers.
2. All these belong to same category of publication but they vary from each other.
3. Periodical is a publication issued at regular intervals like daily, weekly, fortnightly, monthly or quarterly etc.
4. Journals are research based periodicals that are more specialized in nature and intended for researchers or scholarly audience.
5. Serials are also continued publications but the frequency of such publication may vary from an annual to more than annual. They may or may not be published at regular intervals like periodicals but their serial number remains continued.

Citation In Running Text: Journals
Text citations to articles in periodicals are identical with those of books.

Important Elements
For providing citations to journals in the reference list the following elements are important.

- Author of the article
• Year of the publication
• Title of the article
• Title of the journal, and either lined or highlighted or in italics but must be consistent throughout the bibliography
• Volume and part number, month or season of the year
• Page numbers of article.

**Chicago:**


  **When month or season is to be added:**

• Martin Albro 1979 Uneasy Government business relations in twentieth century American history, Prologue 11 (Summer) 91-105

**Harvard:**


**MLA:**

• Barthelme, Fredrick “Architecture” Kansan Quarterly 13.3-4 (1981): 77-80

  **When month or season is to be added:**

• Amelar Sara h. “Restoration on 42nd Street” Architecture Mar. 1988:146-50
• Bender William H. “How Much Food will we need in the Twenty First Century” Environment Summer 1997:6-11

**Internet Sources**

1. Print sources have already evolved the standards, whereas electronic sources are in the process of evolving, may be because, electronic-texts are not as fixed and stable as in case of print sources.
2. Since such material is liable to modification and deletion with out any prior notice, information available on the Internet on a particular date may be different from past or future version at the time of accessing.
3. Such sources may require two-three dates for full identification. Typically, online text contains the date assigned to the document in the source at the time of posting the information, as well as the date on which one has accessed the document.
4. The most effective way to find such publications is through their network address or URLs.
5. For locating e-sources, accuracy in writing the address is of utmost importance, there should be no transcription error, so that if information could not be located by the given address.
6. Out of all the three style, MLA has dealt the Electronic Sources in most elaborate manner, other two has dealt quite sparingly.
7. Citations for internet sources in the text are identical with those of printed documents.

**In the Reference list, an Internet source contains the following information.**

- Author's name if given in case editor compiler or a translator is there, cite that followed by appropriate abbreviation.
- Title of the work
- Name of the editor, compiler or translator, if needed.
- Date of electronic publication or last updated
- Date of accessing the source

**Network address or URL**

**Online Book**

**Harvard:**


**MLA:**


**For an article in an online journal, MLA style gives the following information:**

1. Author’s name (if given)
2. Title of the work in quotation marks
3. Name of the periodical (underlined)
4. Volume number, issue number or other identifying number
5. Date of publication
6. The number range or total number of pages
7. Date of access and network address.

**If all above information is not available give what is available.**


**Harvard:**

Use Of Ibid And Op Cit

- *Ibid* is an abbreviation for *ibidem* which means, 'in the same place'. *Ibid* is to be used to refer to the same author or document that has been cited immediately above. If page numbers of the reference are also same, there is no need to repeat the page number, writing simply *Ibid* is enough. But if pages are different, pages must be added like, *Ibid.* P. 55.
- *Op Cit* is an abbreviation for *opere citato*, which means, 'in the work quoted'. This means that *Op Cit reference* is for a work cited previously under *References to refer the same author and document not just before but somewhere above.* Mentioning author’s name is sufficient for it to be identified. If page numbers are also same there is no need to repeat them, but if they are different pages must be added.

Conclusion

For authentication of one’s research output and to avoid plagiarism which can cause adverse consequences.

- What all sources used for preparing the write-up, should be cited.
- Citations should be provided in the form of references.
- References should be given in any standard format for proper identification of sources used.

References

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5. www.mla.org/style. (Access on March 6, 2014)
Abstract
The Paper intends to study in detail the issues relating to the emergence of digital technology, the importance of copyright in the digital environment, security aspects of IPRs, legal issues related to protection of literary resources and the challenges of managing IPRs in a digital environment. Through this study the creator intend to describe and discuss the main issues related to Intellectual Property Right (IPR) and its effects on users as well as creator intellectuality.

Introduction
“Inventors and innovations are creations of the human mind or intellect and that is why it is treated as Intellectual Property. The efforts preceding the invention/innovation/creation necessitate investments in material, manpower, finance and other resources. As a result of which legal provisions have been made to protect Intellectual Property Right (IPR). Each country provides such rights to citizens.” “Like the other for ms of property, intellectual property is also an asset, which can also be bought, sold, exchanged or gratuitously given away. The most striking difference between intellectual property and other forms of property is that, it is intangible, that is cannot be defined or identified by its own physical parameters. Therefore, intellectual property must be expressed in some discernible way for enabling it to be protected.”

Copyright
“Copyright stands for the legal right exclusively given for a definite period of time to the originator (authors or creators) of intellectual work such as a publication, or an artistic or literary work for sale or any other use. Copyright provides the creators (like writers, poets, composers, etc.) of literary or artistic works, the right of ownership for their work, and legal protection against unlawful reproduction of such works. Although copyright is generally understood as a right or license to free copying of an existing work, in reality it is not so;
infact it is a legal right to prevent others from copying. By providing protection, copyright law assures and encourages the auth ors in pursuit of artistic, scientific or literary work. The law also recognizes their right to the benefits accrued by usage of their creative work by others. This obviates an agreement between the author and the publisher (or users)1.”

Objectives of the Study

- Emergence of Digital Technology and IPR.
- Importance of Copyright in Digital environment.
- Security aspects of IPRs in Digital environment.
- Legal issues related to protection of digital resources.
- Challenges of managing IPRs in digital environment.

IPR in digital context

“The advent of digital technology has greatly accelerated the dissemination and distribution of information with great speed and accuracy never seen before. It is much easier to disseminate literary, artistic and scientific work to a very large community of Internet users and users of electronic media. At the same time poses some problems and issues for consideration which make the study significant in the present digital environment. The major issues are as follows:

- Is digitization to be considered as similar to reproduction, for example using Xerox machine?
- Is digitization a deductive activity such as translation from one language to another?
- Can transmission of digitized documents through Internet be considered as commercial distribution or public communication similar to broadcasting?
- Is the principle of exhaustion of the distribution right still effective in the digital age?
- Can we consider a database as a special collected work that should be protected by the copyright law or it can be considered as a special work requiring specific legislation for its protection?
- What can be considered as “Faire use” in the Internet environment?
- What are the concerns of the library community?
- In the digital context if access could be technologically restricted by the copyright owner, how could the public exercise fair use with regard to those works?
- Whether libraries should be prevented from employing digital technology to preserve work by making three copies—an archival copy, a master copy and a use copy?
- Whether Internet Service Providers (including libraries and educational institutions) should be liable for copyright infringement merely because they facilitated the transmission of digital data (Zeroes and Ones) that translated into another party’s copyrighted work?5

Fair Use

“The application of the conceptual doctrine of ‘fair use’ has attracted incessant debate.
The Framework of ‘fair use’ is volatile and takes shape according to the time and place of application of the doctrine and subject matter to which it is applied. The doctrine is created by judiciar y, based upon the principle of equitable and natural justice and to impress upon the owner of the copyright that he has a responsibility towards the society. It is complement ary to the concept of ‘compulsory licensing’, which is granted by statut e. However, there are certain limitations to the use of the doctrine and onus to prove the justification of using doctrine is assigned to the user1.

Information Technology Act-2000

“The Parliament of India has passed the Information Technology Act-2000 which provides the legal infrastructure for e-commerce in India. This act has received the assent from the President of India and has become the law of the land in India. It is the first Cyber Law of the country.

Cyber Law

Cyber Law is a term which refers to all the legal and regulator y aspects of Internet and the World Wide Web. Anything that concerns with or related to or emanating from any legal aspects or issues concerning any activity of netizens and others, on Internet in cyber space comes within the ambit of cyber law.

IPR Violation in the Name of Creativity

“Intellectual Property rights provide the foundation upon which innovation is shared, creativity encouraged and consumer trust reinforced. But the digital world poses a new challenge — how to manage the balance when the consumer is the creator, when the marginal cost of copying is zero, when enforcement of existing law is extremely difficult, and when “free” access to information and content is considered by many to be a right. If take an example from a famous TV show Lost Series 5 was the most pirated show in 2010 , with over 2 million downloads in the first week and reports of over 100000 people sharing a single “torrent” (metadata file for peer-to-peer sharing). Within 20 minutes of the broadcast of the final episode of Lost, a subtitled version in Portuguese reportedly appeared on a pirate website. Endemic copyright infringement facilitated by broadband infrastructure is increasingly drawing the telecommunication and Internet communities into the debate on Intellectual Property Rights. The film, music, publishing and television industries are putting pressure on Internet carriers and service providers to play a more active role in addressing both commercial copyright infringement and infringement by consumers. But in the same way as a Librarian professional it is a high time for as to consider the matter.

Telecommunication regulators are increasingly being looked to as the authority to implement rules that protect copyright, while at the same time protecting consumer interests and encouraging investment and service innovation within the digital economy, so cant we do the same thing while talking on intellectual literary works?"
IPR Issues in Social Networking Sites

“Social networking sites are widely used for publishing and sharing user-generated content. The opportunity for users to post copyright material — whether inadvertently or intentionally — is significant. For example, there are now 750 million Facebook users, one billion tweets are sent per week via Twitter, more than 48 hours of video are uploaded every minute on YouTube, Flickr hosts more than 5 billion images, and in July 2011 the Apple App store announced that at 15 billion applications had been downloaded since the opening of the store in 2008. Under pressure from the creative industries, Google implemented a number of policies in December 2010 to help dissuade people from searching for illegal copyright material. MySpace has introduced a “take down stay down” service that not only removes improperly posted video or audio content, but also marks it with a digital “fingerprint”. This prevents the user from simply reposting the content under a different user name. YouTube operates a similar content identification system, which not only filters content, but also offers rights holders the opportunity to monetize their content.”

Findings & Suggestion

The study tells us that in the present digital environment the way of violating copyright has changed. Traditionally we found that in the past people copies intellectual work directly to earn money by not letting the creator know about it. But in the present time, scenario has changed and now it is kind of a business to earn money in the name of sharing information. The violator shares the intellectual work in the name of sharing the information for the benefit of the society. But in response of this the violator get hits or likes on their social networking sites or blog post which increases his/her social importance and popularity in the society. For me it is a kind of violation of copyright because nobody has any right to be popular with the help of someone else creativity.

Conclusion

It is important to develop effective strategies to protect IP. Protecting IP can be a great help to others to avoid scams and fake or copied literature, although many of the legal principles governing IPR have evolved over centuries. Different IP rights vary in the protective they provide and it is necessary to fully protect once creation. The various policies: negotiating bodies, IP and other policy topics, raising awareness, security across multiple platform and protection at network system, password regulation protection, authentication of users & limits to their access. However it is said that it will become harder to enforce rights. New IP databases, legal resources are to be developed for reward to the innovation, effort & skills as well as for user’s beneficiary policy. The IP recognizes the changes in its own external environment this place new demands in the organization. It needs to have the services to help to protect their intellectual property in today’s environment. Today’s digital environment it is required to make some special IPR to protect creators intellectual works.
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Impact and Role of Raja Ramm ohun Roy Librar y Found ation on the Public Librar y:
An Overview

Hem Chandra; Jayvardhan

Abstract
Raja Ramm ohun Roy Librar y Found ation (RRRLF) was recognized by the Gover nm ent of
India in 1972 to start the public librar y movement in India. It has been givi ng financial
supp ort to the public libraries in the India’s various States. But a lot of is left un attended;
like instigating the States where there are no librar y legislation to bring in them early to
initiate dialogues and discussions through seminars to build up the existing librar y laws by
introducing amendm ents, to review and critically evaluate the work done by the beneficiaries
of the Fund at regular intervals. The paper recomm ends a stud y of IFLA standards in the
light of recent developments, for adoption in public libraries. It also recomm ends RRRLF
to publish documents related to the public librar y scenarios in the count ry and to take on
surveys on personal libraries and reading habits. The auth ors desire th at the RRRLF
transforms, changes India into a land of libraries. The data and content for this article
were obtained mainly through eminent auth or’s book and already published journal and
of course from the Internet.

Keywords
Public Librar y, RRRLF, SLC, Public Librar y Legislation

Introduction
RRRLF is a central autonomous organization established and fully financed by the Ministry
of Culture, Gover nm ent of India. RRRLF is registered under the West Bengal Societies
Registra tion Act, 1961 . It is the nodal agency of the Governm ent of India to supp ort
public librar y services and systems and promote public librar y movement in the count ry
comm ensurate with the objectives as embodied in its Memora ndum of Association. The
supreme policy-making body of RRRLF is called the Found ation. It consists of 22 members
nominated by the Governm ent of India from amongst eminent educationists, librarians,
administrators and senior officials. The Minister of the Department of Culture, Government
of India or his nominee is the Ch airman of RRRLF. Shri Ravindra Singh, Secretar y to the
Governm ent of India, Ministry of Culture is the present Chairman of RRRLF and Director
General is the executive head and ex-officio Member-Secretary of the Foundation. The Foundation functions in each State/U.T. through a machinery called State Librarian Committee (SLC). The Foundation works in close association and active cooperation with different State Govts. and Union Territories through a machinery called State Librarian Planning Committee (SLPC/SLC) set up in each State at the instance of the Foundation. To participate in Foundation’s programmes, a State Government/U.T. is required to contribute a certain amount fixed by the Foundation.¹

Since 2005-06 the Foundation has also taken up the initiative to develop the District Youth Resource Centre (DYRC) in collaboration with Nehru Yuvak Kendra Sangathan, an autonomous organisation under the Ministry of Sports & Youth Affairs.

Role and Responsibility of the RRRLF

The year 1972 is a significant year in the history of library movement in India. That year was celebrating silver jubilee of independence. It was the centenary year of the birth of Raja Rammohun Roy, a pioneer social reformer who had stressed the need for modern education for the progress of the nation. The year was also being celebrated as an International Book Year with the slogan BOOKS FOR ALL. Emphasis was laid on promotion of reading habit among the masses for betterment of their lives. It was in this auspicious year that at Raja Rammohun Roy Librarian Foundation (RRRLF) was established in May, 1972 by the Ministry of Culture, Govt. of India to spread library services all over the country in cooperation with State Governments, Union Territory Administration and Organisation working in the field.²

The foundation is an autonomous organisation fully financed by the Ministry of Culture, Government of India. It is registered under the West Bengal Societies Registration Act, 1961. The basic idea behind establishing the Foundation was to take the library movement not only to small towns and villages but also to the remotest corner, in cooperation with the state government, union territory administrations and other organizations engaged in the library service and mass education.³

Objectives of RRRLF

- To promote library movement in the country.
- To enunciate a national library policy and to help build up a national library system.
- To provide financial and technical assistance to libraries.
- To work for the implementation of public library acts in different states of India.
- To provide financial assistance to organisations, regional or national engaged in the promotion of library development.
- To publish appropriate literature and to act as a clearing house of ideas and information on library development in India and abroad.
- To promote research in problems of library development.
- To strengthen the children library networks in India.
- To advise the government on all matters pertaining to the library development in the country.
The RRRLF works in close association and active cooperation with different State Govts. and Union Territory Administrations through a machinery called State Library Planning Committee (SLPC/SLC) set up in each state at the instance of the Foundation. To participate in RRRLF’s Programme, a State Government/ U.T. is required to contribute a certain amount fixed by the RRRLF.4

Supp ort of reading habit being the primary goal of RRLF, the major share of assistance allowed for increasing the book stock of libraries, construction of library building, and purchase of furniture, equipment, audio-visual materials and computer. A scheme of assistance towards development of mobile library service and rural book centers was also introduced.

RRRLF has taken long strides in promoting library services in the county. With the expanded activity during the 10th Five Year Plan (2002 -2007) the total Plan grant reaches Rs. 7863.52 lakhs against Rs. 3233.00 lakhs during the 9th Five Year Plan from the Govt. of India with an average annual plan grant @ Rs. 1373.60 lakhs and state contribution reaches Rs. 4295.98 lakhs against Rs. 1977.00 lakhs during the 9th Five Year Plan with an average annual contribution @ Rs. 646.360 lakhs.5

Need for Public Libraries

1st 5 Year plan Library Services (LS) mentioned—For Educational development started integrated (LS)—With support of State Govt. 9 states established—Central Library & District Library Many Libraries - were established in this Period.

- Delhi Public Library (1951)
- Central Reference Library Kolkata (1955)
- Connemara Public Library Madras (1950)
- Became Depository Library (1955)

Public Library Legislation

India got freedom in 1947 and became a Republic country in 1950 and it’s National Capital Delhi, after Independence 29 States and 7 Union Territories. Even before Independence, Kolhapur Princely State, in the Western India passed Public Libraries Act in 1945.

Since independence of India, the following States have passed Public Libraries Acts.

1. 1948 Tamilnadu 11. 2001 Odisha
3. 1965 Karnataka 13. 2005 Uttarakhand
4. 1967 Maharashtra 14. 2006 Rajasthan
5. 1979 West Bengal 15. 2006 Uttarakhand
7. 1989 Haryana 17. 2008 Bihar
8. 1989 Kerala 18. 2009 Chattisgarh
10. 1993 Goa
Public library collections

1. The size and nature of the collection should reflect the population and local requirements.
2. Locally relevant language material should be available.
3. Book purchase should be a continuous process and at least 10% of the book collection should be less than five years old.
4. At least 60% of the library’s budget should be spent on collection development.

Impact of RRRLF on public library

To improve the skill of the working Public Librarians Training Modules are proposed to be developed

These are to be organized at three levels

Leve 1: Public library of the future, strategic planning workshop, aimed at the senior officers dealing with state level public library policy and administrative matters. It is expected that 2 or 3 officials from each state will participate in this programme.

Leve 1 2: Hands-on practical training focusing on ICT skills, administrative and management skills, aimed at the middle level staff in the state central libraries, district libraries and large city libraries. This hands-on training will be delivered in modules and will be held in each State.

Leve 1 3: Training on day-to-day routines of the library, aimed at staff who interact with library users and visitors and who are responsible for the upkeep of the libraries. This will be held in different parts of each State and will be conducted by local resource persons in local language.

RRRLF Digital Library Initiative

Digitizing of rare books, including pre-Independence newspapers, journals and other documents housed in public libraries will be taken up and a Digital Repository will be created for providing access to all stakeholders to digitized documents. Selected copyright-free materials, including paintings, photographs, manuscripts etc., available in public libraries will also be digitized and will be made available to the public. This National Digital Repository will be progressively developed to contain metadata of all rare materials available in public libraries in India as well as the Digital version of the copyright-free Works as part of National Digital Preservation Programme. This Digital Repository will also host contents on Libraries, Library System & Services and Library Development in India.

For this purpose, CDAC has already been entrusted to digitize the collection of Rabindra Bhavan, Visva-Bharati. CDAC has already digitized 8896 Journals/Books at Rabindra Bhavan as on 30th June, 2013. NIC authority has been approached for hosting of the Digital Library Portal.
Conclusion

The entire essence of RRLF role having public libraries in communities is to impact them usefully and positively. It is of vital importance for unwaged youths to get well-timed information that will make possible quick decisions and live as liable citizens. Public libraries should rise to the occasion and provide relevant and current information to those unemployed youths. To boost up the economy of India, the GDP must be on the increase. For this to happen, the rate in unemployment must be reduced considerably. Therefore, public libraries should closely identify themselves with the ambition of economic development of India. The public library must make it a top priority to provide relevant and current information to jobless youths.

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Use of Internet by the Students of Government Polytechnic, Nainital: A Descriptive Study

HEMA MEHRA; RAMA BOHRA

Abstract

The study of the usage of internet on technical students (Government Polytechnic Nainital). The normative survey research method will be adopted for data collections on work. In this sample investigator has been taken 20 students such as 10 from 3rd year, 5 from 2nd year and 5 from 1st year student from each departments. Investigator find the result with the help of (%) percentile and investigator shows table and chart. IT (Information Technology) has most number of internet users as compare to other branches. 2-75 % student use of internet for increasing knowledge and 25 % student use internet for downloading movies, games and other entertainment packages.

Keywords

Internet, Technology, Students, Nainital, Polytechnic.

Introduction

Since from beginning of human civilization it is in gradually progressive. Progress can be seen in means of transport, means of communication etc. The means of communication have been developed to the extent that without these means modern world cannot imagine their existence. These means of communication are many and varied like newspaper, radio, TV, computer, post-office, telephone, Internet these are few, but exactly we cannot count on our fingers. Now-a-days Internet as a means of communication is being used by most of the people being as fastest and easiest way to contact, to gain knowledge and to communication with people living in distance places, Internet Technology is boon for the modern civilization as it has made the concept of global village in real sense to come true. But being a new technology it needs a user to know every aspect of it as well as it not much a little knowledge of operating computer is required. Most of the educated person’s can be seen using it in their daily life for one of other purposes. India as being a developing country has very few resources but it is second largest populated country its human resources can be proved very important to make it developed country knowledge, information, are some of the factors which can make its human resources potent and useful. In India internet is in its initial state. So the investigator was interested to know about the condition of
Kashipur city of Udham Singh Nagar of Uttarakhand.

The project under the name class (computer literacy and studies in school) was initiated in India in 1983-84 by collaboration with the department of electronics. The main object of the class project was to acquaint the students and teachers with the computer applications and its potential as a learning medium. The project was launched in 248 selected secondary and higher secondary schools representing all geographical areas. Preference was given to the government schools in their selection procedure keeping in view their limited resources and the lower socio-economic status of their students. Later on, 501 schools in the year 1987-88 were included in this project.

Objectives of the Study

Objectives of the study are as follows:

1. To study the pattern of internet use by Technical level students according to I.T., Electronic, Electrical, Civil, Mechanical Department.
2. To study the pattern of internet use by I year, II year, III year students.

Rationale of Study

Since the development of computerised is considered one of the latest technologies helping the human being to become more advanced and progressive computer along cannot serve all the purposes itself it needs various other aids to perform its important work. The internet is one of the new technologies which are being used with the help of computer. To use internet computer is needed and the knowledge about computer is expected from a person who used it for various purposes the use of internet can be seen in our culture, education is one of the aspects where internet is playing a significant role. Students of all streams can get a helping hand by this technology. All the queries of students cannot be answered by the teacher, parents and friends or sometimes the formal hesitate to ask his queries from the letter, so internet plays an important role to bridge this gap of learning. Not only in the field of education but also in various other fields the knowledge of the internet has become a need. With the help of this internet service a student can gain knowledge more than he can get it from another sense. Thus the present investigation has become an important study in the light of above-mentioned information.

Delimitation of the Study

1. This study was limited to Nainital only.
2. This study was limited to technical students of Govt. Polytechnic, Nainital.
3. This study was limited to the time duration one year only.
4. This study was limited to a sample of 100 students only.

Literature Review

The descriptions of review of related literature have been provided in the following chapter.

Rama Krishnan, K.S. (2007) studied “successful online Teaching: Some Issues.” He found that some key issues related to the online teaching the e-learning is still at its infant
stage. Very less amount of research has been done so far in online learning and teaching. More research is needed in this direction. Liaw, S.S. (Jan. 2007) “Computer in Human Behavior.” He found that the personal attitudes are a major factor to affect individuals’ information technology usage. The results provide a support that the 3-Tums is appropriate model for investigating faculty and staff perceptions toward computer and internet. Martin, J.M.: Phyllis Schumacher (Sep. 2007) studied “Computer in Human Behavior: Attitudinal and experimental predictors of technological expertise.” This study sought to clarify which computer and internet skills and experiences differentiate technological expertise and to identify predictors of this expertise. Two hundred red and fifty-eight incoming universities students were surveyed on internet and computer experiences, skills, and attitudes. Six specific internet and computer uses that differentiate technological expertise were identified based on frequency of use. Helenjoy, B. H. (March. 2007) studied “Usages of internet: practices and attitudes of teacher trainees”. The results were analyzed using SPSS version 0 for windows. Singaraveler, G. (Sept. 2007) studied “Impact of Internet learning in Research Methodology.” He found that B. Ed students have poor average scores in learning research methodology through conventional approach. B. Ed. in Govt. College of Education, or that anadu. There is significant difference between the control group and experimental group in learning methodology. Learning research methodology through internet is more effective than a conventional approach.

Potosky, D. (Nov. 2007) Studied “Computer in Human Behavior.” This research improves our understanding for the concept of Internet knowledge, and provides initial support for the construct validity of a new measure of Internet knowledge with respect to its factor structure, internal consistency reliability, and concurrent validity from a practical perspective. Das, A. (March, 2008) studied “Internet Behavior of Agricultural Students in Bidh and Chandra Krishivishwavidhyalaya, West Bengal, India.” The study has shown that internet use is dispensable mode of communication (and way of reaching outer world) for students and researcher among these users belonging to different academic levels. Jebrag, P.G. & K. Mohansundaram (March, 2008) studied “Effectiveness of e-content in Technical Physics at tertiary level.” This study indicated that the experimental group and central group trainees differ in their achievement. The male trainees in the experimental group and control group differ in their achievement.

Methodology and Procedures

In the present investigation “the study of the usage of internet on technical students”, the behavioural aspects of technical students are to be studied. So, the normative survey research method adopted for data collections on work.

1. In this sample investigator has been taken 20 IT students, in which includes 10 third year, 5 second year and 5 first year students.
2. In this sample investigator has been taken 20 Civil Engineering students, in which includes 10 third year, 5 second year and 5 first year students.
3. In this sample investigator has been taken 20 Mechanical Engineering students, in which includes 10 third year, 5 second year and 5 first year students.
4. In this sample investigator has been taken 20 Electronics students, in which includes 10 third year, 5 second year and 5 first year students.
5. In the sample investigator has been taken Electrical Engineering students, in which includes 10 third years, 5 second year and 5 first years.

Data Analysis

1. The highest number of internet users was from the students of IT department.
2. Most of the students use internet for various purposes e.g. fetching information of each and every field, watching movie, teaching, interacting with friends etc.
3. All polytechnic students think internet knowledge is important for high profile jobs because it updates their skill set as per ongoing market demands.
4. The highest number of users using internet for entertainment was from the students of IT department.
5. The highest number of internet users who were using search engine was from the students of IT department and the lowest was from the students of electronic department.
6. The highest number of users using internet for mailing was from the students of IT department.
7. The highest number of internet users who think internet knowledge is essential for searching good job was from the students of IT department.
8. The highest number of students finding internet knowledge essential regarding job recruitments was from the students of IT department.
9. The highest user of the internet comparing I year, II year and III year students, the III year students of all departments were highest users and I year students of all departments were lowest users.
10. The highest number of internet users to pay your mobile bills was from the students of IT department.
11. The highest number of internet users for banking was from the students of electrical department.
12. The highest number of internet users using internet for railway ticket reservations were from the student of IT department.
13. The highest number of internet users downloading data for their mobiles were from the student of IT department.
14. The highest number of internet users using internet for Air Ticket reservations were from the student of IT department.
15. The highest number of internet users using internet for searching job were from the students of IT department and Mechanical department.
16. The highest number of internet users using internet to check the railway timings were from the students of IT department.
17. The highest number of internet users using internet for news were from the students of IT department.
18. The highest number of internet users downloading recruitment forms was from the students of IT department.
19. The highest number of internet users encounter problem while searching in the internet was from the students of IT department.
20. The highest number of internet users using library action after search failure was from the students of IT department.
21. The highest number of internet users preferring English for their internet was from the stud ent of IT departm ent and civil departm ent.
22. All stud ents are satisfied with the internet search results.
23. The highest number of internet users using internet for mobile bill payment were from the stud ent of IT departm ent and Civil departm ent.
24. The highest number of internet users using internet for were from the stud ent of IT department.
25. The highest number of internet users watching movies on internet was from the stud ent of IT departm ent and civil departm ent.
26. The highest number of internet users seeing results on internet was from the student of IT departm ent and civil departm ent.
27. The highest number of internet users using internet to download data for their mobiles was from the stud ent of IT department.
28. The highest number of internet users using to get knowledge about marke t was from the stud ent of IT departm ent.
29. The highest number of internet users using internet for audio and video conference was from the stud ent of IT departm ent and civil departm ent.
30. The highest number of internet users using internet to get knowledge about unverse was from the stud ent of IT departm ent and civil departm ent.
31. The highest number of internet users using internet to get knowledge about national current affairs was from the stud ent of IT departm ent and civil departm ent.
32. The highest number of internet users using internet to get knowledge about International Information was from the stud ent of IT departm ent.
33. The highest number of internet users using internet to get knowledge about National/International business was from the stud ent of IT departm ent and civil department.
34. The highest number of internet users using internet to get knowledge about economic condition of nation was from the stud ent of IT departm ent.
35. The highest number of internet users using internet to purchase domestic things was from the stud ent of IT departm ent.
36. The highest number of internet users using internet to get knowledge about tourist places was from the stud ent of IT departm ent.
37. The highest number of internet users using internet to get knowledge about medicines was from the stud ent of IT departm ent.
38. The highest number of internet users using internet to get knowledge about Games was from the stud ent of IT departm ent and civil departm ent.
39. The highest number of internet users using internet to get knowledge about weapons used in world war was from the stud ent of IT departm ent and civil departm ent.
40. The highest number of internet users using internet to improve their language was from the stud ent of IT departm ent and civil departm ent.
41. The highest number of internet users using internet to get knowledge about data related to their course was from the stud ent of IT department.

Findings

1. Information technology has most number of internet users as compare to other
branches.
2. . Electronics stud ent use int er net often but less than Information Techn ology stud ents. 3 . Mechanical stud ents are the average internet users.
4. . Civil Engineeri ng stud ents use internet less bu t more than Electrical Engineeri ng stud ents.
5. . Electrical Engineeri ng stud ents are the least internet users.
6. . On comparing all the stud ents, third year stud ents were using Internet more than others.

Educational Implication

1. . The nature of internet pattern use may be helpful in und erstanding choice and interest of the stud ents.
2. . The problems in using the internet by the stud ents may be found out.
3. . The stud ents may be provided necessity help in the use of internet participating in teaching and learning.

Suggestions

1. . After the conclusion, we find that this study can also be done at other levels of education as intermediate, graduation, post-gra duation, Ph.D., M. Phil. etc.
2. . The stud y emph asizes on internet uses, this stud y can also be done on internet competencies.
3. . The other stud y may be conducted by taking the sample from large area of cross validation.
4. . The internet pattern of the stud ent which may be studied with reference to their personal and social characteristics.

Bibliography


Role of National Knowledge Commission in Libraries: An Overview

JAYVAR DHAN; HEM CHANDRA & DEEPA DEVI

Abstract

The National Knowledge Commission prepares a national census of all libraries to satisfy information needs of all types of people in the society. It focuses on certain key areas such as education, science and technology, agriculture, industry, e-government etc. Training and research facilities, re-assess staffing of libraries, set up a central library fund, set up a National Mission on Libraries, encourage greater community participation in library management, facilitate donation and maintenance of private collections, modernize library management, promote Information Communication Technology (ICT) applications in all libraries, and encourage public-private partnerships in LIS development.

Keywords


Introduction

The National Knowledge Commission is a high level advisory body to the Prime Minister of India. It was given a mandate to guide policy and direct reforms, focusing on certain key areas such as education, science and technology, agriculture, industry, e-government etc. It was set up by the Government of India on “13th June 2005 with a time-frame of three years, from 2nd October 2005 to 2nd October 2008”. As we know that the 21st Century has been known globally as the ‘Knowledge Century’. Every nation now finds itself operating in an ever more competitive and globalise international environment where the information communications, “research and innovation systems, education and lifelong learning, and regulatory frameworks are essential variables.”

The Commission envisaged the future roadmap for the growth and development of academic libraries by imbibing core issues such as, set up of a National Commission on libraries, prepare a national census of all libraries, revamp LIS education, training and research facilities, re-assess staffing of libraries, set up a central library fund, modernize library management, encourage greater community participation in library management, promote Information communication technology applications in all libraries, facilitate donation and maintenance of private collections, and encourage public-private partnerships in LIS development, etc.
Libraries as Gateways to Knowledge

A library is not only a building stacked with books—it is a repository and source of information and ideas, a place for learning and enquiry, and for the generation of thought and the creation of new knowledge. Public libraries in particular have the potential to bridge the gap between the ‘information poor’ and the ‘information rich’ by ensuring that people from all sectors and settings of society and the economy across India have easy access to knowledge they seek.

In establishing the Commission in 2005—the world’s first such body/entity—India seized the challenge of making access to knowledge a reality for all. Implicit in this assignment is the opening up of knowledge resources and institutions, and the improvement of access and dissemination. At the inception of the Commission’s work, the Prime Minister pointed to the key role public libraries can play “as an extremely important element of the foundation of a knowledge economy.”

The development of libraries and their accessibility to those in search of knowledge also implies the translation of books and information into all major languages in use in India and their appropriate conversion into user-friendly versions for the varied ages, interests, needs and knowledge levels of present and potential clients of library and information services. The Commission’s integrated approach to its mandate is already reflected in its initiation of working groups and consultative enquiry on language, translation, literacy, open education and information and knowledge networking—all of which can connect to the gateways that at the opening up of libraries can yield. The Commission has already submitted recommendations on language and translation, to enrich and enhance the availability of knowledge.

Terms of Reference of the Working Group on Libraries

The Working Group on Libraries has carried out a process of consultative review, analysis and recommendation under terms of reference flagging nine priorities:

1. To redefine the objectives of the country’s Library and Information Services sector; 2. To identify constraints, problems and challenges relating to the sector;
3. To recommend changes and reforms to address the problems and challenges to ensure a holistic development of information services in all areas of national activity;
4. To take necessary steps to mobilize and upgrade the existing library and information systems and services, taking advantage of the latest advances in Information Communication Technology (ICT);
5. To explore possibilities for innovation and initiate new programmes relevant to our national needs, especially to bridge the gap between the information rich and the information poor within society;
6. To suggest means of raising standards and promoting excellence in Library and Information Science education including re-orientation and training of working professionals;
7. To assist in setting up facilities to preserve and give access to indigenous knowledge and the nation’s cultural heritage;
8. To set up adequate mechanisms to monitor activities for securing the benefit’s of acquisition and application of knowledge for the people of India;
9. To examine any other issues that may be relevant in this context. Beginning its work in April 2006, the Working Group undertook an information search, review and examination of library standards, services and potential, through a range of consultations, visits and correspondence. It enlisted the attention of several experts, and set up four special-focus committees.

The Group submitted its first proposals for action to the Commission on 28th August 2006, and the Commission has recommended key actions to the Prime Minister. Highlighted in the Commission’s 2006 Report to the Nation, these are presented in detail in the present publication.

Recommendations

In order to reach the goal of creating a knowledge society, the majority of the people of India must be helped to overcome ‘information poverty.’ The knowledge deprived has to be given access to relevant and timely information and knowledge to address the roles they should play in the developmental process. It is critical that the Library and Information Services sector is given the necessary fillip to ensure that people from all walks of life and all parts of India have easy access to knowledge relevant to their needs and aspirations.

In this new situation, libraries in India need to make a paradigm shift from their present strategy of collection or acquisition of knowledge to a strategy of knowledge access. Libraries and librarians have to recognize their social functions and their critical role in creating a knowledge society. The library and information sector is committed to support the creation of a knowledge society by providing equitable, high-quality, cost-effective access to information and knowledge resources and services to meet the informational, educational, recreational and cultural needs of the community through a range of national, institutional and public libraries.

Keeping in mind the fact that the stakeholders of all the focus areas of the National Knowledge Commission mandate will need well-organized and systematic library and information services to support all their activities, it was felt that the existing institutions and services are ready for significant change. The Commission has therefore made the following recommendations to ensure sustained attention to development of libraries:

1. **Set up a National Mission on Libraries:** There is need of a permanent, independent and financially autonomous statutory body to address all the library-related concerns and measures that require attention if the information and learning needs of the citizens of India are to be met. To launch the process in a mission mode, the Central Government should set up a National Mission on Libraries immediately, for a period of three years. This Mission should subsequently be converted into a permanent National Mission. (Annexure 1 provides details on the roles recommended for the proposed National Mission on Libraries).

2. **Prepare a National Census of all Libraries:** A national census of all libraries should be prepared by undertaking a nation-wide survey. Collection of census data on libraries would provide baseline data for planning. The Task Force that has been set up by the Department of Culture for this purpose should be given financial and administrative support to implement this activity and complete the survey on a
priority basis (within one year). Survey of user needs and reading habits should be periodic at the national level as part of the National Sample Survey.

3. **Revamp Library and Information Services** on a priority basis (within one year). Survey of user needs and reading habits should be periodic at the national level as part of the National Sample Survey.

4. **Revamp Library and Information Services**: The proposed Mission on Libraries must assess as soon as possible the manpower requirements of the country in the area of Library and Information Science Management, and take necessary steps to meet the country’s requirement through Library and Information Science education and training. To keep the sector abreast of latest developments, necessary encouragement should be given to research after evaluating the research status in this field. Establishing a well-equipped institute for advanced training and research in library and information science and services would provide the necessary impetus to this task. (Annexure 2 sets out details of proposals on the functions and organizational structure of the proposed Indian Institute of Library and Information Science).

5. **Revamp Library and Information Services**: The proposed Mission on Libraries must assess as soon as possible the manpower requirements of the country in the area of Library and Information Science Management, and take necessary steps to meet the country’s requirement through Library and Information Science education and training. To keep the sector abreast of latest developments, necessary encouragement should be given to research after evaluating the research status in this field. Establishing a well-equipped institute for advanced training and research in library and information science and services would provide the necessary impetus to this task. (Annexure 2 sets out details of proposals on the functions and organizational structure of the proposed Indian Institute of Library and Information Science).

6. **Re-assess staffing of libraries**: In the changed context, it is necessary to assess the manpower requirements for different types of libraries and departments of library and information science, keeping in mind job descriptions, qualifications, designations, pay scales, career advancement, and service conditions. (Annexure 3 provides detailed suggestions on staffing of different libraries).

7. **Set up a Central Library Fund**: A specified percent age of the Central and State education budgets must be earmarked for libraries. In addition, a Central Library Fund should be instituted for upgrading existing libraries over a period of three to five years. Initial funding from the Government sector may be Rs. 1,000 crores, which may be matched by the private sector through corporates. This fund should be administered by the National Mission on Libraries.

8. **Modernize library management**: Libraries should be so organized and the staff so trained that they become relevant to user communities (including special groups) in every respect. Also, to optimize resources, efforts should be made to synergize the strengths of different types of libraries through innovative collaboration. A proposed outline for this modernization includes a model Library Charter, a list of services to be performed by libraries, and proposals for a library network and a National Repository for Bibliographic Records.

9. **Encourage greater community participation in library management**: It is necessary to involve different stakeholders and user groups in the managerial decision-making process of libraries. Public libraries must be run by local self-government through committees representing users of the library. These committees should ensure local community involvement and should be autonomous enough to take independent decisions to conduct cultural and educational community-based programmes. Libraries should integrate with all other knowledge-based activities in a local area to develop a community-based information system. In rural areas, the responsibility for village libraries and community knowledge centres must lie with the Panchayats. These should be set up in school premises or close to them.

10. **Promote Informational Communication Technology (ICT) applications in all libraries**: The catalogues of all libraries should be put on local, state and national websites, with necessary linkages. This will enable networking of different types of libraries and setting up of a National Repository of Bibliographic Records and a centralized collaborative virtual enquiry handling system using the latest ICT. To
enable equitable and universal access to knowledge resources, libraries should be encouraged to create more digital resources by digitizing relevant reading material in different languages; this can be shared at all levels. Peer-reviewed research papers resulting from publicly funded research should also be made available through open access channels, subject to copyright regulations. The use of open standards and free and open-source software is recommended for this.

9 **Encourage public-private partnerships in development of library and information services**: Philanthropic organizations, industrial houses and other private agencies should be encouraged through fiscal incentives to support existing libraries or set up new libraries. Also, the ingenuity of civil society can be utilized for preparing necessary infrastructure to meet the special ICT needs of libraries and information services.

The NKC expects following services from public libraries in addition to their basic function, of lending, references and reading facilities.

1. Interlibrary loan
2. Photocopying
3. Online – Public Access Catalogue (OPAC)
4. A/V Material
5. Electronic Document Delivery
6. Promote use of library among non-users by identifying
7. Periodic checking of effectiveness of library services.

For collections development following guidelines are provided.

1. The collection should reflect the local requirement and majority of the collection should be in the regional language.
2. 60% of the library budget should be utilized for collections development in pursuance of NKC recommendations for sustained development of libraries and information centers. The National Mission on library has been set up by Ministry of Culture. Government of India on 4th May 2012.


**Conclusion**

In the information society of today there is information explosion in all the disciplines. To collect, organize and disseminate the information effectively and efficiently professionally qualified and trained personnel are required. They should also have good communication skills, only then the public libraries can perform their role as the institute of life long learning. The support of KNC to public library in terms to digital era is good but the digital era need more support to KNC to build a good society.
Reference

Multimedia and Virtual Systems: Information Technologies for Modern Libraries

*Khan Dekar G.B.*

Abstract

This paper discusses the application of information technologies for modern libraries. Multimedia is a device which incorporates many components and these components can be accessed simultaneously. MM is the convergence of computer and communication technology. As the name implies Multimedia lets out to use several types of media which integrates text, voice, voice processing, film, picture, graphics, animation etc. VRS is the system which has ability to provide such a rich artificial environment that is difficult to distinguish between the VRS and the real reality. Multimedia and the virtual systems, the new Information Technology products are the modern information storage and communication devices. It describes Multimedia systems, Virtual Reality systems and its prospects in Library and Information centers. An attempt has also been made to present an overview of the development and use of these technologies in our libraries.

Keywords

Multimedia, Virtual Systems, ICT, Modern Libraries

Introduction

Change is the law of nature. Man has travelled a long journey spanning various ages: Eolithic, Paleolithic, Mesolithic, Neolithic, Copper bronze, Iron Age, modern electronic age. In each age man tries to evolve something to help him in his day to day activities. Undoubtedly, education was held in great esteem in earlier times it was limited to a few only. The modern age is absolutely different from the earlier ones in many respects and the modern man is enjoying the fruits of research, discoveries, and inventions of all previous ages. Of these, inventions computerization is one such example which has made modern man’s work very easy and too fast. In some areas of science and technology improvements cannot be achieved without the use of computers.

Multimedia and the virtual systems, the new information Technology products are the modern information storage and communication devices developed in 1990’s. Multimedia and Virtual systems are the major thrust area for information technologies and as well as for the information professionals. The society which is benefited by the information...
Technology products like CDROM, net-working, online systems, E-mail, Voice mail etc. will no doubt accept MMS and VRS are becoming so pervasive and penetrating that it becomes essential to the information professionals to understand, study and give attention towards professionals to understand, study and give attention towards the issues concerned with them. An attempt is made here to illustrate these two concepts, its features, requirements etc.

**Multimedia System**

Multimedia is a device which incorporates everything and is not a book i.e. it incorporates many components and these components can be accessed simultaneously. MM is the convergence of computer and communication technology. As the name implies Multimedia lets out to use several types of media which integrates text, voice, voice processing, film, picture, graphics, animation etc.

Multimedia has become the latest cultural phenomena and the thrust for the MMS is due to have a single source for basic information on digital media.

Constituents of MM: A stand alone will always include the following hardware features:

1. Computer with processor and RAM
2. Display Unit
3. Means of user interface devices like Keyboard, Mouse, Joystick, remote control device etc.
4. Hard disc
5. CD Drive
6. Sound Synthesizer—Audio amplifier/speaker/digital audio
7. Headphones
8. Windows latest Version

If the system has the hard capacity in gigabytes to store the information then CD drive is not an essential part of the system. CD and CD drive is used because it can store about 700 MB of information in it.

In a MMS every file containing information is called as an object. The objects can be text, images, audio files, video files, video animation sequences, sound tracks, or any application software packages in the computer. The main feature of MM is ‘link’ with which one can navigate from one object to another and with these links any object in the computer can be linked to each other. The MMS can be represented as below:

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SOUND------ | ------MULTIMEDIA------ | -------TEXT
MUSIC-------- | ------------PICTURES
VIDEO-------- | -----ANIMATION
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Sound/audio is the major component of MM. Audio can be added through the MAW files. Using the waveform audio digitizer and microphone we can record instructional commentary to picture objects. Pictures constitute slides banks allow to have instant access to the thousands of slides having multiple links whenever we want to see exactly within a second unlike in a predeter mined order dictated by the slide tray. Unlike audio, music is also another ambient component of the MMS. Music is added using Musical Instrument Digital interface (MIDI). MIDI is the most economical way to add music to the system. Low cost MIDI synthesizer are now available that connect either MIDI board synthesizer
the computer or the computer’s serial port. Video films or presentations also can be added to the MM S. There are three types of video presentation. These are 1. Videotape 2. Videodisc 3. Digital Video Videotape and the videodisc have limitation of slow access. But the Digital video has overcome this problem. Now it is also possible to add the live video coverage from a distant place to the system. For example if a video coverage of a surgery at a hospital is being carried out the same can be added to MM S simultaneously. Animations are like video in that they contain motion but instead of shooting video of real objects in motion, animation sequences use computer to generate animated objects digitally. In an object oriented presentation system one can link other software applications that reside on the computer. Lastly the text which is the basic, forward processing programme and fundamental information used in the MM S.

The MM S is thus intended to address a broad range of need in different disciplines. The MM S gives the ability to:

1. Handle live data remotely
2. Handle stored data remotely
3. Handle both live and stored data simultaneously
4. Handle multiple kinds of data simultaneously
5. Handle new kinds of devices and media types

Found ation for developing the MM S is hypertext and hypermedia. We can use any compiler, Programming language or visual Basic to develop the hypertext we must decide the highlighted words and text page that elaborates on or defines the highlighted word. Hypertext is the only one of the several navigational tools we can provide in the MM S.

Using media control interface and windows we can add sound i.e. Audio files like WAW files and MIDI files. The graphic interface helps to add the features like graphs pixels etc. If the system has SVGA then it is highly useful to represent these media for information present ation. With the animation authoring tool such as Autodesk’s Pro we can add animation interface to the MM S. Video for windows (VFW) is the contribution of Microsoft to the digital video which enables to digitize and play video clips capture from conventional analog video sources such as VCD’s laserdiscs etc. VFW is based on a system called Audio Video interface. Thus Windows with compiler or application software having API and DLL can turn ones subject into a dazzling MM S.

Application of MM S: As the technology has developed the application of MM S appear d in many areas. The general uses of having a MM S are:

1. It is aid to teaching and learning in any area of study as has different options for presenting a concept or the theme of study.
2. Freedom to the user according to ones choice.
3. Allow to create, edit and retrieve and store the structured information.
4. Allows viewing the information on the monitor.
5. Allows the user to have 3D view of an object.
6. Allows nonlinear and consequential access to the system.
7. The links in the system allow the user to navigate from one object to other in the system.
8. It can be single or multiuser system.
9. The MM S is highly useful in developing the research-oriented materials and courseware.
Apart from these, the MM S can be used in business, home, shopping, geographical information, games etc.

Virtual Reality System

VRS is the system which has ability to provide such a rich artificial environment that is difficult to distinguish between the VRS and the real reality i.e. actually being there. In its simple term VR is created when a 3D computer generated graphic becomes interactive. VRS are the means of amplifying human presence in remote situation. The Network of VRS is named as ‘CYBERSPACE’. Cyberspace is nothing but the domain of electronically mediated information. Cyberspace is the combination of electronic communicaion, encompassing communi cation network, broadcasting signals as well as computer interaction. Virtual system is a system which allows people to manipulate information in a computer the same way as they manipulate object in nature.

The term VR was devised at MIT, MA in the late 1970s to express the idea of human presence in a computer generated space. Allan Kay was the first person who devised the first VRS. The concept behind the VRS is human computer interaction.

The VR technology is an offshoot of computer graphics which permits the creation of 3D images which can be rotated, shrunk and enlarged. The generation of computer graphic is carried out in three stages i.e. 1. Input, 2. Image, 3. Display.

The input is by the keyboard or with any input device available the input digitized information is then processed and are displayed. A Head Mount Device (HM D) is used to display the images. The HM D is a pair of video monitor mounted so that one is directly in front of the each eye and can be viewed through the special wide angle glass. The data glove devices enables the user to literally search into the systems and make possible to pick up object seen through the HM D and move it to the another location. This creates a sense of flow. The other device used which is an important part of VRS is Position Tracking Device. This permits the user to move in what is known as six degree of freedom. (Six degree of freedom is the ability to move an object in all directions and at all possible angles). The order devices used are joysticks and baseball sized torque input device which allow the hand to act upon virtual objects in six degree of freedom.

The VRS is the extension of MM S. To the VRS, apart from the hardware required for the MM S also require:

1. Head mount device
2. Data Glow device
3. Position Tracking Device
4. Eye ph ones which have a pair of colour liquid crystal display device. Applications of VRS: There are many applications of VRS ranging from:

1. Entertainment
2. Engineering design and architecture
3. R & D
4. Health care
5. Surveying
6. Industrial application
Problems Facing MM S AND VRS

Although we have great benefits by the MM S and the VRS incorporation of these into the work place is a difficult task. The problems faced are:

1. Lack of training and skills
2. Lack of technology and support software
3. Lack of standardization
4. Lack of funds in India for developing these systems because the technology involves high cost.
5. Lack of knowledge of using these systems.

Prospects of MM S and VRS in Librarianship and Information Centres

Non-print media of information like slides, graphics, and video films can be put in these systems and this can be taken as project. In due course of this will lead to project evaluation in terms of cost, time, quality etc. On one thing is clear from MM S is that in comparison the life of the video films, slides or graphics etc. in MM S will be more as compared to the present media. Problems of storage, presentation, organization, space etc. will be solved to a great extent. The MM S will surely have the tremendous impact on a multiuser environment. The slide of put in MM S with the Coventry audio/voice will be highly useful for classroom presentation. Like these any non-print media available in the library or information centre can be made available in MM S.

Conclusion

Both the MM S and VRS are the new invention of IT. Multimedia and the virtual systems, the new information technology products are the modern information storage and communication. Multimedia and Virtual systems are the major thrust area for information technologies and as well as for the information professionals. This System is more useful and provides effective services.

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Application of Information Technology in Central Library, Kum aun University, Nainital: An Evaluative Study

Khusal Singh Chauhan; Farzana Azim & Kiran Gangola

Abstract

The present study is intended to evaluate the uses of available applications of Information Technology in the Central Library, Kum aun University, Nainital. Kum aun University established in 1973. And its Library was established in 1987. In the study it was analyzed that how the University Library is serving its users with the help of Information Technology and the kind of facilities they are providing to the user in a digital environment.

Introduction

Kum aun University established in 1973 and recognized under section 12 (b) by the University Grant Commission on 30th June 1984. Kum aun University has two campuses Nainital and Almora. One more campus is being developed at Bhimtal for professional, technical and vocational education. Area covered by the university is 150 acres and the buildup area of the university is 2,20,500 sq. m. Central Library is established in a huge building near the administrative block of the University in the year of 1987 with the financial support of University Grant Commission and State Higher Education Department. The library holds vast collection of books approx. 80 thousand books. Central Library has good number of reference books (Encyclopedias etc.) and standard text books of different subjects. The library is also subscribing more than 150 national and international printed journals for promoting the researcher in the university. The library not only providing research material to the students enrolled in the university and research institutions. University is developing this library as a reference library in the reason. This database is available in the INFLEBNET's website (www.inflebnet.ac.in).

The deemed for Information Technology (IT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications. The term in its modern sense first appeared in a 1958 article published in the Harvard Business Review, in which authors Leavitt and Whisler commented that "the new technology does not yet have a single established name. We shall call it Information Technology."
Popular Information Technology Tools

Some of the most popular information technology skills at the moment are:

- Computer Networking
- Information Security
- IT Governance
- ITIL
- Business Intelligence
- Linux
- Unix
- Project Management

The purpose of the Information Technology (IT) section is to offer links to many sources of general information to assist in efficient use of the available IT within Arts & Sciences and throughout the University.

Development and use of information technology (IT) enables the libraries to offer their clientele not only the appropriate resources available within their own libraries but also to provide access to information in other libraries, both local and farther afield. In this age, there is a greater responsibility on the part of the library and information centers to provide the latest and most timely information to their users to facilitate improvement in the quality of education in the country. This cannot be accomplished without each institution having IT applications associated with their library services. To meet current requirements, library professionals must be able to perform various tasks in order to cope with the changes in the technological environment.

Significance of the Study

It is needless to mention here that Information Technology and the flow of Information through Information Technology is very important for the development of a society and with the help of developed society a nation can be so powerful and developed. To make a society/nation developed and powerful we need to make a new generation informed and capable of using Information Technology. Above mentioned point are capable to prove that this study is so significant.

Objectives

- To identify the services being provided by the Central Library in changing IT environment.
- To determine the user awareness towards the information available in machine-readable form.
- To give suggestion for improvement in the library services in information age.
- To know from where the information sources are collected.
- To identify sources use by the Central Library of Kumaun University to satisfy their information needs.
Analysis and Presentation of Data

1. In the study when it was tried to analyze the use of internet in Central Library, Kumaun University, it was found that 70% user’s use internet in library and 30% do not use. It shows that library is providing good internet facility but improvement needed to convert non-users to users.

2. The analysis shows that 20% users said that they look for textbooks, 15% periodicals, 05% government documents, 10% reference books, and 50% users use. Thesis/research reports in library. On the basis of above data we can say that research scholars are using this library for their research.

3. It is found that 45% user use OPAC and 55% user do not use OPAC. The data shows that library has OPAC facility but majority of the users are not using it. Library should popularize the facility available in the library and also train users how to use them.

4. The question was asked to know frequency of using OPAC we find that at 10% users use OPAC daily, 10% using once in a week, 10% using twice in a week, 20% using once in a month, and 50% use occasionally. On the basis of the data we can say that very low percent age of the students use OPAC facility.

5. This question was asked to know, the way of searching topical information on the Internet; it was found 30% said that they search the information by direct typing the web address, 10% said through the search engine and 60% users answered that they search the topical information on the internet from other sources. Majority of the users searching the topical information on the internet from other sources because they don’t know how to use the search engines. Some users search the information by direct typing the web address and very low percent age of the users using the search engine for the topical information.

6. In the study the analysis says 45% users are aware that the Library has e-journals and 55% user replied no. It seems majority of students is not aware about the libraries e-journals. In this case library staffs have to market their products and make aware to the users about e-journals.

7. The analysis shows that 70% user’s consider e-journals as one of the best sources of information and 30% users don’t think that e-journals are good source of information. Which means that in the University Library e-journals is playing a vital role in user’s satisfaction.

8. In the study it was found that at 80% user use e-mail for communication and 20% user do not use e-mail for communication. All 20% user who said they don’t use e-mail for communication, actually they don’t know how to use e-mail.

9. The analysis shows that at out of 80% users, 30% users use e-mail frequently and 50% users does e-mailing occasionally. It was surprisingly found in the study that in the age of Information Technology many students don’t even know about the e-mail.

Conclusion

Although library is providing good IT services but in some areas improvement is needed just like more computer systems should be available and every computer should be protected.
by the anti-viruses. Most of the users don’t know about OPAC. Library should popularize the OPAC facility available in the library and also train users how to use them. Printing facility should be available for the users. One more thing which is very important that Central Library does not provide any power backup for the computers (i.e. U.P.S.) which cause loss of data during the power cut.

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Role of School Libraries for the Qualitative Improvements of Education: Special Reference to Dehradun District

*KIRAN GANGOLA; RAJNEESH KUMAR & Khus Hal Singh Chauhan*

Abstract

The present study is intended to investigate the importance of a school library in the schools of Uttarakhand. Uttarakhand was formed on 9th November 2000 as the 27th State of India, when it was carved out of northern Uttarakhand Pradesh. Located at the foothills of the Himalayan mountains, the state is also known for its great schooling history. The schools situated in Uttarakhand have a very good reputation in the world over. In a pilot study of ten schools of Mussoorie, it is found that in 80% of the schools don't have proper infrastructure, don't have library professionals and even a library building. But the most striking feature found in the study is that remain 20% schools which are very old schools and they do have library professionals, separate library buildings and a quality collection. This suggests that old schools of Mussoorie did realize the importance of a good library.

Introduction

The libraries of 21st century have to be conceived not merely as the storehouse of knowledge, but an effective mechanism to facilitate dissemination of knowledge, promoting information and knowledge sharing, while, at the same time, supporting the growth of knowledge and achievement level of the students. Library is the fulcrum of support for the entire range of academic activities on an educational institution.

According to K. S. Siddhu “No School or College or University with out a library, adequate for its needs and size, should be recognized as a worthy center of education.” Library is defined as any collection of books and non-book materials organized for use. Libraries preserve knowledge so that none is lost, organize knowledge so that nothing is wasted and make knowledge available to ever yone.

Library is an organization which engages in selection, collection, procurement, process, preservation and dissemination of Documents according to the need of its user. Library play a very important part in the development in any society. Library is the means of education in both formal and non-formal way. It provides the necessary support to education. The role of Libraries in School education also cannot be und erlined it is the third angle of school education after Teachers and Students to provide quality education.
School Library

School libraries are primarily meant to collect and arrange syllabi-based books and some books for general reading and entertainment that may include classics, biographies, adventure and travel books, fiction, etc. Cultivating lifelong reading habits and opening of windows of knowledge to the students are the main objectives of school libraries. To achieve these main objectives, they have to build up their collections with print and non-print information sources, and act as media centers. They have to serve adequately the needs of students and teachers with a number of services like reference, storytelling, debates, film shows, book reading clubs, etc. The school libraries have still a greater role where there are no public libraries, as they have to perform the role of public library also. As their collections may include multimedia documents, they are often referred to as “Media Centers” or “Learning Resource Centers” also.

Importance of the School Libraries

Throughout the world, the Library of a school is considered as part and parcel of the academic set-up. It is created and maintained to serve and support the educational activities of the school. The recommendations of numerous commissions and committees established by the Government of India and various other states for the improvement of school education can bring in desired results provided the school has the full complement of library resources, personnel, and necessary infrastructure. So far, the school library has not been given its rightful place in the scheme of things. Nevertheless, it can play a very important role and help the school in achieving the educational objectives. If we recognize the value and importance of informal system of education, then library method of self-education is sure to get its due place. The school Library provides information, inculcates ideas, and develops knowledge that is so essential to functioning successfully in today’s information and knowledge-based society. It is fundamental to school library to equip students with lifelong learning skills and develop in them creative thinking and imagination, and enabling them to live as ideal and responsible citizens. Thus, the school library must be made the hub of all the activities planned and executed in school. It can be used by students to prepare for their next class period, home examination, general education, information, competitions, recreation, and inspiration. To cater to the wide varieties of demands of students and teachers it has to judiciously select and procure the prescribed/recommended text-books and other reading material from different sources, technically process it by making use of a standard scheme of classification, catalogue it to provide various access points, organize the collection on scientific lines, circulate the documents and disseminate the information in the manner most liked by the students and teachers. In addition, the school library has to serve as a resource center as well.

Significance of the Study

It is needless to emphasize that at School Library is essential to every long-term strategy for the students so that they can be good in their studies and a school library is very important for the students. The School libraries can offer the services to students and faculties to help them in their education and to achieve more in their life and so that students can increase
their reading habits. And teachers can use different sources for teaching the students in the School. This reflects the significance of the study.

Objectives of the Study

Although it is needless to write that how important a school Library can be for a student and teacher to improve their reading habits and learning but still through this study I want to evaluate

• To effectively participate in the teaching-learning programme of the school.
• Are the students doing better in their exams in the schools have proper infrastructure in context of School Library.
• Do teachers think that a proper School Library can improve reading habits in the students.

Aims and Objectives of the School Library

1. Formal Education
2. Literacy
3. Information Provision
4. Economic, Social and Cultural Development
5. Providing supplementary books and reading materials to help students and teaching at the school.

Thus it must be supported by the local, state and national governments of the day. In conceptual planning and development of school library services, the librarian is guided by the stated objectives of the school. These objectives mostly pertain to the provision of reading material, guidance in reading, reference service, instructions in the use of library catalogue and reading materials, personal and social guidance to the students etc. With little modifications here and there, different school libraries decide about the priorities of services to be offered and frame a set of objectives to be achieved. The major objectives of a school library are as:

• Provide the students with appropriate library materials both printed as well as audio visual and services for the overall growth and development of the personality of the students as an individual;
• Develop reading ability and interest, and inculcate love, enjoyment and pleasure of reading amongst the students;
• Assist the students to become skillful and discriminating users of library;
• Offer opportunities for experiences in creating and using information for knowledge, understanding, information and enjoyment;
• Support all students in learning and practicing skills for evaluating and using information, regardless of form, format or medium, including sensitivity to the modes of communication within the community;
• Stimulate and guide each student in the selection and use of books and other reading materials for the building of taste at appropriate level of maturity;
Services of the School Libraries

The services are as follows:

- User orientation, education and information literacy;
- Reference, reader’s advisory services;
- Lending and Inter Library Loan services;
- Bibliographic service;
- Career guidance.

How Do Libraries Support Teaching and Learning

A library is fundamentally an organized set of resources, which includes human services as well as the entire spectrum of media (e.g., text, video, and hypermedia). Libraries have physical components, such as space, equipment, and storage media; intellectual components, such as collection policies that determine what materials will be included and organizational schemes that determine how the collection is accessed; and people, who manage the physical and intellectual components and interact with users to solve information problems. Libraries serve at least three roles in teaching. First, they serve a practical role in sharing expensive resources. Physical resources, such as books and periodicals, films and videos, and software and electronic databases, and specialized tools, such as projectors, graphics equipment, and cameras, are shared by a community of users. Human resources—librarians (also called media specialists or information specialists) support instructional programs by responding to the requests of teachers and students (responsive services) and by initiating activities for teachers and students (proactive services). Responsive services include maintaining reserve materials, answering reference questions, providing bibliographic instruction, developing media packages, recommending books or films, and teaching users how to use materials. Proactive services include selecting and disseminating information to faculty and students, initiating thematic events, collaborating with instructors to plan instruction, and introducing new instructional methods and tools. In these ways, libraries serve to allow instructors and students to share expensive materials and expertise.

Data Collection and Analysis

As per requirement of the study a Pilot study has been done to see the exact status. For that in the study Mussoorie has been chosen, because district of Dehradun and its nearby places like Mussoorie and other are known for its great schooling history from the years.

Some world famous schools are there, which has proven the quality of education they are providing in form of the production of so many great scholars to the world. But it was surprised to see that none of those schools belongs to Government. Even then it was surprisingly shocking to see that most of the Government schools do not have anything in the name of School Library. They do not have Library professional staff, No building.

It is found that just one school has a computer in library but the library is not automated. Other libraries neither have any computer nor their library is automated. It is found that just one school has a classified collection and for that they are using Colon classification scheme. The rest of the schools arrange the books subject-wise without following
any classification scheme. It is very interesting that two out of six schools have library catalogue but not in the conventional form of card catalogue.

Conclusion

In the study “Role of School Libraries for the Qualitative Improvements of Education” it was tried to analyze the libraries of the schools to understand the conditions of the libraries of government and public schools. The study is providing a picture of all the school libraries of the city in particular and state in general. It would be an exaggeration if it is said that a library is an essential pre-requisite for successful qualitative improvements of education. Without the help and ready cooperation of a library no formal educational programme in school can fructify. But still the study cannot be generalized.

References

E-resources in Academic Libraries

KUSUMA LATA

Abstract

The recent development in information technology has greatly impacted generation/pagination of electronic publication. Use of information technology has marked a tremendous impact over all the functions and services created by traditional library and information professionals. Today libraries are providing electronic access to a wide variety of resources, including indexes, full text articles and complete journals with back files and internet/web resources. The array of electronic e-resources available in libraries today is an outgrowth of the changes in information delivery made possible through advances in both computing technologies, such as powerful personal desk top workstations and information storage and delivery mechanisms, such as CD-ROMs and user friendly graphical user interfaces. These advances made the ongoing efforts to replace other traditional services and processes with electronic versions attractive and economically feasible for many libraries. Academic libraries no longer restrict themselves to print services such as collection, development, cataloguing, classification, circulation and reference services, current awareness, selective dissemination, and other bibliographic services, but have extended their efforts to interdisciplinary concepts and computer software and hardware and telecommunication engineering and technology. Academic libraries are faced with managing hybrid resources (print and electronic) and are challenged to acquire the necessary skills. Academic libraries can maintain their place by serving as an access point to both print and e-resources.

Introduction

The growing population of e-resources and traditional libraries are gradually migrating from print documents to e-resources, where providing access to information is considered more important than owning it. It is now possible to consolidate and repackage desired information of users and give them within a minimum time. A well-established library is essential for any academic institution. As focal point for teaching, learning and research, it is expected to provide standard information resources. Today academic libraries are struggling to keep their place as the major source of enquiry in the face of amazing digital technology. According to Digital Librarian Federation (DLF, USA-http://www.dlf.org) “Digital libraries are organizations that provide the resources including the specialized staff, to select, structure, offer intellectual access to interpret, distribute, preserve the integrity of and ensure the persistence over time of collections of digital works so that they are radially and
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economically available for use by a defined community or set of community. “Digital technology has revolutionized not only the way information is packaged, processed, stored and disseminated but also how users seek and access information.”

The International Digital Publishing Forum (IDPF) is the global trade and standards organization dedicated to the development and promotion of electronic publishing and content consumption. The work of the IDPF is to promote the development of electronic publishing applications and products that will benefit creators of content, makers of reading systems, and consumers. The IDPF develops and maintains the e-Pub content publication standards that enable the creation and transport of digital books and other types of content as digital publications that are interoperable between disparate e-Pub complaint reading devices and applications.

E-Resources

Electronic resource is defined as a resource which requires computer access or any electronic product that delivers a collection of data, be it text referring to full text basis, e-journals, image collections, other multimedia products and numerical, graphical or time based as a commercially available title that has been published with an aim to being marketed. This may be delivered on CD-ROM, on tape, web, and so on. Electronic resources are e-books, e-journals, e-news papers, data bases, bibliographic data bases etc. Over the past few years, numerous techniques about related standards have been developed which allow documents to be created and distributed in electronic form. The e-resources on magnetic and optical media have a vast impact on the collections of academic libraries.

Now e-resources come equipped with powerful search and retrieval tools that allow users to perform literature searches more effectively and efficiently. Moreover, since most relevant e-resources are now available through the web, users can have desktop access to them 24 hours a day. There are several forms and types of electronic resources which are available on the internet, some of the popular ones that are gaining ground are the e-journals, standards, technical specification, reports, patents, full text articles, trade reports, and hosts of other documents sources. Also, the printed edition of scholarly journals is available on the web. The publishers of journals are themselves providing services like contents, abstracts of articles, full text, before the actual printed edition is put on the stands.

Types of E-Resources

The e-resources are divided into two major types are:

Online E-resources:

• E-journals (Full text and bibliographic)
• E-Books
• Online databases
• Web sites

Other E-resources may include:

• CD Rom
• Diskettes
• Other portable computer databases

There are some e-resources which are available in the academic libraries.

Electronic thesis and dissertations
Thesis submitted to the Universities as requirement for the award of Ph.D. degree constitute a useful source of information for the new and ongoing research. Doctoral dissertation submitted to Universities and academic institutions are originally created in digital format using word processing, software packages like MS Word.

Electronic Conferences
Electronic conferences variably known as electronic forms, electronic user group and discussion groups are important resources for researches and scholars in every discipline.

Electronic Journals
Electronic journals are used for those journals and newsletters that are prepared and distributed electronically. Electronic journals may be defined very broadly as any journal, magazine, newsletter or type of electronic serial publication which is available over the internet and can be accessed using different technologies such as WWW, Gopher, FTP, Telnet, E-Mail etc.

Electronic preprints and e-prints
Electronic preprints are research articles that are made available for distribution through the network in electronic format before they go through the process of peer reviewing. The term e-print is used to describe electronically multiple copies of the peer reviewed versions of journals articles.

Technical Report
Technical report is a scientific paper or an article that provides a detailed account of work done on a particular project.

Tutorials/Guides
The web based education tutorials or guides called online courseware that provide higher degree of interactivity, flexibility and benefit of self-pace to the users.

Management of E-Resources
The effective management of electronic resources means getting the right information to the right people at the right time. Information related to the e-resources to which a library
subscribes needs to the disseminated across various library departments, but the type of information needed depends on the staff member. Library selectors, bibliographers and decision makers need to know subscriptions details content, cost, coverage, subscription periods and instructions for obtaining usage statistics. Acquisition and serials staff need to know pricing terms and any available discount affecting other purchases and subscriptions. Catalogue staff needs to know when and how a resource can be accessed and dates of coverage. Reference, interlibrary loan, electronic reserves and other public services staff need to be apprised of newly available electronic resources and usage restrictions and rights. Staff needs to know whom to cont for subscriptions questions and technical problems.

Importance of E-Resources

- E-resources provide authoritative, accurate, current, objective reference material
- Digital libraries are accessible 24 hours a day, 7 days a week
- No trees are required to manufacture paper for the pages of e-resources
- Since e-resources are delivered through the internet there are no packing and shipping expenses
- These are especially useful for finding information not yet available in books, or obtaining up-to-date information on current topics
- With local area networks or internet, the resources can be accessed from any system attached to a network
- E-resources can be used as a networked product which can be accessed by multiple users simultaneously
- There is no physical degradation of the resources due to handling, storage

Disadvantages

- Digital libraries must keep up with rapid changes in technology (including software, hardware, and the internet). Otherwise, the resources it provides will quickly become outdated or inaccessible
- E-resources have unreliable life. The paper has a much longer life than many forms of digital archiving
- There is still a lack of standardization when it comes to digital information
- There are copyright issues relating to digital information
- A major concern of reading an e-book reader can damage his/her eyes. The resolution of screens and electronic devices is significantly less than the print quality by a press

Conclusion

Nowadays technology is running so fast and in this fast changing scenario of information technology, the expectations of information on various topics modern users are also changing. In this digital era there is no time limit for users to access the information from various resources. So due to this, it has also changed the reading habits of readers and they prefer to study any book or journal at anytime and anywhere. To fulfill the information
needs of users in such situations, e-resources like e-books, e-journals and other e-resources play a vital role and satisfy the users by providing information at any time on their doorsteps. Use of e-resources is very comm on among the teachers and majority of the teachers and research scholars are dependent on e-resources to get the desired and relevant information. But practical use of e-resources is not up to the worth in comparison to investments made in acquiring these resources. The infrastructure and training programmers should also be revised as per requirements.

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Status of Libraries: Dynamic Role of Library Associations and Academic Institutions

MADHU BALA; M. P. SINGH

Abstract

With the development of an application of ICT, the library environment has been shifted from the traditional library to virtual library and presently it is shifted library 2.0. And Library professional’s role changes in present time. Today librarians are known as many name such as knowledge manager, infor mer, infor mation scientists, path finder etc. And they provide appointees for communication with user and reading materials. The paper represents the present scenario of LIS profession & Professionals in this changing environment and to meet the future challenges of the 21st century. And considers how these are acquired and developed to survive in a changing technological environment as well as in this paper discuss the present role of library association & institutions in the development of library and librarianship profession.

Keywords


Introduction

Over the past two decade dramatically changes have fundamentally reshaped the library and librarianship and system with the advent of computer, internet and information communication technologies have revolutionized the scholarly communication scenario drastically. New Challenges for Library and Information Service Professionals, we live in a dynamic world. In fast changing, expanding diverse global digital information environment, libraries are facing a variety of complex challenges from multiple sectors of the knowledge society in the 21st Century. The major challenges are:

- Information Explosion
- Information and Communication Technology (ICT) revolution
- Explosive growth of reading material in audio-video form
- Escalating cost of printed document
- Maximum use of digital resources
- Change up to level of users’ expectations
A Rapidly Growth of Associations and Academic Institutions in India

With the arrival of e-resources the academic community has more exposure than they had before. In present time large no. of journals are available in the Association & Institution libraries which enable the user to know about knowledge. Intranet provide opportunities to access library resources from their working places without coming to the library thus they can save their lot of time. Availability of user statics has enabled the authorities to know about the performance of various departments. Now in the present time various departments can be allocated various grants for the purchase of more academic resources on the bases of user statics and user profile. Academic profile of a particular institute can be prepared by using techniques provided by the publisher.

Keisler says, “The social efforts of computer networks may be far greater and more important than you imagine,” and modern technology will enable libraries to cooperate and create networks with speed and ease. New technology provides opportunities for deliver of services in which the role of the librarian will be that of entrepreneur, marketing information without waiting for users to come to the institute. Now we have a technology that will allow us to move from a holdings-oriented environment to that of an access-oriented one.

Associations are seen as ways of getting and sharing information, as well as a way to make contacts with others. Information professionals recognize that they need relevant information to be effective in their positions and that practical up-to-date information is shared at association conferences and in association publications, listserv and websites. Association committees, interest groups, discussion groups, and round tables provide further informal settings.

According to a survey of academic librarians, (Frank 1997) 78% of the respondents considered networking with colleagues to be a very important reason for joining professional associations, while 81% felt that the professional membership was important for retention, tenure, or promotion, and 84% used professional memberships to influence professional goals and to keep up with developments in the field through professional journals, and 74% used their association membership to speak or publish.

In the external environment, the activities of association and the movement of people within the profession, librarians in India, like their colleagues in other countries, are looking to make contact with those who are working in similar settings and have successfully worked through similar problems. It is through association activities that librarians can enlarge their network of contacts ensuring that they get the most current and practical information, so all associations & institutions provide a vast information for our users in anytime, any place. And they also tried to provide current information through various services & technique like RFID, online service, E-Mail etc. Through associations, librarians can also contribute to the profession’s body of learning by publishing in association journals, newsletters, and monographs and by presenting programmes at conferences and continuing
education courses. For those looking for upward career movement, associations provide the opportunity to develop leadership skills by serving as leaders in committees, interest groups, divisions, and executive councils. Such positions give the professional a chance to enhance his or her leadership, planning and organizational skills and to demonstrate these skills to others. In India some important Associations give contibution for develop librarian profession are as fellow:

- Indian Association of Special Libraries and Information Centers (IASLIC)
- Indian Librarian Association, (ILA)
- Madras Librarian Association
- Medical Librarian Association of India (MLAI)
- Society for Advancement of Librarians and Information Science (SALIS)
- Society for Information Science (SIS)
- Special Libraries Association, Asian Chapter
- Utt ar Pradesh Librarian Association

After 19th century, many organizations launched various services for users, in 1993 the British Librarian incited the electronic Beowulf librarian project to capture, enhance, and preserve forever this cultural effect in digital form, the Indian Institute of Science Bangalore is the focal point of this activity in India. The Indian National Digital Library in English, Science and Technology (INDEST) under the Ministry of HRD is a consortium of 38 centrally funded Gov. Institutions. The dept. of culture Gov. of India has launched the national mission for manuscripts in 2003 and the Central Secretariat launches library in the National Librarian of India, the Parliament Library has undertaken work on digitization of rare books and documents and as well as many famous public library initiated digitization of many manuscripts in various language.

ALA recognizes its broad social responsibilities. The broad social responsibilities of the American Librarian Association are defined in terms of the contribution that librarianship can make in ameliorating or solving the critical problems of society; support for efforts to help inform and educate the people of the United States on these problems and to encourage them to examine the many views on and the facts regarding each problem; and the willingness of ALA to take a position on current critical issues with the relationship to libraries and librarian service set forth in the position statement. ALA Policy Manual, 1.1 (Mission, Priority Areas, Goals)

A Flow Chart of Growth of Librarian Profession

In the Modern World, the role of the LIS professional is adapting to changing technologies, information environment and customer expectations. Librarians are increasingly responsible not only to provide traditional librarian information services but also to deliver online information services according to the actual user needs. Librarians need to keep up with their users’ expectations to survive and service them. Librarians need to become information knowledge navigators who distill data into usable information.
Next Generation Libraries: Issues and Challenges

Library & Information Science Profession Future

Library professionals have to face many complex challenges, make use of the technological opportunities and respond to all these change. Positively LIS professionals with latest technological competencies are in great demand. They have great opportunities and bright career prospects as long as they improve their professionals and technological competencies and grab them otherwise it become even difficult to survive in the modern libraries. Those professionals that anticipate and embrace change constructively, creativity, and intelligently will be the ones who are most likely to survive, proper develop and succeed rather than decline and suffer in the future.LIS professionals need vision for modern professional skill and technological competencies in order to have bright future in the 21st century. IT offers a wide range of opportunities which online services provide evolution to some of these major challenges.

Conclusion

In presently digital era is started from 18th century and presently 65% peoples are using library in digital form with the help of computer. Benefits of use of ICT in services can be broadly explained in term of 4Es namely Economy, ease, extension (or expansion) and
efficiency. Information Technology is rapidly changing the whole world, creating new challenges and opportunities. Librarians have to face many complex challenges, make use of the technical opportunities and respond to all these changes positively. LIS professionals with latest technological competencies are in great demand. They have great opportunities and bright career prospects as long as they improve their professional and technological competencies and grab them. Otherwise, it becomes even difficult to survive in the modern libraries. Those professionals that anticipate and embrace change constructively, creatively and intelligently will be the ones, who are most likely to thrive, prosper, develop and succeed rather than decline and suffer in the future. LIS professionals need vision for modern professional skills and technological competencies in order to have bright future in the 21st century. Libraries are very much on other ways from begging traditional libraries to digital libraries of the future, a vital electronic environment that at dynamically ingrate teaching, learning and research new technologies that have the ability to transform lives always led to dramatic changes to civilization. So we can say that “Libraries can adopt digital technology and computer networking, but they can’t be replaced.”

References

Information Literacy: A Law Librarian’s Perspective

MANOJ KUMAR PANT; UDITA NEGI

Introduction

Education, in the 21st century has the objective of helping students to meet the challenges of a competitive environment, thus developing them into global citizens who are able to stand firm in an ever-changing, dynamic society. The complexities of the World Wide Web and other data processing have greatly heightened the information literacy needs of students in all the subjects. In order to stand up to the required standards, a student, professional and a computer man must be able to refine and handpick the requisite amount of optimum information from the existing resources. Unfortun tely, these sources are often ambiguous and overloaded, though widespread availability of information both in print and electronic forms. The key characteristic of knowledge society is that information abundant and intensive. Individuals are faced with diverse information choices. The situation provides seekers with tools and access to resources where they can access almost any type of information with a click of mouse. Such a virtual world has made information and knowledge at the disposal of individuals whose queries are reciprocated with exponential answers.

Information literacy is thus required because of the ongoing proliferation of information resources and the variable methods of access. Information is available to individual through various sources and also available in different format textual graphical etc. Same time information comes unfiltered. Individual bewildered to see the vastness of this information. This raises questions about entity, validity, and reliability of available information. These pose special challenges in evaluating, understanding and using information in an ethical and legal manner. The abundance of information and technology will not in itself create more informed citizens with out a complement ary understand and capacity to use information effectively.

Shapiro and Huges (1996) emphasized that at the scenario has made it essential for people in general to be information literate who, apart from operative knowledge, is equipped with skills to access information that helps him to do so, and to explore that information in a scientific, technological, cultural, economic and philosophical context.

Traditionally, Libraries are an important instrument in disseminating information and teaching literacy skills, in collaboration with academic departments and universities. Over the years, the world over, all sorts of academic and professional education curricula and policies have accepted information literacy as part of the pedagogy.
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Law courses are components of many undergraduate programmes and other settings external to a law degree programme. The field of law has many information literacy aspects which are specialized, if not unique to the field of law. The legal information literacy basics have grown complex, and continue to do so. Successful mastery of the legal information literacy skills requires practical exercise in addition to textbook reading. Information literacy can no longer be left solely to librarian. Collaboration between instructor and librarian has great potential for bringing information literacy to the study units. But several logistical, technological, economic, social and political issues complicate the process and planning behind information literacy initiatives. Awareness of these issues, and a willingness to address them, can enable students to build competent legal information literacy skills.

Review of Literacy

One of the most remarkable studies ‘Presidental Committee on Information Literacy: Final Report’ has defined information literacy as “To be information literate a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information” (ALA, 2000). Information literacy skills has always been a topic of discussion since ACRL (2004), published “Information Literacy Competency Standards for Higher Education” wherein it has categorically distinguished “fluency” in information technology and computer literacy from a more inclusive set of skills called “information literacy”. Information literacy is a set of abilities requiring individuals to:

1. Determine the extent of information needed (Recognize when information is needed).
2. Access the needed information effectively and efficiently (ability to locate).
3. Evaluate information and its sources critically (evaluate).
4. Incorporate selected information into one’s knowledge base (select).
5. Use information effectively to accomplish a specific purpose (use).
6. Understand the economic, legal and social issues surrounding the use of information, and access and use information ethically and legally (use effectively the needed information).

Ruth Bird (2013) differentiated information literacy from that of information technology literacy in these beautiful words as “and now all these traditional tools and objects are turned on their head, into bits and bytes with no visible or tangible structure, and we expect people with out our exposure to this understanding to be able to do research just because they have grown up using a keyboard and a free-wheeling search engine. This is analogous to saying that because you can read you can produce excellent prose”.

Rader (1995) and Bruce (2004) endorsed the need of integrating these skills with ongoing curricula of students so that need-based information requirements of the students can be identified. Bruce (1997) stated that “information literacy cannot be learned without engaging the discipline specific subject matter” and thus should be synchronized with curricula needs. Betsy Barefoot (2000) discusses the perception of first-year college students takes time to get acquaintance with Libraries as campus libraries are largely irrelevant to their lives and suggested to make library instructions an integral part of the courses.

Paul Callister (2003) stated that “[e]ven before Westlaw and Lexis Nexis made ‘free’
passwords (at least from the student’s point of view) and unlimited online access available to virtually all law students, complaints about attorneys and student research skills as well as legal research instruction were comm on themes in the literature...” marked the differences between information technology skills and Information literacy skills and concludes that at law students might be good at information literacy but lacked basic information literacy skills. H. Kum ar Percy Jayasuriya and Frances M. Brillantine (2007) while suggested a well-designed legal research format discussed basic legal research skills and knowledge a law student should possess to be information literate and continuous follow-up beyond first-year research instruction through traditional reference services, formal teaching, research guides, and tutorial. Jackie Davies and Cathie Jackson (2005) showed how information literacy, information literacy program m e and legal research tutorials can be in first year law students at Cardiff Law School. Ben Beljaars (2010) press upon to integrate the information literacy tutorial in the curricula and coordination between faculty and librarians for best results. AALL Law Student Research Competencies and Information Literacy Principles Report (2012) stated that “highly competent research skills, effective problem solving skills, and critical thinking skills are keys to success in all areas of legal practices of today and the future”.

Manifestation of law literacy in common law countries

Report of the Lord Chancellor’s Committee on law reporting (1997) stated that “The theory of binding force of precedent is firmly established in England. A judge is bound to follow the decisions of any Court recognized as competent to bind him, and it becomes his duty to administer the law as declared by such a Court.”

In common law countries the law of stare decisis stands which makes it essential for the law declared by Supreme Court is binding on all courts within the territory of India. In India the Article 141 of the constit ution of India also endorses this doctrine. This makes it important for the law libraries in common law to hold all possible legal material to take precedence from. To help the very purpose of search ability, functionality and brevity the legal document a tion can take many forms like:

1. Bare Acts
2. Commentaries on Specific Laws
3. Manuals/Local Acts
4. Reports: Law Commission Report, Parliamentary Committee Reports
5. Gazetteers: Central Government, State Government
6. Parliament ary Debates: Constituent Assembly, Lok Sabha, Rajya Sabha
7. Parliament ary Bills
8. Law Journals: Academic Journals (Containing only Articles)
9. Law Reports (Containing Full text of case laws only)
10. Digests
11. Legal Dictionaries
12. Legal encyclopaedias: American Jurisprudence, Corpus Juris
14. Database software and programmes containing selected as above
Development of Legal Research Approach

One common instance in all the pedagogy of legal research is the focus on the sources — where legal information is published, what each source contains, how to find materials within each individual source. The focus of legal research training has been on how to use various finding tools and other secondary sources to find material within the various sources of primary legal authority. The Pearce Committee (1987) formed by Australian Law Deans’ adopted the definition of research as one encompassing:

1. doctrinal research—‘research which provides a systematic exposition of the rules governing a particular legal category, analyses the relationship between rules, explains areas of difficulty and, perhaps, predicts future developments’;
2. reform-oriented research—‘research which intensively evaluates the adequacy of existing rules and which recommends changes to any rules found wanting’; and
3. theoretical research—‘research which fosters a more complete understanding of the conceptual bases of legal principles and of the combined effects of a range of rules and procedures that touch on a particular area of activity’.

The recent developments in the field of electronic data processing, database management systems and web technology has drastically shifted the age-old legal research framework comprising books, journals and digests to a new platform where every piece of full text information is available at a click of a mouse. In legal research environment the emphasis has always been laid down on the use of books and print resources. It is generally said that at the “the library is to a law student what the laboratory is to the scientist.” Early days pressed upon the bibliographic approach to the legal research, where students and young attorneys were taught on how to search for books and search content. During the 1980s, the “process-oriented” approach was developed in which the student would learn research through problem solving, rather than learning about books in the abstract. Under both the bibliographic and process approaches, however, the primary focus was on teaching students how to find and use the print sources through traditional research methods. The advent of computer technology open a new scenario and paved way for Computer Assisted Legal Research (CALR). The “computerization and digitization” of legal information has changed the landscape of legal research and stable landscape of legal research.

Legal Research Competencies and Standards for Law Student Information Literacy (2013)

The American Association of Law Libraries has approved Legal Research Competencies and Standards for Law Student Information Literacy (2013) to foster best practices in law school curriculum development and design; to inform law firm planning, training, and articulation of core competencies; to encourage bar admission committee evaluation of applicants’ research skills; to inspire continuing legal education programme development; and for use in law school accreditation standards review.

The five AALL Standards are:

I. Principle I: A successful legal researcher possesses fundamental research skills.
II. Principle II: A successful legal researcher gathers information through effective and
efficient research strategies.

III. Principle III: A successful legal researcher critically evaluates information.

IV. Principle IV: A successful legal researcher applies information effectively to resolve a specific issue or need.

V. Principle V: A successful legal researcher distinguishes between ethical and unethical uses of information, and understands the legal issues associated with the discovery, use, or application of information.

**BIALLL Legal Information Literacy Statement (2012)**

In 2012, British and Irish Association of Law Librarians (BIALLL) stepped forward for legal information literacy on behalf of its members. The British principles for information literacy were different from that of the IALL standards as they embedded the core requirements of academic and professional bodies of Britain like the English legal regulatory authorities, the Solicitors Regulation Authority (SRA), the Bar Standards Board (BSB) and ILEX Professional Standards (IPS).

**Framework for effective information literacy in law schools**

Legal research is the foundation of the legal profession and legal skills. No matter the field of specialization, and whether in the role of adviser or advocate, lawyers must learn the appropriate law and apply it to specific circumstances. Legal research constitutes a major part of the student’s and lawyer’s work day as finding the information and evaluating it to the optimum level is the core of the legal skill.

Saunders (2007) stated that “Information literacy, was once known as core responsibility is now becoming an area of collaboration and mutual responsibility between the information professional and the other academic disciplines”.

Both the academia and law firms need an immediate attention toward making students and young attorneys aware about the optimum and judicious use of information. The key to this is to come up with a well-laid framework where information experts and librarians can collaborate with respective curriculum to achieve pre-documented goals. The present technology promises to offer opportunities for exploiting the ocean of information and knowledge.

1. **Faculty Collaboration:** The partnership among librarians and teaching faculty and the integration of information literacy is quite essential. As Rader (1997, p. 49) mentions, librarians are those who “must forge partnership with teachers and faculty to bring about curricular restructuring and dynamic learning environments for students in the information age”. The authorities must consider Librarians and faculty in symbiosis to each other in sense that both are expert in their independent expertise yet are driven by the same goal for producing able professionals.

**Promoting Faculty Information Literacy**

Integrating information literacy throughout the curriculum is generally insisted upon by information professionals and librarians because of historical reasons of them being experts in information handlers and disseminators. However, because there is
inadequate staff and thus in order to support a comprehensive and inclusive information literacy instruction programme assistance of faculty and teaching staff is imperative. Instead, librarians should train and assist the faculty to teach information literacy in their courses. Each faculty member can be assigned with a library professional that can help the teaching staff with requests for research or materials to support teaching and scholarship (Risé L. Smith, 1997). This association ranges from database searching and tracking down esoteric materials to handling in-depth research projects and working with faculty research assistants. Librarians also offer customized sessions on use of the Internet and other electronic sources as well as in-class research present actions. Teaching librarians and information professionals can also regularly, in coordination with the faculty can provide orientation programmes to the faculty and teaching staff. This may also include present actions about new arrivals in library, introduction to library resources and electronic databases. This will help the faculty and teaching staff to be more confident in classroom environment and they can provide the students and young attorneys with task and problem-solving based on assignments. Meetings can be organized for with faculty, book vendors, database vendors and librarians to increase faculty awareness of relevant library services and resources.

2. Teaching Effectiveness Committee: A teaching librarian should be included in the curriculum design and assessment Committee to engage faculty in ways to fine-tune and promote information literacy classroom opportunities.

Faculty Participation in Information Literacy

Faculty can be encouraged to invite the teaching librarians to provide customized presentations in their courses to ensure students are exposed to specialized research tools and databases and prepare them for solving specific problems encountered during class assignments. The goal is to progressively increase the number of research presentations available throughout the curriculum. Faculty can be encouraged to target specific competencies and targets IALL’S Law Student Research Competencies and Information Literacy Standards (2013) in their courses, identify them in their course and design assignments where they assess student mastery of the specific information literacy goals. Teaching librarians can consult with faculty on the design of built-in research-based assignments and exercises and to provide information on library resources. The goal is to increase the number of built-in research assignments throughout the curriculum.

3. Information Technology Collaboration: While information literacy is related to information technology skills which enable students to use computers, software applications, databases and other technologies to achieve a wide variety of academic, work-related and personal goals, information literacy is the “intellecutal framework for understanding, finding, evaluating, and using information-activities which may be accomplished in part by fluency with information technology, in part by sound investigative methods, but most important, through critical discernment and reasoning.” Information literacy is of utmost importance and support information literacy. Therefore, it is critical that librarians, faculty and information technology staff collaborate to ensure students have the appropriate information technology support essential to the success
of UNH Law’s Information Literacy Plan.

4. **Assessment and fine-tuning:** Assessment is an essential component of Information Literacy tutorial framework. In order to demonstrate that students having been taught information literacy instruction are equipped with the knowledge needed to be highly efficient, capable, confident legal professionals and lifelong learners, this plan provides mechanisms for measuring outcomes of instructional components at every level. The assessment committee should periodically assess the outcomes of this exercise so that can bugs and minute problems can be corrected to optimize the information literacy plan and tutorials.

Conclusion

The field of legal information literacy and effective legal research dates back to the very inception of legal advocacy. The rapidly changing digitized education environment of lawyers requires a far-reaching change to the curriculum that goes further that the usual superficial adjustments in the legal subjects appropriate for teaching these skills. In order to stand up to the professional standards, a student and young attorney must be able to refine and handpick the requisite amount of optimum information from the existing resources. Unfortunately, these sources are often ambiguous and overloaded, though widespread. Availability of information both in print and electronic forms provides seekers with tools and access to resources where they can access almost any type of information with a click of mouse. Such a virtual world has made information and knowledge at the disposal of individuals whose queries are reciprocated with exponential answers. In order to ensure that our students become competent, efficient researchers, legal research instructors must make analytical skill development a priority in the classroom. The information literacy standards like ACRL, Legal Research Competencies and Standards for Law Students, Information Literacy and BIALL Legal Information Literacy principals have provided us with a framework on which the abilities of the students and faculty can be assessed. Legal skills and legal literacy requires close association between faculty and librarian. It is vital to interweave these complex characters into the curriculum so that they can become the lifelong associates of the young professionals.

References


India and Its Public Libraries

Mohd. Ateek

Abstract

This paper tries to highlight the public library system in India, from time immemorial, has been considered as social institution based on the democratic principle “of the people, by the people and for the people”. Public library is largely regarded as the people’s University. It is the living force of the world in different walks of life. Public Libraries serve as a catalyst for socio-cultural and educational development of the society by providing access to information and knowledge. Therefore, the public libraries are considered as effective tools to mould the character of the citizens, which has wider impact on societal as well as national development. It has tremendous development in India from the early period till date at various stages. Most of the Indian states now have free public library service to develop the people of India.

Keywords


Introduction

India is one of the very great countries endowed with a rich cultural heritage. After attaining freedom on 15th August 1947 it become a sovereign socialistic and secular democratic republic adopting the parliamentary system of government. The Indian Republic is government by the constituent ion of India, which was passed by the constituent assembly on 26th November 1949, and come into force from 26th January 1950. The parliamentary form of government is federal in nature having unitary features. The President of India is the constitutional head of the union.

Public library also serve as a ‘learning and resource center’. The change of human value system has prompted great demand of information in different areas of life. Largest development of information systems, such as computer, telecommunications and other technologies are being cope up with the library to meet the demand of library users and hence the notion of library as “storehouse for books” have been come up to the extent of “digital library” and “virtual library”. The doors of the great library in ancient Thebes bore the words “The Healing Place of the Soul”.

A library may be small or big, but it falls under the broad categories of libraries systems,
such as, national, academic public or special. With the passage of time and also with the production of different writing materials this knowledge - communication systems become very much congenial and therefore, a library in whatever form it exists be a center of communication between the originators and users of thought and ideas. But the public library systems, as the name implies, is user-friendly system as anybody can make use of this system without disseminating caste, creed, sex, religion, age, community and status.

Public library, from time immemorial, has been considered as social institution based on the democratic principle "of the people, by the people and for the people". It is the living force of the world in different walks of life. Pierce Butler stated that, "The American library, especially, bears many traces of the peculiar social forces by which it was always a clear and rationalized belief that this special institution is so necessary an agent for public enlightenment that at its support, like that at a schools should be assumed by the". Public Libraries serve as a catalyst for socio-cultural and educational development by providing access to information and knowledge. Therefore, the public libraries are considered as effective tools to mould the character of the citizens, which has wider impact on societal as well as national development. The IFLA/ UNESCO Public Library Manifesto 1994 elaborates the significance of public libraries as "the local learning, independent decision-making and cultural development of the individual and social group" and further stated impact of public libraries for education and society as "a living force for education, culture and information, and as an essential agent for fostering of peace and spiritual welfare through the minds of men of men and women".

On defining a public library it may be acknowledge that an organization, either through local regional or national government or through some other from of community organization. It provides access to knowledge, information and works of the imagination through a range of resources and services and is equally available to all members of the community regards of race, nationality, age, gender, status and educational attainment. Encyclopedia of library and Information Science defines it as "a public institution supported by taxation, one that open its collections, facilities and services, without distinction, to all citizens". According to Dr. S.R. Ranganathan, the Father of Library movement in India public library is "one which is open to any member of the public and annuity free of any charge paid as much service". Public library "manifesto 1994 reads the following key missions that relate to information, literacy, education and culture should be at the core of public library services.

1. Creating and strengthening reading habits in children from an early age;
2. Supp orting both individual and self-conducted education as well as formal education at all levels;
3. Providing opportunities for personal creative development;
4. Stimulating the imagination and creativity of children and young people;
5. Promoting awareness of cultural heritage, appreciation of the arts, scientific achievement and innovation;
6. Providing access to cultural expressions of all performing arts;
7. Fostering inter-cultural dialogue and favouring cultural diversity; 8. Supporting oral tradition;
9. Ensuring access for citizens to all sorts of ensuring information;
10. Providing adequate information services to local enterprises, associations and interest groups.

11. Facilitating the development of information and computer literacy skills; By considering different corners of the definitions of public library given above and the mission laid down by the IFLA/U NESCO public library, it can be stated the purpose of public library as follows:
   1. It is established, supported and funded by the community under the clear mandate of law.
   2. It is a living force for education, culture and information, an essential agent for the fostering of peace and spiritual welfare through the minds of men and women.
   3. It provides equal free recourse and services to the society.
   4. It provides knowledge, education, information and cultural development to all members of the community regardless of race, nationality, age gender, religion, and language or social status.
   5. It is the responsibility of local or national authority.

Public Library Scenario in India

India celebrated its 60 year of independence in 2007 and taking stock of development in various fields. It is also an important landmark in the history of public library service in India. Maharaja Saauji Rao Gaekward has introduced free compulsory education backward by libraries in 1883 in the district of Baroda and henceforth for the first time in India free public library services were introduced as a system in 1907 and extended to the entire state. It can therefore, be traced out that at 2007 was the centenary year of free public library services in India. Public library is largely regarded as the people’s University. It has tremendous development in India from the early period to till date at various stages. Most of the Indian states now have free public library service to develop the people of India at different levels, which can be stated as below briefly.

1. Ancient Period (before 1200 AD). The history of the development of the public library may be said to be as old as the history of education in India. During Vedic times, India is being very much pertinent in search of knowledge and wisdom. Oral communication was the best means amongst the people of India and writing was not available. ‘The earliest written and recorded materials found in India are the inscription on stone pillars of King Asoka (300 BC) these inscriptions could be called the first outside open libraries “the reading materials, of course, related to many subjects formed the source material for transmitting knowledge in different streams of education and culture. The collections might be likened to modern libraries since they were carefully maintained and extensively used by students and teachers alike.” India, since the ancient times libraries have been functioning as lighthouses for those who wanted to read and to extend the boundaries of various disciplines. References are available to prove that at Nalanda University in Bihar had its own multistoried library in 600 AD with massive collection of manuscripts.

2. Medieval Period (1200 -1757 AD): Muslims mostly rules the Medieval Period of India. Historically, it is also known as Mughal period. There were great changes not only in social and political, but also on education and library system during this...
period. The Muslim rulers made great contribution to Indian culture and libraries played a significant role in the socio-cultural development of the nation. “The period of Mughal is considered as the golden period of Indian history for its educational, literary, and library activities.” Some wealthy and scholars, like Abdu l Rahim Khan i-Khanan, Shaik Faizi, Gulbada n Begum and ruler of Mysore and Jaipur also have their private libraries. Some Hindu learning centers also have collections of manuscripts on religion and philosophy as well as other subject like medicine, science and history. “Christian missionaries have also contributed to the libraries since the coming of Vasco Gama in India. During the Mughal period, library and technical works, viz. Accessioning, Classification and Cataloguing were also carried out in some ways. The head librarian was known a “Nizam” and assistant librarian as “Muhatin” or “Darogha”. Other staff of libraries during Mughal period is scribes, Book Illustrators, Calligraphers, Copyists, Translators, Book inders and Gilders.

3. **The British Period (1757-1947):** The Britishers came to India primarily to establish trade and commerce. Some of them were very interested for the upliftment of rich cultural heritage of India. A number of academic institutions were established during the British period by the East India Company and by the Christian missionaries. The University of Calcutta was established in 1857 and its library was opened in 1873. Other universities, Universities of Bombay and University of Madras were established in 1879 and 1907 respectively. There were only nineteen universities in India before 1947. Universities were equipped with libraries in accordance with the Indian University Act of 1904. The Bengal Royal Asiatic Society set up library in 1784, Bombay Royal Asiatic Society in 1804 and Calcutta Public Library in 1835. Establishment of these libraries enlightened the community and may be regarded Indian people. The people in general were economically poor and socially backward. According to him, education was the foundation to reconstruct a new social and economic life and education should be the right of the humble village. He introduced freedom and compulsory education in his princely states. Baroda becomes the first territory not only among the native states but also in British India to have compulsory free primary education. He opined that at primary education was to the very base and decided to preserve it by means of libraries as an experiment in one of the towns of a taluka and in order to implement his idea immediately he issued orders to his ministers.

4. **Post- Independence Period (1947 onwards):** Public libraries in India made a tremendous growth after the independence of India in 1947. The central and the state government took a number of steps forward for the development of the nation from the point of education and considered library as an essential part of it. The programmes executed by provincial and central government in 1910 for the social and adult education of the populace paved the way for the enactment of library laws and rules for grants-in-aid in the country. The Connemara Public Library in Madras becomes the State Central Library in 1950 under the provision of Madras Public Library Act, 1948 and become one of the three depository libraries in 1995.

Delhi Public Library was established in 1951 as the first UNESCO Public Library Pilot Project under the joint auspices of UNESCO and Government of India to adopt “Modern
Techniques to Indian Conditions” and to serve as a model public Library for Asia. In 1954, the Deliber y of Book Act was passed to include newspaper. They obligated every publisher in India to deposit one copy each of its publications to the National Library in Calcutta, the Asiatic Society Library in Bombay, Connemara Public Library in Madras, and Delhi Public Library in New Delhi.

Definition

While defining the public library, the Unesco Manifesto for Public Libraries (issued in 1949 and revised in 1972) states, “The Public Library is a practical demonstration of democracy’s faith in universal education as a continuing and life long process, in the appreciation of the achievement of man’s faith in knowledge and culture. It is the principal means whereby the record of man’s thoughts and ideas and the expression of his creative imagination are made freely available to all. It is concerned with the refreshment of man’s spirit by the provision of books for relaxation and pleasure. The above quoted definition of Public Library can be summarized by mentioning that it is a public library which is established under the mandate of law. (i) which is maintained and run from public fund; and (iii) all of its services should be available to everyone free of charge.

Function of a Public Library

The public library of today, however, is considered to be an intellectual power house, which strives to fulfill and meet the educational, cultural and informational needs of the public through audio-visual materials. To provide recreational material remains to be its one of the major functions, but it also provides to the public materials related to their fields of specialization, activities, professions and occupation. It also makes them aware of the economic, social, cultural and political developments around them. The public interest libraries has greatly increased and we believe there is now a far healthier belief in the value of knowledge and in the importance of intellectual life. As discussed in preceding pages a public library functions as an intellectual, aspiring to meet the intellectual, educational, recreational, informational and cultural requirements of the masses. Much has been written on the functions of a public library.

“It is the function of a public library not to satisfy, but to promote the desire of books. Consequently the provisions of a children’s library with adequate stocks and expert guidance in the choice of book should be regarded as an integral part of the library service.”

Library Objectives and Use

- To assemble, preserve and administer, in organized collections, books and related educational and recreation material in order to promote, through guidance and stimulation the communication of ideas, an enlightened citizenship and enriched personal lives.
- To serve the community as a center of reliable information.
- To support educational, civic, and cultural activities of groups and organizations.
- To seek continually to identify community needs, to provide programmes of service
to meet such needs, and to cooperate with other organizations, agencies, and institutions to provide programmes or services to meet community needs.

To provide opportunity for recreation through the use of literature, music, art for ms and internet accessibility. 9

To identify major public libraries / repositories of India possessing a very strong collection in orient al language, literature and cultural.

- To evaluate the policy of collection development and preservation techniques for manuscripts and rare documents.
- To evaluate the present situation of various modernization techniques being used in these libraries.
- To suggest what can be done to modernize these libraries.
- To recognize the development pattern with respect of their modernization. 10

Some important objectives are

- To promote library movement in the country;
- To articulate a national library policy and to help build up a national library system;
- To provide financial and technical assistance to libraries;
- To provide financial assistance to organizations, regional or national, engaged in the promotion of library development;
- To publish appropriate literature and to act as a clearing house of ideas and information on library development in India and abroad;
- To promote research in problems of library development;
- To advise the government on all matters pertaining to the library development in the country.

Public Library, A Public Necessity

- Any consideration of a public library project is compliment ary to a community, showing, as it does, a sense of civic responsibility and a desire for future progress which are commendable. No town can hope to live up to its greatest possibilities without a public library, and none with a sincere desire need be denied the blessings which result from such an institution.
- There are few communities which would not provide for a public library, if its advantages were appreciated, for it is a remedy for many ills and is all-embracing in its scope. It vitalizes school work, and receiving the pupil from the school, the library continues his education throughout life. It is a home missionary, sending its messengers, the books, into every shop and home. With true missionary zeal, it not only sends help, but opens its doors to every man, woman and child. In most towns, there are scores of young men and boys whose evenings are spent in loafing about the streets, and to these the library offers an attractive meeting place, where the time may be spent with jolly, wise friends in the books. The library substitut es better for poorer reading, and provides story hours for the children who are eager to hear before they are able to read. It also increases the earning capacity of people, by
supplying information and advice on the work they are doing.

- Increased taxation is one of the greatest hindrances to the opening of a public library, but any institution which enriches and uplifts the lives of the people, is the greatest economy. Any attempt to conduct civic affairs without a reasonable expenditure of money for such influences is the grossest extravagance. No economy results from ignorance and vice, and the public library has long since established its claim as one of the most potent remedies for such conditions.

- It is no exaggeration to state that every dollar expended for library purposes is returned to the community tenfold, not necessarily in dollars and cents, but in the more [Pg. 30] permanent, more valuable assets of greater happiness, comfort and progress of the people. A city is the expression of every life within its borders, and every increase in progress and efficiency in the individual citizen, is progress for the whole.

- The most valuable things usually are obtained at some sacrifice, and the many advantages from a public library are certainly worth paying for. Hundreds of small cities and towns tax themselves for electric lights and count themselves fortunate. No one seems to regret this taxation for electric lights which illuminate the citizen’s way at night. Should there not be an equal or greater readiness on the part of the community to establish a library and so illuminate the mental horizon of every citizen?

- A public library is a necessity, not a luxury. Every community which realizes this and establishes a library, proclaims itself an intelligent, progressive town and one worth living in.CHALMERS HADLEY.

- The opening of a free public library is a most important event in any town. There is no way in which a community can more benefit itself than in the establishment of a library which shall be free to all citizens. WILLIAM McKinley.

**PUBLIC LIBRARIES ACT IN INDIA**

**Status of library legislation in India**

India attained freedom in 1947 and became a Republic in 1950. For facilitation administrations, it now has a National Capital Region of Delhi, 28 States and 6 Union Territories after Independence. Even before Independence, Kolhapur Principly State, in the Western India passed Public Libraries Act in 1945. Since independence of India the following States have passed Public Libraries Acts. [9]

So far, only half of the States of the Indian Union have successfully passed the library legislation. However, in the coming few years, there is greater possibility for a library law being enacted in the remaining States. Out of these the enactment of Public Library Law at Pudu cherry State is in the forefront.
Table 1. According to the year established, Public Library Acts In India.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of the State</th>
<th>Year of the Established Public Library Acts in India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tamil Nadu (Madras) Public Libraries Acts.</td>
<td>1948</td>
</tr>
<tr>
<td>2</td>
<td>Andhra Pradesh (Hyderabad) Public Libraries Acts.</td>
<td>1960</td>
</tr>
<tr>
<td>3</td>
<td>Karnataka (Mysore) Public Libraries Acts.</td>
<td>1965</td>
</tr>
<tr>
<td>4</td>
<td>Maharashtra Public Libraries Acts.</td>
<td>1967</td>
</tr>
<tr>
<td>5</td>
<td>West Bengal Public Libraries Acts.</td>
<td>1979</td>
</tr>
<tr>
<td>6</td>
<td>Manipur Public Libraries Acts.</td>
<td>1988</td>
</tr>
<tr>
<td>7</td>
<td>Kerala and Har yana Public Libraries Acts.</td>
<td>1989</td>
</tr>
<tr>
<td>8</td>
<td>Goa and Mizoram Public Libraries Acts.</td>
<td>1993</td>
</tr>
<tr>
<td>10</td>
<td>Uttar Pradesh, Uttarakhand Public Libraries Acts.</td>
<td>2005</td>
</tr>
<tr>
<td>11</td>
<td>Rajasthan Public Libraries Acts.</td>
<td>2006</td>
</tr>
<tr>
<td>12</td>
<td>Bihar, Chattisgarh and Pondicherry Public Libraries Acts.</td>
<td>2007</td>
</tr>
</tbody>
</table>

Conclusion

The present study concludes that the development of public libraries in India is making a rapid progress in many of the states. It is evident that so far fourteen number of states have recognized the importance of public library service by enacting library legislation for socio-cultural and education development. This has also been established that the public libraries play an important role for societal and national development. Although many of the states have not enacted public library act, they are still in the process and persuading the state government for early legislation.

Reference

Impact of Information Literacy on the Uses of Library Resources: A Study with Special Reference to the College Students of Guwahati City

Nabajyoti Das

Abstract

The use of library resources focuses on the accumulation of knowledge, which is a part of learning processes. It is closely related to Information Literacy (IL). The ‘use of library resources’ needs a skill and condition of mind that is acquired through regular practice of using library resources for the pursuit of knowledge and/or mental refreshment. The author discusses the factor i.e. ‘Information Literacy’ among the various factors like social, educational, cultural and parental factors which have significant effects on the enhancement of the use of library resources. The article viewed the educational system and mostly the library system are more responsible for producing information literate human beings. The library system and educational system are largely responsible for developing intellect, skills and ideas in regards to information searching, browsing and ultimately using information and information resources by the students themselves, which help to stimulate thought and emotions in human mind and develop worthwhile tests and logic interest on reading resources of the library for the pursuit of knowledge. The article has given a descriptive analysis of the data collected through a survey of the students of the colleges of Guwahati City and from analysis it reveals that information literacy has a significant impact on enhancement of the use of library resources.

Keywords

Information Literacy, Use of Library Resources, College Students, Guwahati

Introduction

The use of library resources focuses on the accumulation of knowledge, which is a part of learning processes. It is closely related to Information Literacy (IL), as it is nowadays understood and practiced at the age of Information & Communication Technology (ICT), might it be worth considering the operational perspective and specifically the scale at which one is operating. Could it be that IL has an impact on encouragement/enhancement of use of library resources? The answer to this question might be yes, and so this article
seeks to generate an analysis, and initiate proposal of how or to what extent from the field of education, training in IL can contribute to the generation of people’s competent in searching, locating and using information, and thus to develop a spontaneous tendency towards the use of library resources.

Now, before looking more deeply into the specific issues in both fields, it is necessary to define the terms Information Literacy (IL) and to outline the scope of this article and its intended framework. Paul G. Zurkowski (1974, p. 6) first used the term information literacy to describe “the techniques and skills necessary to be able to utilize a wide range of information tools as well as primary sources, and to measure information value, to mould information to needs and to create solutions to problems”. Since Zurkowski’s coining of the concept of IL, a wide range of definitions of IL have been forwarded by the researchers around the world to explore and expand the concept. IL is a tool that facilitates lifelong learning. It is a set of abilities requiring individuals to “recognize when information is needed and have ability to locate, evaluate and use effectively the needed information” (American Library Association, 1989). Information literacy is one basic existence skill, which forms the basis of lifelong learning (Abid, 2008).

By going through various definitions we are in a position to understand that the purpose of IL is to achieve competencies i.e. knowledge, skills and attitudes in computing and communicating that would enable after identifying and recognizing the information needs to locate, select, retrieve, organize, evaluate, produce, share and disseminate information in an efficient and effective way.

The phrase ‘Use of Library Resources’ indicate the reading/studying of the printed and/or electronic materials that are available in the library or have access to the various remote database. ‘Reading/ Studying’ means the action of pursuing written, printed or electronic matters; it is a practice of occupying oneself in the process of understanding the matters and gaining knowledge.

The reading/studying should be purposeful to consider the use of library resources meaningful. In light of the above it can be summarized that the ‘use of library resources’ needs a skill and condition of mind that is acquired through regular practice of using library resources for the pursuit of knowledge and/or mental refreshment. It is a biological and spontaneous process and it is tremendously influenced by societal factors one comes across in the passage of time. The use of library resources depends on a variety of factors, out of which the most important factors are Literacy level, Library system (availability of relevant resources and its consistent access), Educational system, and Family and Cultural traditions. Out of these probably, the Educational system and mostly the library system are more effective in the enhancement of use of library resources. The educational system is largely responsible for developing intellect, skills and ideas. On the other hand the library system helps to stimulate thought and emotions in human mind and develop worthwhile tests and local interest on various resources. It also provides fun and escape from mental bonding. Now, from the present study it is intended to add one more important factor i.e. Information Literacy, which has a significant impact on enhancement of use of library resources.

Objectives of the Study

i. To highlight the various factors related to the enhancement of use of library resources,
ii. To determine the relationship between the information literacy and use of library resources,
iii. To determine direct and indirect impact of information literacy in enhancement of use of library resources among the college students.

**Methodology of the Study**

This study is based on conceptual analysis from standard papers, e-resources, etc. as well as descriptive analysis of the current information obtained from the samples (students). The study is quasi-experimental in nature. About 50 students from the Handique Girls’ College have been taken as population for this study. The students in the sample population were undeployed a systematic IL programme. IL classes were taken for two hours in a week for 12 weeks. It is attempted to compare the trends of use of library resources before attending the IL classes and after completion of IL classes. For this one pretest and another post-test was conducted among the above-mentioned students.

**Variables taken into consideration for assessing use of library resources**

**i. Frequency of Library Visit:** From the table 4.1 it is observed that after attending IL programme the number of students visiting library daily and alternative day are significantly increased from 46% (24 + 22) to 80% (50 + 30). Thus it can be inferred that number of students attracted towards library is increased after IL programme.

**Table-1. Frequency of Library Visit**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Frequency</th>
<th>Response in Pre-test</th>
<th>Response in Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Daily</td>
<td>12 (24%)</td>
<td>25 (50%)</td>
</tr>
<tr>
<td>2</td>
<td>Alter native day</td>
<td>11 (22%)</td>
<td>15 (30%)</td>
</tr>
<tr>
<td>3</td>
<td>2 days in a week</td>
<td>19 (38%)</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>4</td>
<td>1 day in a week</td>
<td>5 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>5</td>
<td>Some time</td>
<td>3 (6%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50 (100%)</strong></td>
<td><strong>50 (100%)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**ii. Purpose of visiting the Library:** The table 4.2 reveals that number of students increased from 40% to 70% to visit the library for ‘all purpose’ rather than a ‘particular purpose’. Similarly number of students to study e-resources is also increased from 42% (40 + 2) to 80% (70 + 10).

**Table-2. Purpose of visiting the Library**

<table>
<thead>
<tr>
<th>S.I. No.</th>
<th>Purpose</th>
<th>Response in Pre-test</th>
<th>Response in Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Study in the Reading Room</td>
<td>1 (2%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>2</td>
<td>Borrow Book</td>
<td>2 (4%)</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>3</td>
<td>Both 1 and 2</td>
<td>19 (38%)</td>
<td>8 (16%)</td>
</tr>
<tr>
<td>4</td>
<td>Prepare Note</td>
<td>2 (4%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>5</td>
<td>Read Newspaper &amp; Magazine</td>
<td>5 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>6</td>
<td>Study ye-resources</td>
<td>1 (2%)</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>7</td>
<td>All of the above</td>
<td>20 (40%)</td>
<td>35 (70%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50 (100%)</strong></td>
<td><strong>50 (100%)</strong></td>
<td></td>
</tr>
</tbody>
</table>
Impact of Information Literacy on the Uses of Library Resources: A Study...

- **Time Spent for Study**: From the table 4.3 it can be stated that the reading hour of the students has been increased. It is observed that during posttest the number of students is increased from 60% to 92% who spent 6 or more than 6 hours per day for their study.

**Table 3. Time Spent for Study**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Hours Spent for study</th>
<th>Response in Pre-test</th>
<th>Response in Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>More than 8 hours per day</td>
<td>1 (2%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>2</td>
<td>8 hours per day</td>
<td>7 (14%)</td>
<td>12 (24%)</td>
</tr>
<tr>
<td>3</td>
<td>6 hours per day</td>
<td>22 (44%)</td>
<td>30 (60%)</td>
</tr>
<tr>
<td>4</td>
<td>4 hours per day</td>
<td>19 (38%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>5</td>
<td>Less than 4 hours per day</td>
<td>1 (2%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>50 (100%)</strong></td>
<td><strong>50 (100%)</strong></td>
</tr>
</tbody>
</table>

- **Purpose of study Vs Time**: The table 4.4 reveals that the number of students to study each type of resources is increased in post-test and percentage of time given for various types of reading activities from their total study hours are also increased in posttest. It indicates that the IL programme has an effect on the reading behaviour of the students.

**Table 4. Purpose of study Vs. Time**

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Particulars of Reading Materials</th>
<th>% of time of the total study hours</th>
<th>Percentages of time of the total study hours</th>
<th>Response in Pre-test</th>
<th>Response in Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Read Textbook &amp; Books related Course Curriculum</td>
<td>28 15 7 0 0</td>
<td>50% 40% 30% 20% 10%</td>
<td>35 9 6 0 0</td>
<td>70% 18% 12% 0% 0%</td>
</tr>
<tr>
<td>2</td>
<td>Read Reference Book</td>
<td>0 1 5 10 11</td>
<td>0% 2% 10% 20% 22%</td>
<td>0 4 6 8 13</td>
<td>0% 8% 12% 16% 26%</td>
</tr>
<tr>
<td>3</td>
<td>Novels and other books not related to course curriculum</td>
<td>0 0 0 8 17</td>
<td>0% 0% 0% 16% 34%</td>
<td>2 2 3 12 21</td>
<td>4% 4% 6% 24% 42%</td>
</tr>
<tr>
<td>4</td>
<td>Read Journal</td>
<td>0 0 0 0 14</td>
<td>0% 0% 0% 0% 28%</td>
<td>0 0 2 3 10</td>
<td>0% 0% 4% 6% 20%</td>
</tr>
<tr>
<td>5</td>
<td>E-Resources/Internet</td>
<td>0 0 0 0 18</td>
<td>0% 0% 0% 6% 36%</td>
<td>0 0 5 11 24</td>
<td>0% 0% 10% 22% 48%</td>
</tr>
<tr>
<td>6</td>
<td>Newspaper, Magazine, etc.</td>
<td>0 0 0 0 25</td>
<td>0% 0% 0% 0% 50%</td>
<td>0 0 0 6 29</td>
<td>0% 0% 0% 12% 58%</td>
</tr>
</tbody>
</table>

- **Some Miscellaneous Questions**: From the table 4.5, it is observed that the attitude of the students towards reading as well as library use is increased in post-test. Again the number of respondents is also increased from 60% to 95% regarding positive attitude towards library after they attended the Information literacy programme.
Table-5. Positive responses to some Miscellaneous Questions

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Questions</th>
<th>Response in Pre-test</th>
<th>Response in Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you have experience of using library in your school days?</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>2</td>
<td>Do you feel comfort in seating in the reading room?</td>
<td>70%</td>
<td>90%</td>
</tr>
<tr>
<td>3</td>
<td>Do you consider that library has a conducive environment for study?</td>
<td>65%</td>
<td>95%</td>
</tr>
<tr>
<td>4</td>
<td>Do you feel the reading/studying more interesting if you can access your required document easily?</td>
<td>60%</td>
<td>95%</td>
</tr>
</tbody>
</table>

vi. Mode to Locate books in the library: The table 4.6 reveals that after attending IL programme the number of students using OPAC is significantly increased from 35% to 90% and none of the students seeks assistance from library staff to locate library books.

Table-6. Mode of Locate books in the library

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Modes</th>
<th>Response in Pretest</th>
<th>Response in Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Browsing in the stacks</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>2</td>
<td>Consult OPAC</td>
<td>35%</td>
<td>90%</td>
</tr>
<tr>
<td>3</td>
<td>Seek Assistance from Library Staff</td>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Variables taken into consideration for assessing Information Literacy Standards

If the various data of the table 5 regarding IL standards of the students during pre-test and post-test are compared, it is observed that the IL standard of the students becomes higher after attending IL programme.

i. Efficiency to determine the nature and extent of the information needed: If the efficiency level to ‘determine the nature and extent of the information needed’ is considered, then 50% efficiency level is increased from 16% to 30%; similarly 25% efficiency level is increased from 24% to 48%; 75% efficiency level is increased from 4% to 12%, the 0% (nil) efficiency level is decreased from 56% to 10%.

ii. Efficiency to find needed information effectively and efficiently: If the efficiency level to ‘find needed information effectively and efficiently’ is considered, then 50% efficiency level is increased from 24% to 52%; similarly 75% efficiency level is increased from 4% to 24%; and the 0% efficiency level is decreased from 42% to 2%. 
Table-7 . Information Literacy Standards (Comparing Pre-test and Post-test)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>IL Tasks</th>
<th>Efficiency Level of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre T</td>
</tr>
<tr>
<td>1.</td>
<td>Determines the nature and extent of the information needed</td>
<td>00% 0%</td>
</tr>
<tr>
<td>2.</td>
<td>Finds needed information effectively and efficiently</td>
<td>00% 02%</td>
</tr>
<tr>
<td>3.</td>
<td>Evaluate the quality of information</td>
<td>00% 00%</td>
</tr>
<tr>
<td>4.</td>
<td>Organization and effective use of information for which it is sought for</td>
<td>02% 05%</td>
</tr>
<tr>
<td>5.</td>
<td>Store the information for future use and reference</td>
<td>00% 02%</td>
</tr>
<tr>
<td>6.</td>
<td>Use of e-resources</td>
<td>00% 00%</td>
</tr>
</tbody>
</table>

iii. Efficiency to evaluate the quality of information: If efficiency level to ‘Evaluate the quality of information’ is considered, then 50% efficiency level is increased from 8% to 40%; similarly 75% efficiency level is increased from 0% to 8%; similarly 25% efficiency level is increased from 12% to 32%; and the 0% efficiency level is decreased from 80% to 20%.

iv. Efficiency for organization and effective use of information for which it is sought for: If efficiency level for ‘organization and effective use of information for which it is sought for’ is considered, then 50% efficiency level is increased from 22% to 32%; similarly 75% efficiency level is increased from 8% to 18%; 100% efficiency level is increased from 4% to 10%; and 25% efficiency level is decreased from 50% to 38%; and the 0% efficiency level is decreased from 16% to 2%.

v. Efficiency to store the information for future use and reference: If efficiency level to ‘store the information for future use and reference’ is considered, then 50% efficiency level is increased from 22% to 48%; similarly 75% efficiency level is increased from 10% to 16%; 100% efficiency level is increased from 0% to 4%; and 25% efficiency level is decreased from 50% to 32%; and the 0% efficiency level is decreased from 18% to 0%.
vi. Efficiency to use of e-resources: If efficiency level to ‘use of e-resources’ is considered, then 50% efficiency level is increased from 14% to 40%; similarly 75% efficiency level is increased from 0% to 4%; and 25% efficiency level is increased from 42% to 54%; and the 0% efficiency level is decreased from 44% to 2%.

Discussion

From the analysis of the various data in the tables it is found that during post-test i.e. after attending the Information Literacy programme, the Information Literacy standard of the students become higher. Similarly, the attitude of the students towards library has been changed and most of them are considering the library as a favourable place for study. A major portion of the students have now started to visit the library regularly and the purpose of visit the library is to study the library resources. The time spent for study has been significantly increased and most of them have shown their interest in reading. They have converted their visit to the library a purposeful visit and have started the practice of regular use of library resources. This, it can be summarized that the IL programme inspires and motivates the students towards use of library resources and if the students become Information Literate then it helps the students to keep themselves in the track of regular use of library resources and in the long run it will convert the casual user to a regular and serious user of library resources.

Since the present matter is a long term biological and spontaneous process and it requires a long journey of practice, it obviously need a long term study to forward a concrete resolution regarding impact of IL on the enhancement of use of library resources.

References & Bibliography

Media and Information Literacy: A Pragmatic Learning Approach

Nirmal Chandra Uniyal; Prem Prakash Sati

Abstract

This paper introduces the importance of Media and Information Literacy (MIL) to access, evaluate and use of media information. Now-a-days Media and Information Literacy is indispensable for one’s effective survival in the digital world as the modern formats of information are changing the scenario of teaching and learning system. MIL is considered as the ability to think critically, to access, evaluate and use media efficiently. It enhances decision-making and helps to build competitive societal intellectual capabilities. Purpose of MIL is supportive, innovative, and collaborative in nature to enhance the critical thinking ability of the individuals.

Keywords

Critical Thinking, Media Formats and Technology, Media and Information Literacy.

Introduction

Meaning of the word “Literacy” varies depending on the format or the medium used where explicit knowledge is arranged or embedded to communicate to the individual or the society. Media may be print or electronic to convey the message but degree of evaluation of coded message may have some different meaning from the original one. Discerning competence to evaluate meaningful messages depends on individual’s insight or level of critical thinking. Messages are conveyed via various modes of formats namely newspapers, magazines, radio, television, film and the Internet etc. Media and Information Literacy (MIL) is a combination of information Literacy and media literacy. Media literacy is conceptualized as the knowledge and skills of the individuals to analyze, evaluate or produce media messages. Information literacy actually involves the integration of various forms of literacy such as library expertise, computer skills, ethics, critical thinking and communication. The purpose of being a Media and Information literate is that to engage in a digital society, one needs to be able to use, understand, inquire, create, communicate and think critically. The transformative nature of MIL includes creative work and new knowledge. Publishing and collaborating responsibly require ethical, cultural and social understanding.
Information literacy

Information literacy as a means to “Empower people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals”. (Alexandria Proclamation, 2005)

Media literacy

Media literacy implies having access to the media, understanding the media and creating/expressing oneself using the media (Buckingham, Livingstone 2005).

Perspective and background

Media literacy is the ability to understand and evaluate the embedded information in various kinds of formats like audio and visual symbols received via television, radio, computers, newspapers, magazines and, of course every day, advertisements and to draw personal inferences from them which depends on individual’s insight. According to Gloria J. Leckie and Anne Fullerton (1999) stated that media and Information Literacy is a self-directed learning, for both teachers and students. Diane Mittermeyer Diane Quirion (2003) stated that at the first year students of university have lack of ability to retrieve the relevant information from the sources. The study is focused on first year students’ basic information skills rather than in-depth knowledge needed within a research context. Horton, Forest Woody (2007) expressed that at media literate person should have enough understanding and skills to evaluate the information in various kinds of formats e.g. pdf, html, text, JPEG etc. and they should have the ability to evaluate the meaningful message from media. Tan, Shyh-Mee and Daljit Singh (2008) in his study described that at the knowledge level of school library media teachers in Hulu Langat District, Malaysia were either on average or below average level with respect to information literacy due to lack of training. The authors are of the view that trained Librarian and media teachers should take initiative to integrate information literacy into the teaching and learning process and become a role model for students. Lian, Huay Lim and Yin Leng Theng (2011) described that at youth of Singapore are more exposed to new media as an entertainment and communication choice. They have overall fair level of skills acquired to consume that at media information than creation. However, the students were not comfortable with rapidly changing technologies, and hence lack of media production skills to enable them to produce meaningful media content confidently. Studies have confirmed that they preferred to get help from friends, more than their teachers, if encountered problems with gadgets. They were not sure of available Web tools e.g., Wiki, Twitter, RSS, Mashup, Virtual world, etc. The study is significant to make such policies which ought to help enhance education literacy and trainings etc. Paris Declaration ‘Media and Information Literacy in the Digital Era’ held in Paris from 27 to 28 May 2014 emphasized that MIL need of the hour in the digital world where digital information is overloaded. Social media is creating an environment globally for public participation in this digital age. Growth of digital content with new media technologies is an ever-growing process. Simultaneously Media and Information Literacy awareness is imperative to educate the masses. The declaration highlights global participation of stakeholders which include Media, information and ICT companies for their involvement
in media and information literacy through Corpora te Social Responsibility (CSR), contribu tion of journalists, libraries, audio-vis ual auth orities, MIL research commun ity, civil society etc. are welcome to fill the media and information literacy gap to utilize the media effectively and ethically.

Need of Media and Information Literacy

Universal Declaration of Human Rights Article 19 of United Nations states that ‘Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions with out interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.’ Media and Information Literacy (MIL) equips citizens with competencies needed to seek and enjoy the full benefits of this fund amental human right. The exponential growth of digital information and its extensive use, the focus on lifelong learning, and the demand for highly skilled teachers and trainers is required to make the students more literate about how to access the relevant information by using different media to develop their intrinsic skills to enhance their capability to make right approach to succeed in their academic and future professional endeavours. Stud ents are major users of media technologies and are being benefit ed to access the desired information through variety of media and search engines. At the same time they are lacking the critical thinking skills required to successfully evaluate the original meaning of information available on web, a critical aspect of information literacy. It has also been explained in European Commission stud y on current trends and approaches to media literacy in Europe th at the aim of media literacy is to increase awareness of the many forms of media messages encountered in everyday life. It should help citizens to recognize how the media filter their perceptions and beliefs, shape popular culture and influence personal choices. It should empower them with the critical thinking and creative problem-solving skills to make them judicious consumers and producers of content. Media literacy is part of the basic entitlement of every citizen in every country in the world, to the freedom of expression and the right to information and it is instru mental in building and sustaining democracy. It is only the media that has made citizens more proactive. Informed people are contributing more information to make the people more informed. Media is performing a great service of rapid information transfer to the citizens. People who are informed but deprived digitally are unfortunate to retrieve the right information from a right media which they can access, evaluate and use critically at the right time.

Discussion and implications

Media literacy relates to all media, including television, radio, mobile phone, recorded music, print media, the Internet and other new digital communication technologies. Mobile cell phone, internet, and social media technologies are changing the scenario of teaching and learning system. Thus, the pedagogical practices should also be revolutionized due to excessive use of digital contents, media advertisements and use of various kinds of media for teaching and learning practices. Now, the question arises as regards to the understanding of the media messages. Are the students really able to understand the exact meaning of the text, voice, pictures, advertisements and movies etc.? Students are using media devices to access the information on one click and are entertaining the information without applying
critical thinking onto the information retrieved. There is huge digital information available over web that misguides and misleads the students. Media information has its own merits and demerits, various kinds of commercial frauds in education like admission, placements, immigration, foreign collaboration and educational awards are being flourished due to lack of media literacy. Misleading and misguiding messages and information around students’ education environment is dangerous for their future endeavours. UNESCO is very much concerned about media literacy after information literacy. UNESCO has taken an initiation to merge both the concepts and prepared a new term Media and Information Literacy (MIL) keeping in view the importance of both the literary media in print as well as digital. Media and Information literacy needs to be implemented in technological institutes for value addition in teaching-learning prospects while everything is being transfiguring into digital media environment.

Conclusion

In the modern society the media has an impact on students’ education and day-to-day life. Therefore, the purpose of the study is to analyze how far media affect the students’ learning environment and how media literacy programme will be fruitful to enhance the media awareness and its pedagogical application in education which empowers students’ critical thinking and creative problem-solving skills to make them careful consumers and producers of the media messages. Media and information literacy is an emerging field as students are devoting 5 to 6 hours daily to explore information and are also dependent on media for their course material, communication, information sharing, discussions, entertainment, and day-to-day activities, etc. To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. (ALA, 1989) The significance of being information and media literate is to engage in a digital society. One needs to be able to use, understand, inquire, create, communicate and think critically. It is important to have capacity to effectively access, organize, analyze, evaluate, and create messages in a variety of formats. The transferative nature of media and information literacy includes creative works and creating new knowledge. To publish and collaborate responsibly requires ethical, cultural and social understanding.

References


Abstract

The emergence of internet has added a new dimension to information technology which gives birth to the new concepts of Digital Libraries. A Digital Library is a Library in which a significant proportion of the resources are available in Machine-readable format accessible by means of Computers. The digital content may be accessed through computer networks. Digital libraries menace managed collection of information with associated services, where the information is stored in digital formats and accessible over network. Digital libraries offer greater opportunities for users to deposit and use information. Libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities. The present paper gives an overview what are the Digital Libraries.

Keyword


Introduction

A Digital Library is a Library in which a significant proportion of the resources are available in Machine-readable format accessible by means of Computers. The digital content may be accessed through computer networks. An informal definition of a Digital Library is a “Managed collection of information with associated services, where the information is stored in digital formats and accessible over network”. A crucial part of this definition is that the information is managed. A stream of data sent to earth from a satellite is not a Library. The same data when organized systematically becomes a digital library collection.” (William Arms)

What are Digital Libraries?

Digital Libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are
readily and economically available for use by a defined community or set of communities.
(Digital Libraries Federation)

Why should we have digital library

• To improve graduate education
• To increase the knowledge of users and to better prepare the students
• To decrease costs, increase services
• To unlock institutional information
• To enhance organization’s infrastructure

What are the contents of a Digital Library?

• Text documents
• Video, Audio
• Images and graphics
• Articles, reports and Books
• Speech, Music
• Online tutorials

What can form the collections of a Digital Library in an organization?

• Staff publications
• E-Journals
• E-Books
• Reports
• Project reports
• Presentations
• Course wears
• Lectures

In Libraries, the process of digitization began with the catalog, periodical indexing, abstracting services, then reference works, finally to Article publishing. There are many advantages and disadvantages of Digital Libraries.

Advantages

Traditional Libraries are limited by storage space; digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain it. As such, the cost of maintaining a digital library is much lower than that of a traditional library. A traditional library spends large sums of money paying for staff, books maintenance. Digital libraries can immediately adopt innovations in technology providing users with improvements in electronics and audio book technology as well as presenting new type of communication.

No Physical boundary—The user of a digital library need not to go to the library physically; people from all over the world can gain access to the same information, as long
as an Internet connection is available.

**Round the clock availability** — The major advantage of digital libraries is that people can gain access to the information at any time night or day.

**Multiple access** — The same resources can be used at the same time by a number of users. Digital libraries provide access to much richer content in a more structured manner, i.e., we can easily move from the catalog to the particular book then to a particular chapter and so on.

**Preservation is very easy** — An exact copy of the original can be made any number of times without any degradation in quality. Regarding space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them. When a library has no space for extension digitization is the only solution.

**Networking** — A particular digital library can provide a link to any other resources of other digital libraries very easily, thus resource sharing can be achieved.

**Disadvantages**

Digital libraries cannot maintain the environment of a traditional library. Many people also find reading printed materials to be easier than reading material on a computer screen.

**Conclusion**

Digital libraries are characterized by equitable access, reduced barriers of distance, timeliness, shared resources, a content delivery. They can also support publicity and integration of new information. They can provide large access to a large quantity of collations of primary and secondary documents. Besides this digital libraries offer greater opportunities for users to deposit and use information.

**Reference**

3. [www.inflibnet.ac.in](http://www.inflibnet.ac.in)
Bibliometric Study of MLISc Dissertation in Swami Ramanananad Teerth Marathwada University, Nanded

PAWAR G. R.

Abstract

This article presents the information about the dissertation submitted by the student of MLISc to S.R.T. M University, Nanded, Maharashtra and details of bibliographic analysis of dissertation has presented this article.

Introduction

Advancements of information and communication technologies over the past two decades have changed significantly the way that information is disseminated and accessed, impacting scholarly communications. Bradford’s law is a pattern first described by Samuel C. Bradford in 1934 that estimates the exponentially diminishing returns of extending a search for references in science journals. One formulation is that if journals in a field are sorted by number of articles into three groups, each with about one-third of all articles, then the number of journals in each group will be proportional. There are a number of related formulations of the principle.

Bibliometric

Bibliometric study has been done by following researcher Dalve, Daya B., (2004). Literature use pattern by the researcher in social science: A Bibliometric Analysis of Doctoral thesis has worked on the bibliometric study and she has taken 176 thesis 49381 citation for the bibliometric study. Khokale, Revati R., (2005). Bibliometric Analysis of Ph.D. thesis awarded by Amravati University, Amravati: A study of information flow in some selective disciplines in this study 142 research articles are taken and 18579 citation are included for the research.

Scope and limitations of research

Following are scope and limitation of research:

1. In limited area of S.R.T. M.U., Nanded.
2. In library and information science university department and affiliated colleges in S.R.T. M.U., Nanded.

Objectives of research
1. To make a list of library and information science of M.L.I.Sc. As per subject of dissertation as per researcher and guide.
2. To inspect bibliometrics scope in dissertation as per Bradford’s theory in M.L.I.Sc.
3. To study types of writers, researchers and Guides.
4. To find out which periodicals used mostly in it.
5. To decide proper rank of periodicals which are illustrated in dissertation 6. Find out years in which mostly periodicals illustrated
6. In dissertation find out national periodicals.
8. To classify dissertation as per subject-wise in library and information science. 9. To classify dissertation as per subject-wise in library and information science.

Research method
While collecting information there is going to be used catalogue cards methods of research dissertation information of front page and reference books; Bibliography has been written on 5x3 Catalogue cards and it elaborates as per description.

Hypothesis
Following are the hypothesis
1. Citation elaborated according to the Bradford’s law.
2. Indian periodicals used mostly.
3. Mostly books are used of Indian writers.
4. Published material progressed in library and Information science. 5. Mostly citation used by single writer books.

Data Analysis and Interpretation
1. College development subject has more 65 No. (18.15 %) dissertation published to university.
2. Library case study subject has 47 (13.12 %) Dissertation submitted.
3. Physical Education and informal education has one one dissertation submitted to university.
Table 1. Subject-wise Distribution

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Subject wise Dissertation Analysis</th>
<th>No of Dissertation</th>
<th>Percentage</th>
<th>Total Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>College Development</td>
<td>65</td>
<td>18-15</td>
<td>65</td>
</tr>
<tr>
<td>2</td>
<td>Library Study</td>
<td>47</td>
<td>13-12</td>
<td>112</td>
</tr>
<tr>
<td>3</td>
<td>Reading habits</td>
<td>45</td>
<td>12-56</td>
<td>157</td>
</tr>
<tr>
<td>4</td>
<td>Information Technology</td>
<td>27</td>
<td>7-54</td>
<td>184</td>
</tr>
<tr>
<td>5</td>
<td>Evaluation of Library Service Rendered</td>
<td>25</td>
<td>6-98</td>
<td>209</td>
</tr>
<tr>
<td>6</td>
<td>Citation Analysis</td>
<td>20</td>
<td>5-58</td>
<td>229</td>
</tr>
<tr>
<td>7</td>
<td>Information Analysis</td>
<td>18</td>
<td>5-02</td>
<td>247</td>
</tr>
<tr>
<td>8</td>
<td>User needs</td>
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<td>9</td>
<td>Case Study</td>
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<td>Comparative Study</td>
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<td>Evaluation of Periodical</td>
<td>08</td>
<td>2-23</td>
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<td>17</td>
<td>User Survey</td>
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<td>1-67</td>
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<tr>
<td>18</td>
<td>Analysis of Reference</td>
<td>03</td>
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<td>356</td>
</tr>
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<td>19</td>
<td>Physical Education</td>
<td>01</td>
<td>0-27</td>
<td>357</td>
</tr>
<tr>
<td>20</td>
<td>Informal Education</td>
<td>01</td>
<td>0-27</td>
<td>358</td>
</tr>
</tbody>
</table>

Total 358 100

Chronological Analysis of Dissertation

S R.T. University, Nanded Library and Information Science subject for degree of MLISc chronological order of the dissertation is shown in following tables.

Table-2 Chronological Distribution of Dissertation

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Chronology</th>
<th>Dissertation No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1999 - 2000</td>
<td>11</td>
<td>3-07</td>
</tr>
<tr>
<td>2</td>
<td>2000 - 2001</td>
<td>15</td>
<td>4-18</td>
</tr>
<tr>
<td>3</td>
<td>2001 - 2002</td>
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<td>3-35</td>
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<tr>
<td>4</td>
<td>2002 - 2003</td>
<td>28</td>
<td>7-82</td>
</tr>
<tr>
<td>5</td>
<td>2003 - 2004</td>
<td>21</td>
<td>5-86</td>
</tr>
<tr>
<td>6</td>
<td>2004 - 2005</td>
<td>26</td>
<td>7-26</td>
</tr>
<tr>
<td>7</td>
<td>2005 - 2006</td>
<td>22</td>
<td>6-14</td>
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<td>8</td>
<td>2006 - 2007</td>
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<td>9</td>
<td>2007 - 2008</td>
<td>35</td>
<td>9-77</td>
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<td>10</td>
<td>2008 - 2009</td>
<td>42</td>
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<td>11</td>
<td>2009 - 2010</td>
<td>49</td>
<td>13-68</td>
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<td>12</td>
<td>2010 - 2011</td>
<td>66</td>
<td>18-43</td>
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</table>

Total 358 100
S. R. T. University, Nanded library and information science subject for degree of MLISc chronological order. SRT University, Nanded has submitted dissertation by student from the year 1999 to 2011 as following 1999 to 2011 total no of dissertation submitted to university are 358 in the year highest no of the dissertation are published in the year 2010 -2011 at the percentage of 66 (18.43%) and less no of dissertation submitted in the year 199 -2000 -11 (3.07%)

Researcher wise Dissertation Analysis

Table-3.

<table>
<thead>
<tr>
<th>Sr No.</th>
<th>Researcher</th>
<th>Total Researcher</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
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<td>63-40</td>
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<tr>
<td>2</td>
<td>Female</td>
<td>131</td>
<td>36-59</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>358</td>
<td>100</td>
</tr>
</tbody>
</table>

Described that most of the researcher are male and less on of the researcher are female as 227 are male and 131 are female.

Guide Wise Distribution

In this dissertation of MLISc Guide are as following:

Table-4. Guide Wise Distribution

<table>
<thead>
<tr>
<th>Sr no.</th>
<th>Researcher Guide</th>
<th>Guided</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>324</td>
<td>90-50</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>34</td>
<td>9-50</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>358</td>
<td>100</td>
</tr>
</tbody>
</table>

1. Total no of Guide are 358
2. Most of the Guide are male percent age is 324 (90.50 %)
3. Less no female of guide are 34 (9.50 %)

Conclusion

There are some important recommendations about this research.

1. Mostly 65 (80.15 %) dissertation presented on this topic of college development.
2. Men researchers are more numbers in 227.
3. Women researchers are in number 131.
4. Men guides numbers are 324.
5. Women guides numbers are 34.
Biblimetric Study of MLISc Dissertation in Swami Ramanand Teerth Marathwada...

Reference

Cloud Computing: An Overview

PRAVEEN KUMAR PAN DEY

Abstract

The present paper describes concept of cloud computing. Its model advantage of cloud computing information and communication technology impact positively on library service and day by day change its service scenario. Knowledge information should be repacked and knowledge becomes information when it is externalized i.e. put into the process of communication. The paper has suggested/listed the importance and characteristics of the ICT in (LIS) library information service and component of cloud computing benefits and drawback of the technology. Cloud computing is an excellent alternative for educational institutions which are especially under budget shortage in order to operate their information systems effectively without spending any more capital for the computers and network devices. Cloud computing brings the revolutionary changes in the world of information and communication technology because of its potential benefits. Such as reduced cost, accessible anywhere any time, as well its elasticity and flexibility.

Keywords


Introduction

The present era is the era of knowledge society. The whole world connected to each other through internet. Cloud computing has given access to its consumers and business to use applications without installations and access their personal files at any computer with internet access. Whether they are using Google’s, Gmail, organizing photos, on Flickr or searching the web with binge they are engaged in cloud computing is not something that suddenly appear over night; in some form it may track back to a time when computer system remotely time shared computing resources and applications. The cloud computing model allows access to information and computer resources from anywhere that a network connection is available. In this user can pay as he/she uses the programs and can work from home, office or any other place. In cloud computing environment multiple users can access a single server to retrieve and update their data with out purchasing any licenses for different kind of applications but also can make more extensive use of cloud computing to other work life.

Cloud Computing is a web based service, where a user (client) can access and manipulates
files available in data servers. The Gartner group defines cloud computing as “A style of computing in which massively scalable and elastic IT enabled capabilities are delivered as a service to external customers using internet technologies.” The core concept of cloud computing is quite simple: at the vast computing resources that we need will reside somewhere. Cloud computing represents an exciting opportunity to bring on demand applications to digital library.

Type of cloud computing

Deploying cloud computing can differ depending on requirements and the following four deployment models have been identified each with specific characteristics that support the need of the service and uses of the cloud in particular ways.

- **Private cloud**: Private cloud is cloud infrastructure operated solely for a single organization, whether managed internally or externally. Undertaking a private cloud project requires a significant level and degree of engagement to virtualize the business environment and it will require the organization to reevaluate decisions about existing resources. When it is done right it can have a positive impact on a business, but every one of the steps in the project raises security issues that must be addressed in order to avoid serious vulnerabilities.

- **Public cloud**: This cloud infrastructure is available to the public on a commercial basis by a cloud service provider. These services are free or offered on pay-per-use model. The benefit of moving to public cloud is that the user does not have to worry about security, managing IT infrastructure, upgrade of software etc.

- **Hybrid cloud**: The Hybrid cloud is a mixture of public and private cloud that remains unique but bound together by standardized proprietary technology enabling data and applications portability. Hybrid cloud is based on distinct identities but bound together, offering the benefits of multiple deployment models. By utilizing “Hybrid Cloud” architecture companies and individuals are able to obtain degrees of fault tolerance combined with locally immediate usability with out dependency on internet connectivity.

- **Community Cloud**: The cloud infrastructure is shared among a number of organizations with similar interests and requirements. This may help limit the capital expenditure costs for its establishment as the costs are shared among the organizations. The operation may be in-house or with a third party on the premises.

Classification of Cloud Services

Based upon the service offered cloud can be classified into the following three categories.

Repository in the cloud

1. **Dora Space**—Dora space is an organization now over both space and Fedora.
2. **Dspace**—Space is an intuitive repository application.
3. **Dora cloud**—Dora cloud shared hosting repository platform.
Area of library where cloud computing can be applied

- Automation of housekeeping operations
- Commit librarians can be used amongst the members of libraries that can be installed on cloud.
- To provide proper training programmes through cloud.
- With the help of cloud computing we can develop regional or private repositor y.
- Web OPAC can be uploaded on cloud, with the help of cloud our dedicated user can search proper document on any place of the world.
- Sharing of e-resources through cloud computing.

Advantage of cloud computing

The obvious huge advantage is that you no more have to support the infrastructure or have the knowledge necessary to develop and maintain the infrastructure. Cloud computing offers numbers of advantages both to end users and organization of all sizes.

- **No hardware required:** Again a backup could be work looking into the event of a disaster that could leave your company’s productivity stagnant. A physical storage center is no longer needed as it is hosted in the cloud computing.
- **Full text information:** A number of journals.
- **Automatic software integration:** Has been published individual or as connection of full text articles, this means that you do not need to take additional efforts to customize and integrate your applications as per your preferences. In cloud computing software integration is usually something that occurs automatically. This aspect usually takes care of itself.
- **Electronic documents service:** Scanning process involved the conversion of paper to electronic image with the help of page scanner the supply of information can be verified.
- **Increased storage capacity:** It eliminates worries about running out of storage space and at the same time. The cloud can accommodate and store much more data compared to a personal computer and in a way offers almost unlimited storage capacity. It spares businesses the need to upgrade their computer hardware, further reducing the overall IT cast.
- **Online commercial library:** Online library where an individual can read books at their comfort and have a broad range of subject.
- **Backup and recovery:** The process of backing up and recovering data is simplified since these now reside on the cloud and not on a physical device. With the help of cloud computing we can store huge amount of data in another location and no fear of data or information lost.
- **Real simple indication:** It will keep user adjourned of all latest news. (RSS) allows a producer of information to broadcast the information across internet.
- **Bulletin board:** The BBS is a mini anchor form of an online system for a cost effective distribution of information in a electric format.
Disadvant ages of cloud comput ing

- Various technical issues
- Dependency on service provider
- Prone to att ac h various problems
- Risk of data loss
- Budget and time are constraints.

Use of cloud comput ing in libr ar y and information science

The cloud comput ing pushes hardware to more abstract levels. Cloud comput ing has made strong in roads into other commercial sectors and is now beginning to find more application in libr ar y and information science. Most of us are ac quainted with fast comput ing power being delivered from system th at we can see and touch.

- Cloud Infrastructure i.e. infrastructure as a service (IOSS): Your libr ar y out sources the equipment used, including storage, hardware, servers and networking components. The service provider owns the equipment and is responsible for housing, running and maintaining it. In India un availability of well it expert is biggest problem. A variety of services are now available like Amazo n web services, windows Azure, and Google comput e engine.
- Cloud platform i.e. Platform as a Service (PAAS): Specialized Appl i cs for building applications over the internet, like Google, App Engine. In out mut ed libr ar y various type of software is required to perform for various type of task related to libr ar y We know very well in India libr ar y suffers from lack of budget. Leading service providers th at offer PAAS are Amazo n elastic Beanstalk, Google, APP and Microsoft Azure.
- Cloud software i.e. software as a service (SAAS): In this service vendor provide a platform for interlining the software programmes. A single instance of the service runs on the cloud & multiple end users are serviced. On the customer side, there is no need for upfront investment in servers or software licenses while for the provider. The costs are lowered. Since only a single applications needs to be hosted and maintained.

Use of cloud comput ing in libr ar y and information science

The cloud comput ing pushes hardware to more abstract levels. Cloud comput ing has made strong in roads into other commercial sectors and is now beginning to find more application in libr ar y and information science. Most of us are ac quainted with fast comput ing power being delivered from system th at we can see and touch.

Some Live examples where Librareis are adopting Cloud Comput ing

1. OCLC:—OCLC online Comput er Librar y Centre is a nonprofit, membership, comput er libr ar y service and research organization dedicated to the pub lic purposes of furthering access to the world’s information and reducing the rate of rise of libr ar y costs. In the work’s OCLC has been functioning as a culd comput ing vendor. They provide cataloguing tools over the Internet and allow member institut ion to
draw on their centralized data store.

II. Library Thing:—It is one of the sites that combine aspects of social networking and cloud computing. Kobr y Thing, originator of which is Tim Spalding. Librar y Thing offers servives which are just like social networking site, auth orizes people to contribute information and suggestion about books and allows them to intere-connect globally to share interests.

III. Reed Elsevier:—Reed Elsevier is a service provider for scientific information working with hospitals to provide point in time information to medical technicans as they need the information. It is capitalizing on the cloud computing model. There is the possibility to place monographic and article content or even technical manuals so th at technician and other medical personnel can get assistance exactly when they need it.

Conclusion

Cloud computing is an emerging computing application available over internet. Careful attention to design will help ensure a successful development. Cloud computing has enabled terms and organizations to streamline lengthy procurement process. In today’s information society, librar y have the opportunity to improve their services with the help of cloud computing. Cloud computing is very important tools for every librarian. But cloud computing is in a period of strong growth, so this technology is still has some issues of security and somewhat it is immature. It is one path for this move into the future which brings numerous advantages for libraries. The cloud computing will play a big role in not only in automation of librar y services in present financial constraint for all types of libraries especially in India but also in Governance of different sector such as education. Information and communication technology is the basic requirement for establishing the cloud application for the librar y users.

References

Opportunities for Professional Development of Female Librarians in Uttarakhand: Conferences and Research Work

Punam Chauhan

Abstract

The present study aims to investigate the opportunities for professional development of female librarians in Uttarakhand, on the basis of conferences and encouragement for research. It is a survey-based study and the Survey method is used to collect the data. To know the satisfaction level in the analysis on the basis of opportunities for professional development, the strongly satisfied as well as satisfied have been added together and the satisfaction level of the respondents has been found thereafter. The significance of correlation comes 0.01 levels and 0.05 levels. The Correlation of 0.01 levels and 0.05 levels indicates the reliable percentage which is 98 and 95. The analyzed ‘t’ value shows, the opportunities for professional development were found to be significant at 0.05 per cent level of probability. After all these tests, positive results were found and on the basis of opportunities for professional development of the acquired results it can be, safely, said that the opportunities for professional development is satisfactory of female librarians in Uttarakhand.

Keywords

Job Satisfaction, Female Librarians, Professional Development, Conferences and Encouragement for Research.

Introduction

The female of today has become career-oriented and knows what she wants. She is self-confident and breaking existing male-dominated structure by finding fissures in their citadels. During last three decades, there was more than threefold increase in the enrollment of female students for higher education. The changes that are currently taking place in the status and role of women everywhere have been viewed from two angles: firstly roles in the family and secondly in the community. The irony is that this fact is not officially recognized. Statistics on work-force participation rates continue to show low figures for women workers. For instance, according to UNDP report about Indian women in 2001 only 22% of women
in rural India were recorded as workers by end of 1997. National data collection agencies accept the fact that there is a serious und er-estimation of women’s contribution as workers—the National Sample Survey calculates that as many as 17% of rural women and nearly 6% of urban women are incorrectly recorded as “non-workers”.

Women share approximately fifty per cent of the population of India. An estimation states there were 564,471,213 women in India in 2010 out of 1,173,108,018. Their rights and roles in our society are on a par with the male members. In between 30th March 2010 to 9th March 2010, the upper house of the Indian Parliament, the Rajya Sabha, passed the bill on the reservation of 33 per cent seats in the Lok Sabha, for India’s women representatives. This has been hailed as a historic step towards a constitutional amendment that would ensure significant representation of the women of India, in the Parliament. Currently, a population of almost 500 million Indian women is represented by less than 60 elected representatives, out of the 545 Lok Sabha seats. If this bill is implemented, the number of women representatives would increase three times to 181. This would grossly enhance their role in decision-making for masses. After independence, they acquired equality with men legally and constitutionally.

Estimation for 2010, there will be 1000 women per 1080 men. Regardless of caste, class or age, most Indian women are expected to be responsible and account able for the invisible and unpaid work within the home. Women’s right to work outside the home, on the other hand, cannot always be taken for granted. For women in India, as ever ywhere else, the right is to gain her employment. For many women, work provides the only opportunity to step outside the four walls of the home, and to meet and interact with other women. If it is work that earns a significant wage and builds self-esteem, and if she is able to exercise control over her income, work can enable a woman to increase her autonomy and bargaining power within the family.

Need of Study

The main purpose of this research is to understand the determinants of the work performance and opportunities for professional development among female library professionals in Uttar Pradesh.

Objective

- This study aims for investigating the opportunities for professional development of female library professionals in Uttar Pradesh.
- To investigate the participation of females in Library Science profession in Uttar Pradesh.

Scope of Work

The present study highlighted to investigate the opportunities for professional development of female library professionals in Uttar Pradesh. In due course of study, the research and university libraries are identified from Uttar Pradesh and data is collected from the concerned professionals.
List of the Universities and Research Centers in Uttar Pradesh and the Number of respondents

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the University of Uttar Pradesh</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Aligarh Muslim University, Aligarh, U.P.</td>
<td>12</td>
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<tr>
<td>2.</td>
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<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Babasaheb Bhimrao Ambedkar University, Lucknow, U.P.</td>
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<tr>
<td>4.</td>
<td>Banaras Hindu University, Varanasi, U.P.</td>
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<tr>
<td>5.</td>
<td>Bhatkhande Music Institute, Lucknow, U.P.</td>
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</tr>
<tr>
<td>6.</td>
<td>Bundelkhand University, Jhansi, U.P.</td>
<td>2</td>
</tr>
<tr>
<td>7.</td>
<td>Central Institute of Higher Tibetan Studies, Varanasi, U.P.</td>
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<td>8.</td>
<td>Chaudhary Charan Singh University, Meerut, U.P.</td>
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<tr>
<td>9.</td>
<td>Chanda Shekhar Azad University of Agriculture &amp; Technology, Kanpur, U.P.</td>
<td>4</td>
</tr>
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<td>10.</td>
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<td>11.</td>
<td>Dayalbagh Educational Institute, Agra, U.P.</td>
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<td>Deendayal Upadhyaya Gorakhpur University, Gorakhpur, U.P.</td>
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<td>13.</td>
<td>Dr. Bhim Rao Ambedkar University, Agra, U.P.</td>
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<td>Dr. Ram Manohar Lohia Avadh University, Faizabad, U.P.</td>
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<td>15.</td>
<td>Indian Institute of Information Technology, Allahabad, U.P.</td>
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<td>16.</td>
<td>Indian Institute of Technology, Kanpur, U.P.</td>
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<td>18.</td>
<td>Jaypee Institute of Information Technology (JIIT), Noida, U.P.</td>
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<td>19.</td>
<td>King George's Medical University, Lucknow, U.P.</td>
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<td>20.</td>
<td>M.J.P. Rohilkhand University, Bareilly, U.P.</td>
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<td>22.</td>
<td>Motilal Nehru National Institute of Technology, Allahabad, U.P.</td>
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<td>23.</td>
<td>Narendra Deva University of Agriculture &amp; Technology, Faizabad, U.P.</td>
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<td>Sampurnanand Sanskrit Vishwavidyalaya, Varanasi, U.P.</td>
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<td>Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, U.P.</td>
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<td>Sardar Vallabh Bhai Patel University of Agriculture &amp; Technology, Meerut, U.P.</td>
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<td>29.</td>
<td>University of Lucknow, Lucknow, U.P.</td>
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<td>30.</td>
<td>Uttar Pradesh Technical University, Lucknow, U.P.</td>
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<tr>
<td>31.</td>
<td>V.B.S. Purvanchal University, Jaunpur, U.P.</td>
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</tr>
</tbody>
</table>
List of Research Centers in Uttar Pradesh

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Research Center in Uttar Pradesh</th>
<th>Number of Respondent</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Central Research Institute of Horticulture for Northern Plains, Lucknow, U.P.</td>
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<tr>
<td>2.</td>
<td>Center Institute of Medicinal &amp; Aromatic Plant, Lucknow, U.P.</td>
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</tr>
<tr>
<td>3.</td>
<td>Central Soil Water Conservation Research Training Institute, Research Center, Agra, U.P.</td>
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</tr>
<tr>
<td>4.</td>
<td>Central Avian Research Institute, Izen, t nagar, U.P.</td>
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</tr>
<tr>
<td>5.</td>
<td>Central Drug Research Institute, Lucknow, U.P.</td>
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<tr>
<td>6.</td>
<td>Central Jalma Institute for Leprosy, Agra, U.P.</td>
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<td>CIS H Dilkusha, Lucknow, U.P.</td>
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<td>8.</td>
<td>Cost of Cultivation Scheme, R.B.S. College Physical Science Building, Bechpu ri, Agra, U.P.</td>
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<tr>
<td>9.</td>
<td>Defence Materials and Stores Research and Development Establishment (DMsDE), Kanpur, U.P.</td>
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<tr>
<td>10.</td>
<td>Indian Grassland Fisheries Research Institute, Jhansi, U.P.</td>
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<tr>
<td>11.</td>
<td>Indian Institute of Sugarcane Research, Lucknow, U.P.</td>
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<td>12.</td>
<td>Indian Institute of Pulses Research, Kanpur, U.P.</td>
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<td>13.</td>
<td>Indian Veterinary Research Institute, Izen, t nagar, U.P.</td>
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<td>14.</td>
<td>Industrial Toxicology Research Center, Lucknow, U.P.</td>
<td>0</td>
</tr>
<tr>
<td>15.</td>
<td>National Botanical Research Institute, Lucknow, U.P.</td>
<td>0</td>
</tr>
<tr>
<td>16.</td>
<td>National Bureau of Fish Genetic Resources, Lucknow, U.P.</td>
<td>0</td>
</tr>
<tr>
<td>17.</td>
<td>NRCoM (National Research Center on Meat) Indian Veterinary Research Institute, Campus, Izen, t nagar, Bareilly, U.P.</td>
<td>2</td>
</tr>
<tr>
<td>18.</td>
<td>Project Directorate on Cropping System Research Center, Meerut, U.P.</td>
<td>1</td>
</tr>
<tr>
<td>19.</td>
<td>Project Directorate on Vegetable, B.H.U. Campus Varanasi, U.P.</td>
<td>0</td>
</tr>
<tr>
<td>20.</td>
<td>Structural Engineering Research Center Govt., Garziaba, U.P.</td>
<td>0</td>
</tr>
</tbody>
</table>

The participants of this study are one hundred nine (109) female library professionals of Universities and Research Centers of Uttar Pradesh.

Review of Literature

Ameekudee and Adanu (2006) investigated the current status, their career advancement opportunities, inhibiting development and occupational characteristics of thirty five (35) professional women librarians in Ghana. Another objective of the study was to find out how they were perceived by their male counterparts work experience by obtaining questionnaire. The findings reveal that women librarians in Ghana could advance to any height with out discrimination. Also, they did not experience any form of discrimination from their male counterparts in terms of remuneration or career development.

Frank and Vecera (2008) in their study examined the relationships among job satisfaction and personal characteristics. The study revealed several personal correlates of job satisfaction and individuals with higher level of education are more satisfied in job than workers with lower level of education. However, this trend does not
hold for individuals with the highest level of education, i.e. these employees are slightly less satisfied. Workers are slightly more satisfied in large companies with more than 500 employees than in smaller organizations. Moreover, the data revealed that employees from international corporations are definitely more satisfied than employees from other types of organizations. The least satisfied are employees working in public libraries.

Finally, an association between personal traits of the Five-factor personality model, self-efficacy and job satisfaction was inspected. The data indicated that trust, agreeableness, stability, openness, and self-efficacy were positively related to the total job satisfaction.

Nicole and Nancy (2009) surveyed law librarians across Canada in an attempt to discover whether they were satisfied with their jobs, and to compare these findings to previous surveys of those working in other types of libraries. Findings indicated that while law librarians are generally quite satisfied with their work, issues affecting job satisfaction included salary, stress, and opportunities for advancement. Chung (2010) investigated the relation between librarians and job satisfactions and its factors, including age, gender, subject, experience. This study uses the summation of feelings of an employee over a number of dimensions of his job, namely the nature of work, pay, promotion, supervision, co-workers, opportunities for professional development, reading community, security of the job, working conditions, general policies, and administration.

Ofuani (2010) examined the job satisfaction of women in paid employment in Benin City. The purpose of the study was to find out whether women in paid employment are satisfied with their jobs or not and to establish the effects of marital status, experience, academic qualification and relationship with superior officers on the perception of job satisfaction. Two hundred women were selected for the using ‘Job Satisfaction of Women in Paid Employment Questionnaire (J.S. W.P.E. Q). Finding were analyzed using the ‘t-test’. The result of the study revealed that marital status, experience, academic qualification and relationship with superior officers had no significant effect on the job satisfaction of women in paid employment in Benin City. It is recommended that women should be given opportunities to hold positions of responsibility; conducive atmosphere should be created for them at their workplaces. The situation is not better in other countries. In India, a few studies have been reported in recent years. Nevertheless the literature related to job satisfaction in library science does reflect the concern of the librarians.

Methodology

It is a survey-based study. An exhaustive attempt has been made to know if female librarians and the evaluation of opportunities for professional development of female librarians in Uttar Pradesh.

The present scale is a five-point scale based on Likert's scale. The level of job satisfaction has been categorized in five divisions i.e. strongly satisfied, satisfied, undecided, partially satisfied, not satisfied and having allotted different marks. Those divisions (level) carry different meanings (Strongly satisfied = 5, Satisfied = 4, Undecided = 3, Partially satisfied = 2 and Not satisfied = 1). A mark obtained by individual respondents is called score of scale (questionnaire) and collectively of all respondents is called score board.
ANALYSIS OF DATA

After collection of filled up questionnaire from the respondents the data has been tabulated using SPSS Software and in the present report the results have been shown in percent ages (%).

Correlation

Correlation is the relationship between two sets of variables. Correlation coefficient is denoted by ‘r’.

\[ r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\sum x^2 - (\sum x)^2/n} \sqrt{\sum y^2 - (\sum y)^2/n}} \]

Whereas, \( r = \text{Coefficient of Correlation between variable } x \text{ and } y. \)

\( \sum x = \text{Sum of the scores of variable } x, \text{ and } \sum y = \text{Sum of the scores of variable } y. \)

\( n = \text{Total number of respondents}, \ \sum x^2 = \text{Sum of the square of variable } x. \)

\( \sum y^2 = \text{Sum of the square of variable } y. \)

Positive value of ‘r’ indicates a tendency of ‘x’ and ‘y’ to increase together, negative value of ‘r’ indicates a tendency of decreasing one variable with the increase of one variable.

‘t’ test for correlation coefficient: No. of independent variables in an observation set is called its degree of freedom. The significance of correlation coefficient was tested by ‘t’ test with degrees of freedom (d.f) n-2, with the of following formula:

\[ t = \frac{r}{\sqrt{1-r^2} \sqrt{n-2}} \]

Where \( t = \text{degrees of freedom}, \text{ } r = \text{correlation} \text{ and } n = \text{No. of respondents} \)

Multiple regression

A regression model that involves more than one regressor variable is called a multiple regression.

Multiple regression analysis is one of the most widely used of all statistical tools. In linear regression, the objectives of analysis are to determine the degree of linear relationship between two variables and to predict the behaviour of the dependent variable on the basis of an independent variable.

But in practical situation, the dependent variable is related not only to one independent variable but a host of independent variable at the same time. In these situations, it is imperative to apply multiple regression analysis to get the required result.

The following equation was used to determine the multiple regression

\[ Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k \]

Where \( Y = \text{Value of the dependent variable} \)

\( x_k = \text{Value of the independent variable} \)
\[ \beta_0 = \text{Intercept constant and } \beta_k = \text{Partial regression coefficient} \]
\[ = (k = 1, 2, 3, 4, \ldots) \quad (k = \text{The number of independent variables}) \]
\[ \beta_i = \text{Regression coefficients} \quad (j = 0, 1, 2, \ldots, k) \]

Partial regression coefficient which represents the amount of change in ‘Y’ that can be associated with a unit change in any one of the ‘x_k’ with the remaining independent variable held fixed.

**Test ‘t’:** Partial regression coefficient can be tested by ‘t’ test as:
\[ t = \frac{\beta_k}{SE(\beta_k)} \]

Where \( \beta_k \) = Partial regression coefficient
\( SE(\beta_k) \) = Standard error of partial regression coefficient.

‘F’ test: The multiple correlation coefficient (R) and coefficient of determination (R^2) were also worked out from the multiple regression analysis. The significance of R^2 was tested by using the ‘F’ test.
\[ F(k, (n-k-1)) = \frac{R^2}{1-R^2} \frac{n-k-1}{k} \]

Where \( R^2 \) = The coefficient of determination
\( k \) = The number of independent variables
\( n \) = Size of the sample.

If F (calculated) value is greater than or equal to F (tabulated) value with \( (k, (n-k-1)) \) d.f. at the required level of significance then, there is evidence to conclude that ‘R^2’ is significant, otherwise there is no significant co-efficient of determination.

**The Durbin-Watson Test**

The regression problems involving time series data exhibit the positive autocorrelation, the hypotheses, usually considered in the Durbin-Watson test, are:
\[ H_0 : \rho = 0 \]
\[ \implies 0 \]
\[ d = \frac{\sum_{t=2}^{n}(e_t - e_{t-1})^2}{\sum_{t=1}^{n}e_t^2} \]

Where, \( e_t \), \( t = 1, 2, 3, \ldots \), n are the residuals from an ordinary least – squares analysis applied to the \( (y_t, x_t) \) data. ‘d’ depends on the X matrix. Durbin-Watson (1951) show that ‘d’ lies between two bounds, say \( d_L \) and \( d_U \), such that if d is outside these limits, a conclusion regarding the hypotheses in above equation can be reached. The decision procedure is as follows:

If \( d < d_L \) \hspace{1cm} \( H_0 : \rho = 0 \)
If \( d > d_U \) \hspace{1cm} do not \( H_0 : \rho = 0 \)
If \( d_L \leq d \leq d_U \) \hspace{1cm} test is inconclusive

The \( H_0 : \rho = 0 \) should be rejected because positive autcorrelation indicates that successive error terms are of similar magnitude, e, and the differences in the residual \( e_t - e_{t-1} \) will be small. Durbin and Watson suggest several procedures for resolving inconclusive results.
Table 1. Opportunities for attending various professional conferences and trainings

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Response Categories</th>
<th>No. of Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strongly satisfied</td>
<td>21</td>
<td>19.27</td>
</tr>
<tr>
<td>2</td>
<td>Satisfied</td>
<td>41</td>
<td>37.61</td>
</tr>
<tr>
<td>3</td>
<td>Un decided</td>
<td>10</td>
<td>9.17</td>
</tr>
<tr>
<td>4</td>
<td>Partially satisfied</td>
<td>11</td>
<td>10.1</td>
</tr>
<tr>
<td>5</td>
<td>Not satisfied</td>
<td>23</td>
<td>21.10</td>
</tr>
<tr>
<td>6</td>
<td>No Response</td>
<td>3</td>
<td>2.75</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>109</td>
<td>100</td>
</tr>
</tbody>
</table>

Fig. 1. Opportunities for attending various conferences and trainings vs. Satisfaction

Table 1 and Figure 1 show the opportunities for attending various professional conferences and trainings, it was found that the 56.88% were satisfied with the opportunities of attending various professional conferences and trainings. 9.17% females had no opinion, 10.1% females were partially satisfied and 21.10% females were not at all satisfied about given opportunities by their organizations. Three (2.75%) females did not respond to the question.

Table 2. Encouragement for research like men

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Response Categories</th>
<th>No. of Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strongly satisfied</td>
<td>40</td>
<td>36.69</td>
</tr>
<tr>
<td>2</td>
<td>Satisfied</td>
<td>40</td>
<td>36.7</td>
</tr>
<tr>
<td>3</td>
<td>Un decided</td>
<td>17</td>
<td>15.6</td>
</tr>
<tr>
<td>4</td>
<td>Partially satisfied</td>
<td>8</td>
<td>7.34</td>
</tr>
<tr>
<td>5</td>
<td>Not satisfied</td>
<td>4</td>
<td>3.67</td>
</tr>
<tr>
<td>6</td>
<td>No Response</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>109</td>
<td>100</td>
</tr>
</tbody>
</table>

Fig. 2. Encouragement for research like men vs. Satisfaction
Opportunities for Professional Development of Female Library Professionals...

In addition to the previous point 73.39% females showed satisfaction over given encouragement for research like men, 15.6% females did not have any view, 7.34% respondents were partially satisfied and 3.67% respondents were not at all satisfied with encouragement for research.

Table-3. Score of Total Respondents

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Response Categories</th>
<th>Opportunities for attending various conferences and trainings $(x_1)$</th>
<th>Encouragement for research like men $(x_2)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strongly satisfied</td>
<td>105</td>
<td>200</td>
</tr>
<tr>
<td>2</td>
<td>Satisfied</td>
<td>164</td>
<td>160</td>
</tr>
<tr>
<td>3</td>
<td>Un decided</td>
<td>30</td>
<td>51</td>
</tr>
<tr>
<td>4</td>
<td>Partially satisfied</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>Not satisfied</td>
<td>23</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>No Response</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Mean</td>
<td>57.3333</td>
<td>71.8333</td>
</tr>
<tr>
<td>8</td>
<td>Std. Deviation</td>
<td>63.42134</td>
<td>86.61736</td>
</tr>
</tbody>
</table>

Table 3 indicates that the multiple regression analysis of the opportunities for professional development on the basis of attending conferences, and encouragement for research like men. We have five (2) response categories. These response categories are based on four (2) variables.

Variable $(x_1) =$ Opportunities for attending various conferences and trainings
Variable $(x_2) =$ Encouragement for research like men

In this analysis (opportunities for professional development) opportunities for attending various conferences and trainings $(x_1)$ is dependent variable and the rest like encouragement for research like men and encouragement for research like men $(x_2)$…… and so on are the independent variables.

Table-4. Opportunities for Professional Development—Pearson Correlation

<table>
<thead>
<tr>
<th>S.N.</th>
<th>$(x_1)$</th>
<th>$(x_2)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0.892 (*)</td>
</tr>
<tr>
<td>3</td>
<td>0.892 (*)</td>
<td>1</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
* Correlation is significant at the 0.01 level (2-tailed).

On the basis of data given in Table-3 the multiple regression analysis of evaluation of opportunities for professional development model as given in Table-4 The regression analysis of the each variable is given in first row and its Pearson correlation is two tailed test, which indicate th at the all the variable are strongly correlated.
Table-5. Opportunities for Professional Development: Multiple regression analysis

<table>
<thead>
<tr>
<th>Multiple R</th>
<th>Multiple R²</th>
<th>Std. Error of the Estimate</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.997</td>
<td>0.994</td>
<td>0.992</td>
<td>5.70143</td>
<td>614.690</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Table-6 shows that the variables are correlated and given correlation coefficients is 0.997. This shows that there is no sign of non-association of the variable as the value of test of significance are very less again for regression analysis. Coefficient of determination (R²) 0.994 and Adjusted R 0.992 are given in column 2 and 3.

The standard errors are also measured and then applied the Durbin-Watson test to check if the validity of error are uncorrelated. The value of Durbin-Watson test is 2.461.

Now, to test the validity of the calculated value of Durbin-Watson test we have also obtained the calculated value of the F (614.690) test which is equal to 7.71 (Tabulated value) at 5 per cent level of significance the degree of freedom (df1 and df2 is 1-4). From the value we observe that at calculated test value is less than is tabulated value which shows that the test is not significant. Their significant evidence about the correlation coefficients and variables are correlated.

Table-6. Opportunities for Professional Development

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Independent variables</th>
<th>Beta</th>
<th>’t’ values</th>
<th>Partial Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Opportunities for attending various conferences and trainings (x₁)</td>
<td>7.491</td>
<td>2.436</td>
<td>0.997</td>
</tr>
<tr>
<td>3</td>
<td>Encouragement for research like men (x₂)</td>
<td>0.001</td>
<td>0.007</td>
<td>0.004</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

The analyzed ’t’ value shows, the encouragement for research like men were found to be significant at 0.05 per cent level, whereas opportunities for attending various trainings and conferences. The partial regression coefficients presented in Table-4 indicates that the opportunities for attending various trainings and conferences and encouragement for research like men are positively significant.

Findings

The significance of correlation comes 0.01 levels and 0.05 levels. The Correlation of 0.01 levels and 0.05 levels indicates the reliable percent age which is 98 and 95. On the basis of data given in Table-3 the multiple regression analysis of evaluation of opportunities for professional development model as given Table-4. The regression analysis of the each variable is given in first row and its Pearson correlation is two tailed test, which indicate that the all the variable are strongly correlated.

Now, to test the validity of the calculated value of Durbin-Watson test we have also obtained the calculated value of the F (614.690) test which is equal to 7.71 (Tabulated value) at 5 per cent level of significant the degree of freedom (df1 and df2 is 1-4). From the
value we observe that calculated test value is less than the tabulated value which shows that the test is not significant. Their significant evidence about the correlation coefficients and variables are correlated.

Conclusion

The analyzed ‘t’ value shows, the encouragement for research like men were found to be significant at 0.05 per cent level, whereas opportunities for attending various trainings and conferences. The partial regression coefficients presented in opportunities for attending various trainings and conferences and encouragement for research like men are positively significant. Now, to test the validity of the calculated value of Durbin-Watson test we have also obtained the calculated value of the F (614.690) test which is equal to 7.71 (Tabulated value) at 5 percent level of significant the degree of freedom (df1 and df2 is 1-4). In order to solve the objective, the analysis showed the satisfaction level of the conferences and encouragement for research like men. Policies should look after equal work opportunities and training activities to enhance the capacity of their workers as well as providing incentives based on work performance.

References

Role of Digital Libraries: Issues and Challenges

Purnima Chauhan

Abstract

With the invention and communication technology, libraries now use various types of technology to aid the services they render. Everyday new technology advances affect the way information is handled in libraries and information centers. The dramatic changes in society, exponential advances of everything are easily recognizable. Smart phones with 4G wireless data transfer, touch screen and digital video recorder have made phone a reality and more dramatically, mobile, tablet devices are more dramatically, mobile, tablet devices are replacing laptop than computers nowhere is change more evident than in the librarian profession. We are seeing commercial competition for information access and delivery services arise routinely, making ineffective attempts to serve young library customers where whose needs we don’t understand, being inundated with technology beyond our capacity to keep pace while knowing our young customers are experiencing library closures everywhere and rampant privatization of library management regardless of our best achievement.

Introduction

Libraries in every aspect feel the impact of new technology and mass storage technology are some of the areas of continuous development that reshape the way at libraries access, retrieve, store, manipulate and disseminate to users. Digital libraries have emerged with the task of digitization, storage access, digital knowledge mining, digital reference services, and electronic information services to its technically advanced users digital; library gives traditional library a reform that will increase library visits by the users providing their information in digital form at computers.

Objectives

The main objectives are:
1. To understand digital library.
2. To understand the components of digital library.
3. To understand digital information services.
4. To understand issues and challenges in digital services.

Definitions of digital library

On various definitions about digital libraries both online and in print the main characteristics
of digital libraries are as follows:

- Digital libraries are the digital face of traditional libraries that include both digital collection and traditional fixed media collections. So they encompass both electronic and paper materials.
- Digital libraries will also include digital materials that exist outside the physical and administrative bounds of any one digital library.
- A framework for carrying out the functions of libraries in a new way with new types of information resources.
- A new set of methods to innovate and improve fee or membership based indexing, full test repositories and hyper linking systems (publishers, online information services, professional societies, indexing services)
- A distributed text-based information systems (computer and information scientists)
- A collection of distributed information services (computer and information scientists)
- A distributed space of interlinked information (computer and information scientists)
- A networked multimedia information system (computer and information scientists)
- A space in which people can collaborate to share and produce new knowledge (those working on collaboration technologies)
- Support for formal and informal teaching and learning (educators)

**Table-1. A progression of digital library definitions**

<table>
<thead>
<tr>
<th>Definition</th>
<th>Facts</th>
</tr>
</thead>
</table>
| The library of future will be based on electronic data containing both text and graphics and be widely available via electronic networks, it is likely to be decentralized. | • Digital data (collections)  
• Multimedia  
• Services  
• Networked  
• Distributed  
• Enabling technologies |
| A service, an architecture...a set of information resources, databases of text, numbers, graphics, sound, video etc; a set of tools and capabilities...with users and contributors. Another key assumption is for use on the network | • Services (networked; with tools and capabilities)  
• Architecture (enabling technologies)  
• Digital data  
• Multimedia  
• Community based (users and contributors) |
| A large collection of the full contents of high use materials including books, journals, course materials and multimedia learning packages which can be directly assessed by students and staff (with personal computers) | • Multimedia  
• Terms and conditions  
• Collection  
• Digital data |
| Organized collection of digital information. They combine the structuring and gathering of information, | • Service  
• Digital data  
• Extension of existing libraries  
• Computers |
which libraries have always done, with the digital representation of information that computers have made possible.

| Digital libraries are set of electronic resources and associated technical capabilities for creating, searching and using informations. | • Systems  
• Digital data  
• Enabling technologies  
• Services  
• Community based  
• Use and users centered |
| ———————————————————————————————————————————————————————————————————— | ———————————————————————————————————————————————————————— |
| Digital libraries are constructed, collected and organized by a community of users and their functional capabilities supported information needs and users of the community. | • Emphasis on social aspects |

| Socio-technical system-network of technologies, in formations, documents, people, and practices | • System  
• Networked  
• Community based  
• Use and user centered  
• Emphasis on social aspects  
• Enabling technologies  
• Collections |
| ———————————————————————————————————————————————————— | ———————————————————————————————————————————————————— |

Components of Digital library

- Digital library infrastructure
- Digital library services.

Digital library infrastructure

This consists of following components:

- **Collection infrastructure**: Acquisition, creation, conversion and accession of knowledge information.
- **Access infrastructure**: Searching, Browsing, Portals.
- **Computing and Networking infrastructure**
- **Digital resource organization**: Standards, Protocols and control.

Digital library services

- Modified Web-based library services
- OPAC to Web Databases
- Manual to Digital reference service
- Manual to Electronic document delivery service
- Virtual Library Tours
• Librar y Websites
• Librar y Portals
• Web-based user education
• Web forms
• Bulletin Boards, Discussions forums

Digital information services in libraries

The internet and especially the web have brought a commun ica tion revolution enabling us to access, retrieve and send information anywhere easily instantaneously and inexpensively. The web has transfor med the way of libraries functioning and providing librar y information services to the user commun ity. The ability to make an information source simultaneously available to multiple users through networks removed the “one source on user” limitation of one print world.

A digital librar y is much more than just the collection of material in its repositories. It provides a variety of services to all of its users (bo th hum ans and machines, and producers, managers, and consumers of information). Thu s we start our definition with the notion of the collection of services th at the digital librar y represents. There are a large and varies set of such services, including services to supp ort management of collections, services to provide replicated and reliable storage, services to aid in query formulation and execution, services to assist in name resolution and location, etc. Digital information services comprises of electronic infor mation resources in the form of e-books, e-journals, CDs, DVDs, databases etc. and Wide Area Information Services ( WAIS). Th e convergence of comput ers, telecommun ication, and multimedia helped in the development of digital librar y services. Digital information provides services to assist members in an organized manner or making them more widely available. The services are as follows:

• Electronic table contents
• Electronic document delivery
• Electronic Thesis and dissertations
• Full text access of Electronic Journals
• Catalogue databases
• Current awareness services
• Special collections services
• Externally purchased databases
• CD-ROM databases
• Remote information services
• Internally published new letters, reports and Journals
• E-mail
• Bulletin Board Services
• Newspaper Clippings

A large Member of digital information services are offered to users by librar y and information centers. Digital information service is a unique challenging opportun ities because of many requirements like collabora tive supp ort, rapid access, highly interactive interfaces, digital documents imaging, table contents services, full text access to electronic journals, electronic document delivery and selective dissemination of infor mation. For these services, several
information technologies are required.

The format of information resources may change, the way of accessing information too may vary and the style of serving the user may be different but the vision and mission of the library will be the same. To fulfill the mission of library, it has to provide the traditional reference services, retrieval and dissemination of information and at the same time, it has to stretch its services to information search services, to organize the information resources for easy access, to filter qualitative information from the World Wide Web. Cornell Reference Architecture for Distributed Digital Libraries (CRADDL) designed a set of components that form the core of a digital library infrastructure. CRADDL defines a basic set of digital library services such as Repository service, Indexing services, Naming service, Collection service and User interface service. The following figure provides an outline of the CRADDL Design.

Functions of digital information service

- To provide access and availability of a very large information collections for a long time.
- Network accessible
- Support multimedia contents
- Unique referencing of digital objects
- Support editing, publishing, annotation and integration of information
- Support traditional library mission of collection, development, organization, access, retrieval and preservation of information

Advantage of digital information services

- Library collection for global use
- Access to more information
- Protection of rare books
- Promote universal accessibility
- Provide latest and accurate information
- Save space which is required for physical documents facilitate effective functioning of the library
- E-books and journals provide keywords, subjects and various other searchers
- Facility of downloading and printing
- Documents viewed by any number of persons simultaneously

Issues in the digital library environment

A number of activities together make up digital libraries and the development of it is dependent on a number of inter-related enabling (or hindering) factors. These include such as:

- **Technical issues**: Standards & security
  - Infrastructure development
  - Use of appropriate technology
- **Collection issues**: Digitization
Role of Digital Libraries: Issues and Challenges

- Acquisition of original digital works
  - Assess to external materials

- **Collaboration issues**
  - Resource sharing
    - Cooperative purchasing of
      - Information resources

- **Management issues**
  - Strategic planning
    - Need for new or different
      - Performance measures
    - Organizational support and
      - Leadership
    - Appropriate statistical measurement

- **Personal issues**
  - Staff commitment to new systems and services
    - Changed staff training
  - Effect of automation on staff skills and professionalization

- **Financial issues**
  - Financial resources technologies
    - Changes to funding allocation

- **Client issues**
  - Client needs and client attitudes

- **Legal issues**
  - Copyright
    - Contracts
    - Privacy

Challenges faced by librarian in digital information services

1. **Broader spectrum of library customers in history:** The sixth generations (including those at next generation of adolescents) that comprise 21st century library customers create significant differences in library services in demand, with the most drastic difference between the great generation and the millennia’s. This drastic difference creates a heavy demand on librarians to continue traditional services for some “patrons”, while creating new technology based services for digital native “customers”, digital fugitive and digital native customers are at positive ends of the customer’s service spectrum, but both deserve excellent library services.

2. **Information literacy millennium customers:** The partnership for 21st century skills published its model in 2009, and since then a nationwide moment to reform public education has gained popular appeal. To ensure that future, India is capable of participating in the global economy, a major priority is to teach information literacy to young people to be able to use all the technology effectively to assess and manage information.

Information literacy: access and evaluate information

- Access information efficiently
- Evaluate information critically and competently
- Use and manage information: Use information accurately and creatively for the issue or problem at hand
- Manage the flow of information from a wide variety of resources
- Apply a fundamental understanding of the ethical/legal issues surrounding the access
and use of information.

- The role of librarian as an expert researcher handling information to awaiting patron is the antithesis to the collaborative, participative mind set of the emerging millennial customers, even young generation customers are more technologically literate than most librarian, because the vast majority are digital natives but very few of them are pursuing a career in librarianship. In order to prepare for the increasingly more information literate millennial customers, librarians need to become guides for information literacy participants.

3. **Computer that replace librarians**: Michael Milken, called “The Man who changed medicine” by fortune magazine in 2004, explained to CNN Larry King that cancer research is progressing at an exponential rate because of the massive quantities of data available to researchers. “Computers are a million times faster than they were 10 to 15 years ago. We have the computing capacity now to deal with one trillion calculations a second… what we only could have dreamed of doing when I started working on cancer research more than 30 years ago, we can do today in an hour or an afternoon. It is a totally different world today.”

4. **Transaction on Digital content**: Because digital media provides, like industry leader Overdrive, provide greater access to e-books, audio books, music, and video than your local library can afford to offer from its own collection, traditional circulation is being overshadowed by electronic formats. “Overdrive has developed custom download websites—or virtual branches” because they look and feel like one of your library branches for 10,000 libraries worldwide”, because millennial library customers prefer to access rather than own, so digital media is only going to become more available for those who prefer to access it today, rather than wait for 2-3 weeks to check it out at their library when they finally get it in their catalogue. “The third generation kindle is a now the best selling product in Amazon’s history, eclipsing Harry porter and deadly hallows (book 7) kindle (wi-fi) and kindle 3G were the best selling products on amazon.com.

5. **Devaluing of the libraries benefit to the community**: Can or should library try to compete with commercial information providers like Google, Netflix and Amazon? Can or should libraries try to compete with digital technologies like Smartph one, tablets and geosocial networking? How does library retain its relevance in its local community that is a part of global community?

6. **Economic challenges**: Cost involved in creation production and dissemination of digital environment is quite high. Customers have to pay fees for access to digital services and collections. The major obstacle is digitization and it is very cost intensive.

7. **Technical Architecture**: Technical Architecture is first that underlies any digital system. Libraries need to enhance and upgrade current technical architecture to accommodate digital material. The architecture includes following components:
   - High speed local networks and fast connections to the internet.
   - Relational databases that support variety of digital formats.
   - Full text engines to index and provide access to resources.
   - A variety of servers such as web server and FTP servers and CDs/ROM Servers.
   - Electronic management functions that will aid in the overall management of digital resources.

8. **Lack of Expertise**: The development of an infrastructure for the networked resource
discovery and retrieval of highly distributed, autonomously created and diverse electronic information is required. Moreover this infrastructure will need to be managed by professionals who understand information needs and uses.

**Future of Digital Library**

Digital Library future has become complex due to increasing number of digitization initiative taken all over the world. The increase diversification of requirements, expectations and usage amongst user communities through the widespread engagement has made the concept of digital libraries composite. It is basically a big project which needs involvement of many IT and library professionals and require better mix of hardware, software and networking technologies to provide best services. The components of digital libraries which will play a significant role in future include: digital objects, metadata, repositories and harvesting, right management, indexing, resource discovery, searching and retrieving, linking, interfaces and interaction, architectures and interconnections. Hardware requirements include server computer for posting the collection, desktop computers for hosting the collections, desktop computers, digitization equipment, network connectivity and other equipment. It is correctly said that the user of the library of the future need not to be a person it may be another knowledge system or any intelligent agent with a need for knowledge. Library will have metamorphosed into a network of knowledge system in which people and machines collaborate. Digital Library is another critical technology component. Option include: open source free digital library software, library automation software, commercial digital library software and in house software development.

**Suggestions**

- A systematic process should be developed to understand the present need of the users and try to find solution or right information to meet the user need.
- Greater attention should be paid to the design of user interfaces’ or library portals.
- There is need for well-organized user training programmer and online tutorials to educate user in conducting complex subject searches and making full use of the available technologies, resources and services in the digital library.
- Staff needs to learn new skills because there is a continuing evolution of roles of libraries and librarian, which appears to parallel the growth of accept and use of the digital information by professionals.
- To meet the changing environment and information services, new improved technologies should be experimented with integration to current practice effectively and efficiently.

**Conclusions**

When one consider all the evidence of advancing technology, education reforms, societal changes, information literate customers, and globalization of “everything” and their impact on librarianship and libraries, it is crystal clear that 21st century libraries must be drastically different from all previous concepts. It requires a professional who embraces, and one who is more diverse.
The world of information is undergoing rapid change. As traditional custodians of information, librarians’ need to be aware of implications of these changes and develop technological and managerial skills, which will enable them to make effective use of information and to meet their organizations changing information need. In 21st century, we witness an information revolution when librarians are more in demand than ever in digital age. It is we, the library professionals who need to be changed to be benefitted from the technology and also give benefit to others. It is concluded that the digital information service is an essential part of the library environment and due attention must be paid while providing digital information services to the end users.

References
Concept & Importance of Digital Library in the Present Scenario

Purnima Pan dey; Praveen Kumar Pan dey & Shashi Bala Mishra

Abstract

The Information and Communication Technology (ICT) and the advent of the Internet have drastic and far reaching impacts on the knowledge and information sector and added a new dimension to information retrieval platforms. Information and communication Technologies have brought significant changes in allround development of the society through transmission of information. Changes also have seen in information seeking behaviour of users. User satisfaction level has been increasing. Now libraries have been able to provide fast and seamless access of information to its users. The present paper focuses on the concept of digital library. Importance of Digital Library is also highlighted in the present paper, which has provided wider opportunities in archiving and accessing knowledge in the digitalized form besides conservation and preservation of the traditional knowledge.

Keywords

Information Technology, Communication Technology, Digital Library, Digitization.

Introduction

“Right Information to right users at the right time and right format.” The right information available to the right person at the right time is the aim of any modern library. Automation in the libraries has become a new phenomenon. Computers are playing a vital role in the transfer of information and have become a part and parcel of librarianship. Information and Communication Technologies (ICT) have brought significant changes in allround development of the society through transmission of information. With the development in ICT, we move from a single library to a network of libraries, from one collection to distributed collections, from the catalogue interfaces to multiple interfaces, from books and journals to information’s fields. Due to lack of time nobody is having time to visit a library and search catalogue cards. Application of information Technology to library and Information science has provided wider opportunities in archiving and accessing knowledge in the digitized form besides conservation and preservation of the traditional knowledge. Digitization of materials can provide enhanced access to the electronic information sources and the users can access the digital content irrespective of time and space boundaries.
Concept of digital library

The term ‘Digital Library’ is divided into two parts: Digital and Library. Digital is originated from the Latin word ‘digit’ which means finger, toe and Library also derived from the Latin word which means inner bark, parchment, book. Digital means information in any digitized form and Library means a total mechanism for obtaining access to, storing, organizing and delivering information. With the impact of information Technology, the concept of ‘Paperless Library’, ‘Digital Library’, ‘Electronic Library’, ‘Cyber Library’, ‘Web Library’, ‘Virtual Library’ have come into the scene. The rise of digital libraries has brought phenomenal changes in the progress of collection, storage, preservation of rare documents, retrieval and dissemination of information. Digital libraries are a concept that has different meaning in different perspective. From information management point of view, “Digital libraries are systems that combine the machineries of digital computing, storage and communication, the content and software needed to reproduce, emulate and extend the services of collecting, cataloguing, finding disseminating information offered by traditional libraries based on paper and other materials.” From the user point of view, “Digital libraries are systems that provide a community of users with coherent access to a large, organized repository of information and knowledge.”

Digital libraries are often labelled “Libraries with out walls” because they rely on their connection to other libraries, information centers and sources of data that are not physically available in the Library. A digital Library is a global virtual Library and it can be defined as a collection of digital documents or objects. There are so many scholars who defined the term digital Library in different way. Some important definitions are given below:

- According to Yerkey and Jorgensin (1996) “Digital Libraries are electronic libraries in which large numbers of geographically distributed users can access the contents of large and diverse repositories of electronic objects, networked text, images, maps, sounds, videos, catalogues of merchandise, scientific, business and government data sets, they also include hypertext, hypermedia and multimedia compositions.”
- According to Lesk (1997) “Digital Libraries are organized collections of digital information. They combine the structuring and gathering of information which libraries and archives have always done with the digital representation the computers have made possible.”
- Borgeman (1999) defines “Digital Libraries are a set of electronic resources and associated technical capabilities for creating, searching and using information.”
- Smith (2001) defined a Digital Library as an organized and focused collection of digital objects, including text, images, video and audio, with the methods of access and retrieval and for the selection, creation, organization, maintenance and sharing of collection.
- Lesk (2005) defines Digital Library as a collection of information that is both digitized and organized and which offers capabilities beyond those of the traditional Library.
- Vanitha et al. (2006) say “A Digital Library is a library consisting of digital materials and services. Digital materials and items are stored, processed and transmitted via digital (binary) devices and networks. Digital services are services (such as reference assistance) that are delivered digitally over computer networks.
- According to Condela et al. (2007) “Since 2006 the term has been generally used
to refer to systems that are heterogeneous in scope and provides diverse types of functionality. These systems include digital object and metadata repositories, reference linking systems, archives, content administration systems and complex systems that integrate advanced digital library services.”

- Ibrahim (2012) says “Digital Libraries differ significantly from the traditional libraries because they allow users to gain an online access and work with the electronic versions of full text documents and their associated images. Many digital libraries also provide an access to other multimedia content like audio and video.

Thus, viewing the above definitions, a digital library is a library in which collections are stored in digital formats and accessible via computers. The digital content may be stored locally or accessed remotely via computer networks. They are the digital face of traditional libraries that include both digital and traditional collections.

Scope of the study

The study focuses on need and future of digital libraries. In the present society Digital Libraries are playing a key role in disseminating information by providing different types of relevant and recent information to the users with a short span of time. Digitization of materials can provide enhanced access to the electronic information sources and the users can access the digital content irrespective of time and space foundation. Many researchers have observed the changing level of user’s satisfaction. Therefore Digitization has great importance to the users in the electronic environment. This study also focuses on demerits or disadvantages of digital libraries as lack of infrastructural facility, lack of funds, lack of telecommunication technologies, and lack of trained professionals and users.

Review literature

2. Mahesh, G. & Mittal, R. (2008) discussed the importance and need of digital libraries. By reviewing, many articles related to the topic this study revealed that most articles focus on developing digital libraries.
3. Raj Kumar (2011) who is librarian at S.S. College of Ayurvedic Sc. & Research have discussed the advantages and disadvantages of digital libraries over traditional libraries and the infrastructure required to start digital libraries. He also focused on reason for why libraries should go for digitization.

Objectives of the Digital Libraries

Many researchers have observed that digital libraries are very important in the present scenario. The main objectives of digital libraries are:

- To collect, store, access and disseminate information in digital form.
- To meet the needs of users by offering better services in effective way.
- To save the time of users as well as library staff.
Hypothesis

Digital Libraries are very necessary in the age of information and communication technology.

Methodology

Methodology is also very important to choose a suitable research methodology which is within the limits of the researchers. The methodology of research provides details about how the researcher obtains data to complete the research. This study uses both qualitative and quantitative approaches along with review of related literature. The conceptual and textual information related to the present study were collected from primary and secondary sources of information such as books and National and International journals etc. Websites were also used for collecting information.

Importance of Digital Library

The world of both communication and production of information are changing at a very fast pace and the convergence of these had huge impact on libraries. Due to information explosion during the last few decades, many techniques and technologies have emerged for handling the information more readily, speedily and effectively. Many computer specialists also succeeded in integrating text, graphics, audio, animations and video converted into digital media (Singh, 2004). Libraries have changed with time to time from more static storehouse to dynamic service centers, serving all professionals and non-professionals utilizing useful need base collection. The emphasis of the users has also shifted from micro-documents to micro pieces of information with the changed of the medium from clay tablets to paper and now to electronic and optical media (Devi, 2004). The enormous amount of information is being created and stored each and every day. We are in the midst of information explosion and information technology revolution leading to the emergence to electronic information era. Rapid advances in information processing, storage and communication technologies have revolutionized the importance of libraries worldwide in disseminating information services to their users. In the present scenario digital libraries are spreading in every part of the world. Lynch (1994) said “Digital libraries provide users with coherent success to a very large, organized repository of information and knowledge.”

Digital libraries are playing a key role in disseminating information by providing different types of relevant and recent information to the users with a short span of time. They provide quality based service at the user doorstep. In general, digital libraries are important for the following reason:

1. **Multiple access**: The same resources can be used at the same time by a number of users. Many users can access the relevant and recent information and knowledge simultaneously.

2. **Round the clock availability**: Digital libraries can be accessed at any time, 24 hours a day and 365 days of the year. Users can gain access to the information at any time, day or night.

3. **No Physical location**: The users are not needed to go to the library physically. They can access the information and knowledge from all over the world as long as an internet connection is available.
4. **Preservation & Conservation**: An exact copy of the original can be made any number of times without any degradation in quality. Information or knowledge can be preserved safely in numerous times.

5. **Structured approach**: Digital libraries provide access to much richer content in a more structural manner. The users are able to use any search term (word, phrase, title, name, and subject) to search the entire collection. We can easily move from the catalogue to the particular book then to the particular chapter and so on. Digital libraries can provide very user-friendly interfaces, giving clickable access to its resources.

6. **Multiple libraries networking**: A particular digital library can provide the link to any other resources of other digital libraries very easily. Thus, a seamlessly integrated resource sharing can be achieved.

7. **Space**: While traditional libraries are limited in storage capacity, digital libraries have the potential to store more information because digital information requires very little physical space to contain them. When a library has no space for extension, digitization is the only solution.

8. **Cost effectiveness**: The cost of maintaining a digital library is much lower than a traditional library. A traditional library requires large sums of money paying for staff, book maintenance, rent, and additional books. Digital libraries do away with these fees.

9. **Distance learning**: Time is an important factor for modern users of the library. Digital libraries facilitate learning from home, office, or other places, which are convenient for users.

10. **Access to online publication**: It is of great importance for the digital libraries to acquire and make available link to the online publication and other important sources of information since new information is added on internet with every passing minute.

**Suggestions**

1. National level mechanism is essential to promote and coordinate open access and public domain digital literate systems.

2. International agencies like UNESCO, ICSTI, CODATA need to actively promote and support digital library systems.

3. National and International support, collaboration, and cooperation are essential for the development of digital libraries.

4. Awareness of open access is to be improved. 5. Regular training tools, processes, standards.

**Conclusion**

To conclude, it may be said that the changing world of today became more challenging for tomorrow. Changes in society and technology made variations in the lifestyle of people and their views and attitude towards the libraries. The rise of digital libraries has brought phenomenal changes in the progress of collection, storage, preservation of rare documents, retrieval and dissemination of information. Computer technologies not only create and
develop some modern libraries but also transform many existing libraries on the modern lines. Now learners are acquiring knowledge by new manners of learning. Internet acts as a medium in which learners can access quickly and it has plenty of resources related with their required topic of user interest. The backbone of present day communication is internet and the internet communication consists of a large number of computers linked through computer networks, which form a global network.

In future if libraries are to survive and succeed, they have to change their from storehouse of fixed printed materials to the digital libraries of dynamic electronic multimedia documents in order to satisfy the changing information needs of the users. National and international support, collaboration, and co-operation are essential for the development of digital libraries.

**Summary**

Developments in Information and Communication Technologies (ICT) have a profound impact on every sphere of society. Libraries are not an exception for this. It has brought significant changes in all-round development of the society through transmission of information. With the development in ITC, we move from a single library to a network of libraries, from one collection to distributed collections, from the catalogue interface to multiple interfaces, from books and journals to information fields and streams encompassing traditional and non-traditional forms of scholarly communications.

Application of information technology to library and information science has provided wider opportunities in archiving and accessing knowledge in the digitized form besides conservation and preservation of the traditional knowledge. Digitization of materials can provide enhanced access to the electronic information sources and the users can access the digital content irrespective of time and space boundaries. With the impact of information technology the concept of ‘Paperless library’, ‘Digital library’, ‘Electronic Library’, ‘Cyber library’, ‘Web library’, ‘Virtual library’ have come into the scene. The rise of digital libraries has brought phenomenal changes in the progress of collection, storage, preservation of rare documents, retrieval and Dissemination of information.

Digital library is a concept that has different meanings in different perspectives. Many scholars have defined the term digital library in different way. From information management point of view, “Digital libraries are systems that combine the machinery of digital computing, storage and communication, the content and software needed to reproduce, emulate and extend the services of collecting, cataloguing, finding and disseminating information offered by traditional libraries based on paper and other materials. From the user’s point of view, “Digital libraries are systems that provide a community of users with coherent access to a large organized repository of information and knowledge.”

Digital libraries are playing a key role in disseminating information by providing different types of relevant and recent information to the users with a short span of time. They provide quality based service at the user doorstep. Multiple access anytime access, no physical duplication, preservation & conservation, structured approach, multiple networking, space, cost effectiveness, Distance learning and online publication are the characteristics and benefits that make digital libraries important in the information world. In future if libraries are to survive and succeed, they have to change their role from storehouse of fixed printed materials to the digital libraries of dynamic electronic multimedia documents.
National and international support, collaboration, and cooperation are essential for the development of digital libraries.

References

Public Libraries as Knowledge Centres

RAJENDRA DHONDBA KOLHE

Abstract

Public Libraries are the social institutions. It offers services to provide information and dissemination for various public groups. Public libraries serve for all walks of life in both rural and urban communities and penetrates the overall development. In other words, the public libraries are the public universities. The public library is the local centre of information, making all kind of knowledge and information readily available to users. Therefore, the public libraries are considered as effective tools to mould the character of citizens, which has wider impact on societal as well as national development. Libraries should also adopt the technologies and innovations to meet the changing requirements of the users and attract more and more users. It is need of the time to adopt the technologies and innovations in the field of public library to meet the dynamic necessities of the users and to magnetize the maximum users. The most important role of any library is to provide efficient services to its users. The library's performance is measured in term of effectiveness and efficiency of its users. Thus, the present paper aims to depict how the public libraries serve for all walks of life in both rural and urban communities.

Keywords

Public Library, Information, Knowledge, Library Users.

Introduction

According to the Government of India, the development and extension of the public library is the whole responsibility of state government. Thus the role of Public Library is vital one in shaping and educating the people to transform into better citizens for the nation. Public Libraries serve as a catalyst for socio-cultural and educational development by providing access to information and knowledge. The readers in public libraries are different, it includes child, labor, highly educated, less educated, farmer, teacher, student etc. In public libraries readers are different so its needs are different.

The place of Public Library is crucial in determining and educating the people to change them into better citizens of the nation. By providing access to information and knowledge, public libraries serve as a medium for socio-cultural and educational development. The users of public libraries are diverse such as children, labor, highly and
less educated people, farmers, teachers, stud ents, etc. As the readers are diverse in public libraries, their demands are also diverse. To elabora te this view, let us consider some significant definitions of the scholars of this area.

1. The well-known educationalist, Gates (1976) aptly comments that the public library are “authorised by law supported from general public funds or special taxes voted for the purpose of administration, for the benefit of the citizen of the county, town, city or region which maintains it on the basis of the equal access to all.”

2. Dr. S. R. Ranganathan maintains that “public library is one which is open to any member of the public and annally free of any charge paid as so much service.”

3. The UNESCO Public Library Manifesto describes “public library as an organization which helps create a democratic, equal and peaceful society.”

On the basis of equality of access to all, the services of the public library are provided regardless of age, race, sex, religion, nationality, language and social status. The information is the backbone of the socio-economic and cultural development of any nation because it helps accelerate the prerequisite development of the human communities by means of knowledge and enriching experiences. The public libraries provide materials for all age groups of members of society. The libraries also provide academic materials to the generals. The users in the electronic era are expecting better and immediate services from the libraries. The rapid development and use of emerging technology has replaced the traditional libraries into automated, electronic, virtual and digital libraries.

Review of research and development in the subject

Review of literature performs an exception ally crucial role in research activity and serves as a foundation. The Sahab State Library in Malaysia, inspired by the government, obtain feedback as to what are the interest and information need of the individual communites. Dubh ashi carried out study on comprehensive programme of rural communication. Many researchers have noted such as Mchombo, 1982 that public libraries in Africa are often built to serve the educated elite. The position of public libraries has been fairly investigated across the world since the conception of it. The IFLA\ UNESCO Public Library Manifesto 1994 delineates the significance of public libraries as “the local gateway to knowledge, providing a basic condition for lifelong learning independent decision making and cultural development of individual and social groups.” For that reason, uncovering who use the libraries, and gaining an understanding of the identity issues surrounding the libraries use also seemed important. Kerala state library council has established rural centers to fulfill the need of rural users. There is quite a good amount of literature on public libraries and the public libraries are playing a role of catalyst in collection of information, generated at state level in the field of agriculture, industry, education, health, employment and other development programme. The study of Sanjay Kumar on Status of State Public Library in Jharkhand in 2006, Ramakrishna’s on computerization of public libraries some practical consideration in 2003 in West Bengal and Zahid Ashraf Wani’s paper on Development of Public Libraries in India published in a journal ‘Library Philosophy and Practice’ in 2008 has given a different dimension to the concept of public libraries. Raja Rammohan Roy Library Foundation RRRLF has been established by the Government of India in 1972 to function as a nodal agency of development of public library in India. Moving forward, the government of
Kar nataka as well as the department of public libraries has been endeavouring to provide the rural dwellers necessary knowledge and information regarding the various aspects of rural development.

Role of Public Library as knowledge centre

Libraries in society always perform the fundamental function by providing up to date information to the public. They assist the public in locating a diversity of resources and developing literacy skills. Public library is established to provide materials which communicate experience and ideas from one person to person to make them easily and freely available to all people. The public library is local centre of information that make all kind of knowledge and information readily available to its users. It is established supported and funded by the community, either through local, regional, state government and other community organizations. Library which is accessible to public is called a public library. These libraries are usually funded from public sources and operated by civil servants. Public libraries exist in many countries across the globe and often considered an essential part of having an educated and literate population. Public libraries are different from research libraries, school libraries and they need the general public information. Many years ago, public libraries were based on a heavy emphasis providing their clientele with printed based materials. However, the expansion of internet has altered opinions of how information should be provided to public. In most of the public libraries, librarians provide reference and research to help the general public. Worldwide public libraries offer information and communication technology (ICT) services by giving “access to information and knowledge for highest priority. In modern days, with changing scenario of social class, public libraries are called public universities as they play vital role in informing and educating the public during and after their formal education.

International Federation of Librarians Associations (IFLA) has set up minimum standard for information resources, facilities and services to be provided by public libraries (IFLA 2001). Information resources include fiction book, non-fiction, textbook, newspaper, magazine, pictures, records, and tapes, posters, audio and video, CD-ROM etc. Public library may meet user’s information need by acquiring, organizing and making available relevant information resources. Public library to perform well and meet the need of the users on this modern time it is necessary for public library to embrace the use of ICT. The satisfaction of library users is a function of the quality of information product received the quality of information system and library services provide to access the information product.

Services in Public Libraries

The best library services will result smooth function of library. By providing best practices to our reader, the librarians can understand their needs

1. Circulation: Book, magazines, journals, reference book etc. Libraries provide huge range of fiction and non-fiction books. You can also find newspapers, magazine, audio book and journals. You can also read them on site or you can take them home. Book not available in your local library can be borrowed from other library (Inter Library Loan).
2. **Information Services**: The collection it includes book, periodical, CD, etc. Libraries are the permanent abode of information. It regularly supplies current information to the society and information to researchers and readers. In the field of information literacy the library professional can play vital role. In public libraries, you can find different sources of information such as dictionary, reference book, year book, map, online database, CD and DVD, Year book, encyclopedia, etc. to develop collection taking into considerations readers needs. Besides acting as facilitators and tutors, they can also act as aspirators’ and help along the teaching community to spread the culture of information literacy.

3. **Internet Based Services**: In order to sustain the pace of development, the libraries can seek help of already established public libraries as information centre. The libraries can use internet based services like social networking, blogging, etc. to meet the needs of the users. These types of libraries can work as depository libraries for all type of information from where the public can access.

4. **Information Literacy Programmes**: Information literacy should also aim at providing knowledge about recent type of document. Information literacy programme help the library to reach many scholars through a single programme. Information literacy is the need of present internet age and librarian can guide to the users arranging various information literacy programmes. Mews define information literacy as “Instruction given to the readers to help them to make the best use of library.” Information literacy programmers are more useful for research scholars. Information literacy related concept like users education, library instruction, bibliographic instructions.

5. **E-mail Service**: E-mail is fastest of communication medium. According to Natarajan (2002) e-mail is the most universal application on the internet and it can be used for direct communication with potential users. It gives the glimpse of the library services. Librarian must use these facilities of the internet to reach to hundreds and thousands of users.

6. **SMS**: The short message services of the mobile phone facilities is the most modern, easy to use, rapid and quite economical services.

7. **Book Exhibitions**: The libraries must organize book exhibition and special book collection. To create awareness about collection, public libraries organize book exhibition. This help to provide an opportunity for users to know the various types of information resources available in the library. It will also be helpful for the libraries where open access is not allowed. This will help to show the passive collection to the users.

**Conclusion**

It can be said that the public libraries should provide authentic recreational and academic materials to the general public. Librarian must also direct the users for the effective usage of current trends of technology to get maximum information in least possible time. Their key rationale is willing to afford services to human kind and therefore, the libraries should take effort to educate the public. The activities should be organized by the libraries with respect to their needs and should provide more of educational site than cultural, informative and recreational facilities. Thus, the public libraries cater to the overall general need of the society. Consequently, the public libraries are accounted as one of the useful tools to mould
Next Generation Libraries: Issues and Challenges

the character of readers i.e. citizens of the country, which has wider impact on societal as well as national development. It is the library, which serves every citizen by meeting their needs at best possible way.

Bibliography

An Analytical Study of the Features of Google Scholar

RAINEESH KUMAR; FARZANA AZIM & DEVEN DRA KUMAR ARYA

Abstract

Google Scholar has now become a very important tool for research, and the different features of Google Scholar are an added advantage for any research scholar. The Google Scholar approach offers some potential for literature retrieval. Google Scholar automatically calculates and displays the individual’s total citation count, h-index, and i10-index. These features are developed in such a way that they can be very useful for both a beginner as well as an experienced researcher.

Introduction

Google Scholar is a freely available service with a familiar interface similar to Google Web Search. Much of the content indexed by Google Scholar is stored on publishers’ servers where full-text documents can be downloaded for a fee, but at least the abstracts of the documents found will be displayed at no cost. The Google approach does, however, provide documents from the open access and self-archiving areas (compare Swan and Brown, 2005).

Google Scholar is contributing in the research by providing scholarly documents to the research community. According to the citation value of a document is only one factor contributing to its ranking. Google builds a citation index out of the full-text index as an add-on to its service. On top of the statistical best match ranking of full-texts, this add-on implementation can be valuable for re-ranking documents or for analysis and evaluation purposes of certain document sets.

Google Scholar offers fast searching with a simple, user-friendly interface. The pros of this are that the search is free of charge and is done across interdisciplinary full-text collections. The Google Scholar approach offers some potential for literature retrieval, for example, automatic citation analysis and the ranking built up from this, and oftentimes direct downloading of full-text which is sometimes also described as a subversive feature (listing of self-archived pre- and post-prints).

Historical Background

Google scholar came up in 2006 by Alex Verstak and Anurag Acharya with the potential of providing scholarly literature, including peer-reviewed papers, thesis, books, preprints, abstracts and technical reports from all broad areas of research. By the use of Google Scholar, researcher
can find articles from a wide variety of academic publishers, professional societies, preprint repositories and universities, as well as scholarly articles available across the web.

In 2007, Google Scholar started a program to digitize and host journal articles, an effort separate from Google Books, whose scans of older journals do not include the metadata required for identifying specific articles in specific issues. In 2011, Google removed Scholar from the toolbars on its search pages, making it both less easily accessible and invisible to users who were not already aware of its existence.

In 2012, an individual Google Scholar page feature was added. Individuals, logging on through a Google account with a bona-fide address usually linked to an academic institution, can now create their own page giving their fields of interest and citations. Google Scholar automatically calculates and displays the individual's total citation count, h-index, and i10-index.

Significance of the Study

In the present time of Internet, quick access of scholarly information is very important because it is considerable that in every second we found new research results. And if researcher is not able to get that information on time then that new information can't be beneficial for the user. Google Scholar is helping the User by providing quick access to the maximum Scholarly research production in a very limited time some time free of cost. The main aim of the study is to analyze the features of Google Scholar and how it could be utilized effectively.

Features of Google Scholar

Google Scholar is one of the research tools that are widely used by the researchers. Google has added a new Google Scholar option that can help user organize their research. Researcher can now create libraries of articles that they find through Google Scholar. To create a Google Scholar Libr ary user should sign into their Google account before searching on Scholar.Google.com then just click “save” when he/she find an article they want to save for future reference. They can save items appear in their Google Scholar Libr ary where they can apply labels to them and sort them.
Applications for Research Scholar

Google Scholar indexes scholarly, peer-reviewed academic papers, journals, thesis, books, and court opinions. These are materials that students usually won’t find through Google.com, Bing, or Yahoo search.

Google Scholar Alerts

Searching on Google Scholar is not like searching on Google.com or searching in any other public search engine. Just as they can do for Google.com searches; students can create Google Scholar alerts. Google Scholar alerts notify students when new materials related to their search queries appear on Google Scholar. The screenshots below offer directions for creating Google Scholar alerts.

1. Do a search for the topic of interest, e.g., “M Theory”; click the envelope icon in the sidebar of the search results page; enter your email address, and click “Create alert”. We’ll then periodically email you newly published papers that match your search criteria.

It is very easy to get Google Scholar alerts for that one just has to click the envelope icon in the sidebar of the search results page then by entering the email address, and clicking “Create alert”. Then periodically e-mail user newly published papers that match users search criteria.

Users can enter any e-mail address of their choice. If the email address isn’t a Google account or doesn’t match their Google account, then Google Scholar email user a verification link, which user need to click in order to start receiving alerts.

This works best if user creates a public Citations profile, which is free and quick to do. Once user get to the homepage with their photo, click “Follow new citations” in the right sidebar below the search box. Google Scholar then email user when they find new articles that cite users.

If user want to search for the paper, e.g., “Ant de Sitter space and holography”; click on the “Cited by” link at the bottom of the search result; and then click on the envelope icon in the left sidebar of the search results page. Google scholar sends the alerts right after they add new papers to Google Scholar. This usually happens several times a week, except that Google scholar search robots meticulously observe holidays. There’s a link to cancel the alert at the bottom of every notification email.

Step-1
Google Aler ts and an Organization’s Digital Reput ation

In the world of internet and the freedom of doing so many things without letting know anybody two basic questions came into the mind of the people belongs to an organization.

1. What happens when someone Google’s your organization?
2. What is being said about your organization with out your knowledge?

There were a few people surprised by what they found. It is a suggestion to everyone in the society to create a set of Google Aler ts for the names associated with their organizations. It is advised to the people to create Google Aler ts for not only the proper names of their organizations but also the nicknames and abbre viated names that people use for their organizations. Google Aler ts makes it easy to find out when someone publishes something new about your organization online. Another suggestion that often make about social media is to look at popular social networks like Facebook and see if there are groups formed about your school or organization.

Recomm endation engine

Google Scholar has introduced an extra service of making auth or profile pages and a recommendations engine. It is changing it from a search engine to something closer to a
An Analytical Study of the Features of Google Scholar

A significant purpose of making a profile is to help users to find the articles they need. It is very often that users don’t remember exactly how to find an article, but they can pivot from a paper they do remember or and to their other papers. And so that they can follow other people work another by a crucial way of finding articles. Profiles have other uses, of course. But once user know their papers, they can track how their discipline has evolved over time, the other people in the scholarly world that they are linked to, and can even recommend other topics that people in their field are interested in.

Future to find out related article of the interest

Google Scholar can help users to find out that how many other websites link to a particular site. The screen below shows the search above re-entered into Google Scholar. Click on SFX@ UCL to access online resources paid for by UCL Library Services, or to find the printed publication in one of UCL’s libraries. Click on the title to get brief details of the article, or other work, (often including an abstract). You may also be able to get to the full-text from the ‘brief details’ page by clicking on a link to ‘full text’ or ‘PDF’. If you can’t get the full-text directly from Google Scholar, you may be able to find it, either online or in paper format, elsewhere (see the ‘How to find full text journal articles’ handout).
Conclusion

As a part of research society or from the field of education we all know about Google scholar that it is a search engine which helps us to provide scholarly documents. But through this study it is found that it is not just a search engine. A search engine that not only provide as scholarly information that through above mentioned features it help as like a hub of literary works. Google scholar has very important and useful features for a researcher. And if a researcher uses all or at least some of the mentioned features in his or her research work, they will be greatly benefited. They can get very quality literature to study even without going to search for thorough Google Alerts, they can make authors profile for the recommendations. These features make Google Scholar more special than of being just a Search engine.

References

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5. en.wikipedia.org/wiki/Google_Scholar
8. scholar.google.co.in/intl/en/scholar/help.htm#alerts
Abstract

In the fast changing trends, libraries and information centers are under pressure due to the factors like budget cut, increasing cost of books and periodicals, availability of information products in different media and the ever changing users needs and tastes. This study was mainly conducted to empirically investigate the marketing of library and information products and services in central library of Kum aun University, Nainital. The motive behind the current study was to trace out various loopholes or drawbacks associated with concerned library services and its other aspects and then to suggest the possible solutions for the same. The content of the article has been obtained mainly through the eminent author’s book and of course from internet.

Keywords

Library Marketing, Library Services, Information Products, Library Promotion

INTRODUCTION

Libraries and concept of marketing

It is said that ‘Knowledge is power’. The level of knowledge and information determines the fate of any society. “Over the last decade the information industries have grown dramatically in services, revenues, and conferences. Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating, offering and exchanging products of value and others”. (Kotler, P., 1994). “It covers those activities that connect the organization to those parts of its outside world that use, buy, sell or influence the output it produces and the benefits and services it offers.” (Joseph, Jestin and Parameswari, 2002). It should result in satisfaction for users and revenue for the information centers.

Modern marketing, unlike the traditional one, is a customer oriented marketing, where the primary task of an enterprise is to study the needs, designs and value of the potential consumer and on the basis of accurate knowledge of demand produces a product which
provides desired satisfaction to the customer. Customer as such can be called the heart of an enterprise in modern marketing system. Marketing is an ongoing process with following steps as (a) discovering of translating consumer needs for desired product and services, (b) creating demand for these products and services. (c) Serving the consumer with the help of marketing channels; and then (d) expanding the market even in the face of keen competition.

Library is a service institution which aims at meeting user’s needs of varying nature. Unfortunately most of the library and information science professionals are still content with their passive work roles and do not seek major innovation, except the traditional concern for housing mean and materials. Services are not aggressively offered as the sales managers do.

Advancement in the information and communication technology paved the way for offering very efficient and effective library and information services. “Time is ripe now for the proper understanding and application of marketing tools in the library sector so that library function may be effectively designed and competitive services may offered”. Thus, it is more appropriate to identify, understand and apply marketing models towards marketing of information products and services.

Developing marketing programme/marketing mix

“Libraries and information centers have to choose appropriate programmes relating to product/service, price, promotion and distribution to tap the selected opportunity” (Rao and Jain, 1999).

- (i) Product/Service Management
- (ii) Price Management
- (iii) Promotion Management
- (iv) Distribution Management
- (v) Organization, Implementation and Control
- (vi) Implementation
- (vii) Internal Marketing
- (viii) Interactive Marketing
- (ix) Value Delivery Processes

Marketing Model for the Libraries

The following are some important marketing model promotion tools for library:

Communication

Rowley, (1998) divides “communication channels into personal and non-personal. Personal communication channels are those in which two or more people communicate, and word of mouth is the primary means of communication, although other media such as e-mail are significant. Non-personal communication channels include TV, radio, posters, newspapers, etc.”
Atmospherics

This term is coined by (Kotler, 1975) who defines atmospherics as “the designing of buying and consuming environments in a manner calculated to produce specific cognitive and/or emotional effects on the target market.” In other words, the working environment, library ambience, appearance of employees, the physical setting, lighting, work environment, noise levels, etc. These must be healthy and suitable to make a positive impact on users.

Advertising

It plays an important role in promoting library services. A library can advertise its products and services in newspapers, scholarly journals, magazines, newsletters, radio, television, Web, etc. It also helps in image-building.

Librarians can appear and advertise on local radio and TV, highlighting the new role the libraries play in the present era (Jaafar, 1998). There are a variety of ways of advertising online. Traditional print advertisements include brochures, pamphlets, newspaper advertisements, etc.

Brochure

The design and presentation of brochures and leaflets should be aesthetic and attractive to users. The language should be simple and should hold the interest of the user.

Leaflets

Include guides to the library and its special collections, Web guides, Reading list on IT, and so on. Other brochures can be kept in the library at a location which is placed so that anyone who enters the library is attracted to that corner.

Posters

Offer good visual communication. They can draw attention when displayed at prominent locations and provide brief information about an event, service, etc. Old and defaced posters should be replaced on a regular basis.

Newsletters

The library can convey information about new acquisitions, new services, events and activities, fee changes, etc. Information regarding library can be included to convey a message to readers about the alertness of the library in updating and communicating small but important pieces of information. In fact, they are an excellent marketing tool because they list all the activities of a library. With ICT facilities in the library, an e-newsletter can be produced. The text of the newsletter can also be included on the library’s website.

Extension activities

Activities such as book displays, lectures, quiz, debates, seminars, competitions, exhibitions,
etc., can have a positive impact on the image of the library and can motivate people to come to the library and promote the use of its products and services.

Library Tour

For new and existing members can be used to promote the library services. While on a library tour, users can be prompted to ask questions and find out more about new activities, products, and services.

Library Month/Day

Organizing national library day/month can be an effective way to promote the library. A library can create awareness of its importance in society.

Promoting in Electronic Environment

Libraries, especially in large cities like Delhi, and Bombay use ICT tools in designing, developing, and disseminating services to satisfy their users. They also use ICT to promote their products and services. ICT-based channels include library websites and email.

Websites

Libraries websites can be accessed by users at any time. The websites contain details about the library, including the collection, subscriptions, service policy, terms and conditions, etc. It may also have graphics and multimedia advertising that can have an impact on visitors. The library website should be continuously updated to avoid an adverse effect on the image of the library. The website can also be interactive so users can communicate with staff. For this purpose, a directory of staff members should be posted on the website (Mahajan and Chakravarty, 2007).

Electronic Mail/Mail shots

According to Natarajan, (2002), e-mail is the most universal application on the Internet and it can be used for direct communication with potential users. There are many benefits to using email as a promotional tool. Mail shots are an effective medium that create personalized services, with information about library activities and events, membership renewal (Singh and Krishan Kum ar, 2005).

Bulletin Board

This is an offshoot of email and is a many-to-many email system. It is medium for messages of interest to a community of online users (Moorthy and Karisiddappa, 2000). This service can be used by libraries for disseminating information to online users.

Marketing of information in library

Recent days have witnessed tremendous output of information in various fields and
different media. Information technology is fast changing and bringing in ample advantages for information storage, retrieval, and dissemination of human knowledge at a faster pace. Information has become an essential economic commodity that can be used in crucial decision-making. India is a dominant player in the world market, where Libraries and information centers are basically service-based setups that cater to the information needs of the clientele they serve. In the fast-changing trends, libraries and information centers are under pressure due to the factors like budget cut, increasing cost of books and periodicals, availability of information products in different media and the ever-changing user needs and tastes. Libraries and information managers of today are facing a four-pronged challenge (Jain, 1999). Which are:

- Increase in clientele, their demands, and their experiences.
- Increase in the initial or capital cost of information and information technology, and the need to leverage the technology and find new levels of economies of scale to serve the increasing potential clientele.
- Drying up of the public sponsorship and subsidy and the need to find alternate sources of revenue.
- Complexity in ways of identifying clients and their requirements, and servicing them.

Purpose of marketing in academic libraries

There are two key purposes of marketing, (i) Achieving objective/goals of the academic libraries, and (ii) Satisfying users needs and wants. Main objective of academic libraries is to provide right information to right user at right time, and to put it in simple words satisfying users needs. The second purpose is related to the first, if we provide products/services at right time to right users and fulfill the users needs then we complete the purpose of marketing. Main purpose of marketing in academic libraries is to encounter a four-pronged challenge as mentioned above.

Benefits of marketing of library information products

A well-developed marketing of library information products program will bring in the following benefits: Improved satisfaction of the users.

- Extension of service to potential users and thereby enlargement of the user’s circle.
- Efficient use of marketing resources.
- Improved resources attraction to the organization.

Challenges of marketing in libraries

There is confusion about what the term marketing means. Much of this has to do with the interchangeability of terms such as “promotion”, “public relations”, “publicity” and “marketing”. There is also confusion about marketing libraries; the perception is that marketing is a business tool and not applicable to library setting, exists in this context. Marketing is a complicated problem for libraries because of their wide range of products.
and services from books to internet access, and an extremely diverse audience that ranges from children to seniors, public officials to business people, students to faculty, and so on. Rather than pushing out responses to anticipated information needs, users, librarians wait for users to stop by the facility or stumble or across the library website (Bhatt, 2011).”

Kumaun University Central Library, Nainital: An Overview

Kumaun University was established in 1973, under the act number (10)/8651/15/75 (85)/64 in the year 23 November 1973 of Uttar Pradesh Government. Presently the university has three campuses.

Central Library

There is one central library of Kumaun University, which is situated near the government house of university. For the benefits of students and research scholars many national and inter national level research journal article are subscribed by the library, which is full of facility like internet and other technologies. At present this library provide many services, current news, research like article for the research scholar. This is large room, which is used regularly by the faculty, student, research scholar as well as staff. Exchanging central library, the libraries situated in both campus of the university are slowly adopting new and advanced technology. The library of Almora campus had been computerized and the library of DSB campus is in the process facility of department libraries.

Library Collection

Specialized well collection develops in humanities, social science. Basic science information technology and biotechnology. Total collection include 150000 items which is comprised of:

b. Reference collection.
c. Bound volumes of periodicals.
d. Thesis and Dissertations.

LIBRARY SERVICES

Acquisition

The acquisition of SOUL is an integrated multi-user library operation system. The acquisition modules enable the staff and officers of the Kumaun University library to consider the procurement of document.

Circulation

The circulation module maintains membership records and take of all possible operation in university library system. Maintenance of status of library item are related to circulation provides checking at all level. The circulation module including issue of documents, return,
renewal, reservation of document action recall etc. the fine management each category of users.

Reference Service

The reference collection in the university central library include dictionaries, directories, encyclopedia, almanacs, periodicals, indexed, guide to literature, handbook, maps, thesauri etc.

Reprographic Service

The service is available on a limited basis to patrons who visit the central library; photocopies are provided from reference books and periodicals against a charge of Rs1/- per page for black and white.

OPAC Modules

OPAC facilities to search the bibliographic databases including Boolean operation: OPAC of SOUL is the library collection. This is user-friendly and helps the readers in friendly and helps the reader in searching the required documents user can search database by author, title and subject headings.

University library use a windows based library management software “SOU L” which provides a total solution for library automation.

Review of Literature

(Green, 1989). A need for a high level of familiarity with the major sources of information in engineering disciplines and increased use of library materials for project work in new degree courses, lecture programmes were developed for the four engineering departments at the Edward Boyle Library of Leeds University concentrating on serials literature.

(Narayana, 1991). The library and information products and services are now being recognized as commodities that can be sold, exchanged, lent and transmitted. University libraries rely on their host organizations for operational costs. To gain some self-sufficiency, University libraries think seriously about not only recovering the costs incurred but also making a profit through their services.

(Kaur, 1999). The information services and products are an endeavour to accelerate the services to provide the researcher and scholars with the required information support. The budget cutback and the advent of sophisticated technology in the university libraries have opened up the view for marketing information products and services. If the libraries fail to catch hold of the opportunities, the scene will be captured by the commercial vendors.

(Rajyalaks Hand and Waghmare, 2001). A survey on faculty, research scholars and students of Nagpur University were conducted to know their awareness level and utilization pattern of computerized information services provided by the university library. The findings of the survey reveal that more than 70% of the users are not satisfied indicating the lacunae
in marketing efforts of the established services for reaching the targeted users

(Neuh aus and S nowd en, 2003). A study on Rod Library, University of Northern Iowa. The Marketing Committee created by dean of library services in 1999 to co-ordinate the library marketing. Various marketing efforts and experiments such as promotional newsletters, email postings, student surveys were employed to do the purpose.

(Pathak and Ansari, 2011). The market approach to information services and products is an endeavour to accelerate the services to provide the researchers and scholars with the required information support. The budget cuts and the advent of sophisticated technology in the university library have opened up the new vistas for marketing information products and services. If the university library fails to catch hold of the opportunities, the scene will be captured by the commercial vendors.

Need, scope and purpose for marketing information

The major inputs which are essential for any business, industry, teaching, research and development are considered to be only four Ms: “Men, Money, Material and Machines”. In recent years one more input which has become essential is “Information”. This is considered to be a very important commodity in the present day equation of “Information = Knowledge = Power. Hence Information is Power and it is life saver for industry, business, etc”. It is a fact that the information provided helps the users directly/indirectly in earning money, increasing knowledge or solving problems, etc, and thereby earning money. In order to provide correct and timely information, the library information centre has to invest and regularly spend money for hardware, software, manpower and collection development etc., to keep the information input base up-to-date. Today’s users are no longer limited to their own library information centers. Therefore library and information professionals too have to cater beyond electronic libraries and to go for marketing of information.

The present study aims at investigating the “Marketing of Library and Information Products and Services in Central Library of Kumun University, Nainital: A Study”. It focuses on information products and services available in Kumun University. The scope and coverage of the present study is limited to the Kumun University, Nainital.

The main purpose of the present study was to study the information needs and use pattern of teachers, students and research scholars of Kumun University library.

Objectives of the study

The following are the objectives of the study:

1. To investigate the collections available in Kumun University Central Library.
2. To examine the various types of information service, marketing methods used in the library in the study.
3. To explore the marketing of library and information products available in Kumun University, Nainital.
4. To explore the Marketing of Library and Information Services in KU.
5. To find out the reasons for not keeping up with innovations of library from users.
Research Methodology

The above objectives have been studied through the use of primary as well as secondary data. The primary data has been collected from librarian and other is for different users with the help of questionnaire. A questionnaire is prepared and used as a tool for collecting the data.

Analysis and interpretation of data

The use of marketing technology in a library would certainly promote the use of its resources and services, and create a demand for new services. The present study looks at information marketing activities in university libraries at Kum aun University, Nainital this study particularly aims at:

1. Identifying the extent and level of marketing activities;
2. Knowing about the products and services developed to meet the user’s needs;
3. Examining the library resources in relation to marketing; and understanding the attitude of library towards marketing.

Based on our findings, the results in the form of tables and demography are as follows:

1. Staff strength of University Library:

<table>
<thead>
<tr>
<th>Staff</th>
<th>No. of Posts filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Librarian</td>
<td>1</td>
</tr>
<tr>
<td>Deputy Librarian</td>
<td>0</td>
</tr>
<tr>
<td>Assistant Librarian/Information Scientist</td>
<td>1</td>
</tr>
<tr>
<td>Lib. Assistants</td>
<td>2</td>
</tr>
<tr>
<td>Supporting Staff</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
</tr>
</tbody>
</table>

The above table shows that the Central Library has 1 Librarian, 1 Assistant Librarian, Information Scientist, 2 library assistants and 6 supporting staff. The total staff strength of the central library is 10 members.

2. Library Budget (Sources of Finance)

From the received data we found that, The Central Library, Kum aun University received grants only from the state government and University Grant Commission (UGC).
The Central Library of Kumun University has a good collection of reference books, course books and thesis. Library subscribes about 80 national and international journals in print version. The above table-2 shows that central library has only 60% availability of print media and only 40% availability of non-print media.

3. The categories of users

<table>
<thead>
<tr>
<th>User</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>✓</td>
</tr>
<tr>
<td>Research</td>
<td>✓</td>
</tr>
<tr>
<td>Extension</td>
<td>✓</td>
</tr>
<tr>
<td>Administration</td>
<td>✓</td>
</tr>
<tr>
<td>Professional</td>
<td>✓</td>
</tr>
<tr>
<td>Technical</td>
<td>✓</td>
</tr>
</tbody>
</table>

Total Percent age 100%
The above table-3 shows that the central library has all types of users to study or use the library. They are academic users, research users, extension users, administration users, professional users, and technical users.

The central library does not maintain user’s profile to know changing information needs and interests of the users. Library has provision for inviting from the users for the reading materials to be added through OPAC, e-mail.

4. Marketing of Library & Information Products & Services

<table>
<thead>
<tr>
<th>Products</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly list of new additions</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Subject-wise bibliography</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Monthly document list (Periodical)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Abstracting and indexing journal</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Total Percentage 75% 25%

Marketing is not just about developing and promoting new services and products but also about bringing awareness to clients of existing services and products and determining their appropriateness. The above table-4 reveals that Central Library does marketing of 75% information products. These are monthly list of new additions, subject-wise bibliography, and monthly documentation list (periodical).

5. Promotion and Publicity Activities

<table>
<thead>
<tr>
<th>Promotion and Publicity Activities</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information contacts</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Personal contacts</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Demonstration (Online/CD-ROM/TEXINCON, Database during exhibitions)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Exhibitions/exhibition-cum -sale</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Brochure/pamphlets to target users</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Sample mailing</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Users’ group meet</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Open house</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Direct mail</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Liaison Visits and lectures</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Review of information products in national/international journals</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Annual report and house magazine</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Display of information products at airports, railway station</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Total Percentage 38.46% 61.54%
Promotion and publicity keeps the product in the minds of the users and helps stimulate demand for the product. Promotion involves ongoing advertising and publicity. The table shows that University Library promotes only 38.46% activities and 61.54% activities are not promoted.

### 6. Advertising

**Table 6**

<table>
<thead>
<tr>
<th>Advertising</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display of new arrivals</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Exhibitions</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Library brochure</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Annual report</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Atmospherics</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Presentation</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Total Percentage</strong></td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Advertising is bringing a product (or service) to the attention of potential and current user. Advertising is focused on one particular product or service. Thus, an advertising plan for one product might be very different than that for another product. Advertising is typically done with signs, brochures, commercials, direct mailings or e-mail messages, personal contact, etc. The above table shows that University Library advertises approximately 75% of products. These are display of new arrivals, library brochure, annual report, presentation.

### 7. Marketing of information services are being rendered

**Table 7**

<table>
<thead>
<tr>
<th>Information Services</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Awareness Services</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Selective Dissemination of Information</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Notification of newly published research</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Notification about conference/seminars/workshops</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Newspaper clippings</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Patents information</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Abstracting services</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Indexing services</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Reference services</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Translation services</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Inter-Library Loan</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Literature search</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Repackaging &amp; consolidation services</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Photocopying of periodical articles</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Circulation of periodical contents</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Total Percentage</strong></td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>
Marketing aims to identify the client base, and to determine and fill its needs, wants, and demands by designing and delivering appropriate products and services. The main focus of the concept is the client, and the goal is client satisfaction. The above table 9 reveals that at percentage of marketing of information service in University Library is only 40%.

8. Income source to the Library

**Table 8**

<table>
<thead>
<tr>
<th>Sources</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through Membership</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Through daily Usage</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Photocopying (Xeroxing)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Document Delivery</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Overdue fine</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60%</strong></td>
<td><strong>40%</strong></td>
</tr>
</tbody>
</table>

The above table 8 shows that Central Library, Kumaun University has 60% income sources. These are through membership, photocopying (Xeroxing) and overdue fine.

Based on Appendix II (For Users) our Findings and results in the form of tables are as follows:

1. Feeling to keep up with innovations in your field

   **Table 1**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>No. of Users</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To some extent</td>
<td>15</td>
<td>30%</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td>To a considerable extent</td>
<td>20</td>
<td>40%</td>
</tr>
<tr>
<td>To a great extent</td>
<td>10</td>
<td>20%</td>
</tr>
</tbody>
</table>

   The above table 1 shows that 40% users feel to a considerable extent to keep up with innovations in his/her field and only 10% users feel to a moderate extent. 30% users feel to some extent and at last 20% feel to a great extent.

2. Reason for no satisfaction

   The importance of library use and satisfaction studies is vital to bottom line impact of library viability. User satisfaction is important as library patrons who once had limited choices in where to redeem their user service vouchers, now have multiple choices—site visits, remote access, mega bookstores, and a plethora of online resources. The table 2 reveals that in the Central Library 34% users reason for not satisfaction with the service is
Table 2

<table>
<thead>
<tr>
<th>Reasons</th>
<th>No. of Users</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No current awareness services available</td>
<td>17</td>
<td>34%</td>
</tr>
<tr>
<td>No specific information available in field of interest</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>No time to use library</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>Limited knowledge of library collection</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>Underdeveloped information products/services offered by library</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td>Others (please specify)</td>
<td>5</td>
<td>10%</td>
</tr>
</tbody>
</table>

No current awareness service available. 20% users have no time to use the library and limited knowledge of library collection.

3. Use of Library

Table 3

<table>
<thead>
<tr>
<th>Particular</th>
<th>No. of Users</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>7</td>
<td>14%</td>
</tr>
<tr>
<td>Twice a week</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>Three times a week</td>
<td>9</td>
<td>18%</td>
</tr>
<tr>
<td>Four times a week</td>
<td>11</td>
<td>22%</td>
</tr>
<tr>
<td>Five times a week</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td>Once a week</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
<td>8%</td>
</tr>
</tbody>
</table>

Libraries are a source of free information. Libraries house books, newspapers, magazines, reference materials, art, historical documents, videos on tape and DVD, music on tape and CD (vinyl too), e-book downloads etc. Libraries also provide internet services, educational classes, entertainment programmes and more. The table 3 shows that mostly users use the Central Library four times in a week (22%). Minimum users (6%) use the library only twice a week.

4. Purpose to using the Library

Table 4

<table>
<thead>
<tr>
<th>Purpose</th>
<th>No. of Users</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To gain current awareness and to keep up-to-date</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td>To find specific information in your field of interest</td>
<td>6</td>
<td>12%</td>
</tr>
<tr>
<td>To read newspaper</td>
<td>11</td>
<td>22%</td>
</tr>
<tr>
<td>To study</td>
<td>19</td>
<td>38%</td>
</tr>
<tr>
<td>To photocopy the periodical articles</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td>To use micro-for ms</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Any other</td>
<td>1</td>
<td>2%</td>
</tr>
</tbody>
</table>
People use the Library primarily for three purposes, to get to know it as a general purpose resource they can use over time, to find a specific type of resource to solve a current problem, achieve a goal or meet an interest and to develop personally, professionally or organizationally. The above table 4 reveals that in Central Library users mostly use the library to study (38%). After that to find specific information is 12%, to read Newspaper is 22%, to gain current awareness and to keep up to date is 16%, to photocopy 10%, and any other is only 2%.

5. Need/expectation of users for information services

Table-6

<table>
<thead>
<tr>
<th>Information Services</th>
<th>No. of users</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Awareness services</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Selective dissemination of information</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Notification of newly published research</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Notification about conferences/seminars/workshops</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Newspaper clippings</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Patents information</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Standards information</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Abstracting services</td>
<td>40</td>
<td>80%</td>
</tr>
<tr>
<td>Indexing services</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reference services</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Translation services</td>
<td>45</td>
<td>90%</td>
</tr>
<tr>
<td>Inter-library loan</td>
<td>30</td>
<td>60%</td>
</tr>
<tr>
<td>Literature search</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Repackaging and condensation service</td>
<td>26</td>
<td>52%</td>
</tr>
<tr>
<td>Photocopying of periodical articles</td>
<td>50</td>
<td>100%</td>
</tr>
<tr>
<td>Circulation of periodical contents</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other service/s (please specify)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The libraries are changing from storehouse of books to dynamic service center, the user needs the library services on a wide range of areas and anytime. The delay in giving the right information in right time may lead to delay in their research activity, which leads to delay in filing for patent. The above table 6 reveals that only 5 services are mostly needed/expected from the users. Photocopying of periodicals service is highly expected from the users i.e. 100%. After that expectation of users for abstracting service is 80%, translation services is 90%, inter-library loan is 60%, and repackaging and condensation is 52%.

Finding, Suggestion and Conclusion

Findings and observations of the study based on the findings of the survey and its analysis for the Kumaun University, Central Library services and information products, the following findings have emerged:

• From the received data we found that, The Central Library, Kumaun University
received grants only from the state government and University Grant Commission (UGC).
- Kumaun University's Central Library has a good collection of reference books, course books and thesis. Library subscribes about 120 national and international journals in print version.
- The table-4 shows that the central library has all types of user to study or use the library. They are academic users, research users, extension users, administration users, professional users, and technical users. The central library does not maintain user’s profile to know changing information needs and interests of the users. Library has provision for inviting from the users for the reading materials to be added through OPAC, e-mail.
- The table-5 reveals that Central Library does marketing of 75% information products. These are monthly list of new additions, subject-wise bibliography, and monthly documentation list (periodical). The table-6 shows that University Library promotes only 38.46% activities and 61.54% activities are not promoted. The above table-7 shows that University Library advertises approximately 60% of products. These are display of new arrivals, library brochure, Annual Report, present action.
- The table 3 (Appendix II) shows that mostly users use the Central Library four times in a week (22%). Minimum users (6%) use the library only twice a week.
- The table 4 (Appendix II) reveals that in Central Library, users mostly use the library to study (38%). After that to find specific information is 12%, to read Newspaper is 22%, to gain current awareness and to keep up to date is 16%, to photocopy 10%, and any other is only 2%.
- The table 6 reveals that only 5 services are mostly needed/expected from the users. Photocopying of periodicals service is highly expected from the users i.e. 100%. After that expectation of users for abstracting service is 80%, translation services is 90%, inter-library loan is 60%, and repackaging and condensation is 52%.

Suggestions

Based on the findings, it can be suggested that to improve the library services and information products. The University Library should provide the best and latest possible services to the various information seekers and that too at a reasonable price. Moreover, as per the general feeling among the users the opening hours of the libraries should be increased all in all, it should be kept in mind that the library services should see to it that they guarantee optimum satisfaction to the users.

Conclusion

The present investigation has been carried out on Kumaun University Central Library. It was found out that the university library lacks adequate infrastructure and the concept of marketing of library and information products and services is somewhat new to it. The university library does not earmark separate budget to compute erize library services and purchase new information marketing products. The maintenance of the statistical records pertaining to their activities and services in the university library are poor. There is lack of use and appropriate technology in the university library and the staff of university library...
is ignorant of the modern online information services offered by national and international agencies. Concluding, it can be said that a great lot is still to be done in order to benefit the users of library services.

**Bibliography**

A Bibliometric Study of Thesis on Kum aun Himalaya Submitted at Central Library, Kum aun University, Nainital

Rama Bohra; Deepa Devi

Abstract

This paper presents overview of thesis on Kum aun Himalaya through bibliometric study. Total 528 thesis submitted at central library and Botany is highest (1) in rank. Out of 24 subjects there are 87 (16.47%) thesis submitted in botany, after Botany History is in 2nd position with 14.37% thesis, Geography and Political science is in third and Fourth rank. Maximum researchers used Hindi language for their research and male researcher scholar are more than female. There is only one these which page length are 801 to 900. In year-wise distribution 2012 is in first rank, this year maximum 59 Ph.D. done in Kum aun Himalaya.

Keywords

Bibliometrics, Himalaya, Kumaun, Thesis

Introduction

Today, uses of bibliometric techniques are increasingly day by day and it is an essential tool to evaluate research publications. Alen Pitchard was the pioneers of the term “bibliometric” in 1969. Before this in 1917, E.JCole and Nellie B. Eates show the first recorded study on “Bibliometrics” they used this term in science progress. Few years later in 1923, Hulme used the word “Statistical Bibliography”. According to Faith orne, “Bibliometrics today is the quantitative treatment of the properties of recorded discourse and behaviour appertaining to it”\(^1\) It is a strong tool to mapping or measuring the publications.

Kumaun Himalaya: “Kum aun” the name of the socioculture region of Kum aun is believed to have been derived from “Kurmanchal” which means land of Kurmavtar (the tortoise incarnation of lord Vishnu).

Kum aun Himalaya is an important part of Uttarakhand state. There are two region in Uttarakhand, one is Kum aun, another is Garhwal. Kum aun region include six districts. It is west central part Himalayas in north India, extending two hundred miles (almost three hundred kilometers) from the Satlaj River east to the Kali River. It rises to twenty five thousand six hundred forty six feet (almost seven thousand eight hundred red seventeen meters) at Nanda Devi; it is the 2\(^{nd}\) highest peak of India and to seven thousand seven hundred red...
fifty six meters at Kamet, near the Chinese border. At elevations above fourteen thousand feet and snow covers the mount ains throughout the year. Dehradun is commerce centers. and also the capital of Uttarakhand. People from the other parts used Masoori as a sumer resort and educational centre, and Hindu pilgrims to visit religious sites in the high mount ains of the far north trip temples at Gangotri, Badrinath and Kedarnath.²

1. Literature Review: Miriam Ap. Barbosa Merighi, Roselane Gonçalves and Fernanda Cristina Ferreira² (2007) the purpose of this study to analyze the scientific production of nursing dissertations and thesis. Nazan Özenç Uçak and Umut Al²(2009) this study analyzed that litera ture obsolescence, language preferre d, journal and monograph used, num ber of citations used and auth ors are related to the fields. S. Thanuskodi³ (2010) main purpose of this study to analyze the research production performance of social scientists. Rabindra K. Maharana & Bipin Bihari Sethi³ (2013) this article is a bibliometric analysis of scientific research productivity of Sambalpur University during the 2007-2011. E.S. Kavitha¹ and K. Sivaraj² (2014) according to this study that the highest num bers of theses submitted in the year 2009 and Yogakshema journal referred mostly by researchers. Neeraj Kumar Chaurasia and Shankar B. Chavan⁶ in (2014) they analyzed the content of papers published, the annu al average growth rate per cent, authorship pattern, and auth ors productivity etc. M. Ravichandran G. Sivaprasad K. Manoharan⁷ (2014) this paper presents the different types of resources used by research scholars for their Ph.D. thesis in the field of libr ar y and information science. Researcher cited 69% journals for their research purpose and foreign journals cited more than national journals. Patra, Bhattacharya and Verma⁸ (2006) this paper is a bibliometric study of bibliometric literature using data from LISA. Bradford’s and Lotka’s law used in this study. It is clear that auth ors’ distribution do not follow original law of Lotka’s.

2. Objectives of the Study: The main objective of this study give information about the thesis submitted to Central Library of Kumau n Himalaya, Nainital on the topic “Kumaun Himalaya” in different subjects. Some other objectives are given below.
1. Knows the quantitative growth of Ph.D. theses in the topic Kumau n Himalaya.
2. Subject wise Distribution of the thesis on Kumau n Himalaya.
3. To study Gender-wise distribution of thesis.
4. To find out year wise distribution of thesis.
5. To examine number of pages of thesis.
6. To find out language of the thesis.

3. Methodology: For this study all thesis had been selected which are on “Kumaun Himalaya” available at Central Librar y, Kumau n University, Nainital from 1978 to 2014. Total 528 thesis submitted in different subjects. Thesis and accession register used for data collection.

4. Data analysis:

<table>
<thead>
<tr>
<th>S.I. No.</th>
<th>Gender</th>
<th>No. of thesis</th>
<th>Percentage of the thesis</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>315</td>
<td>59.65</td>
<td>I</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>213</td>
<td>40.34</td>
<td>II</td>
</tr>
<tr>
<td>3</td>
<td>Total</td>
<td>528</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
Above table shows the total 528 male and female research scholars have done Ph.D. in Kumaun Himalaya. Where 213 (40.34%) are female research scholar and rest 315 (59.65%) are male researchers. Rank is given according to numbers of researchers.

Table-2. Year-wise distribution of the Thesis

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Year</th>
<th>No. of Thesis Submit</th>
<th>Percentage of the thesis</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1978</td>
<td>03</td>
<td>0.56</td>
<td>XXI</td>
</tr>
<tr>
<td>2</td>
<td>1979</td>
<td>01</td>
<td>0.18</td>
<td>XXIV</td>
</tr>
<tr>
<td>3</td>
<td>1980</td>
<td>01</td>
<td>0.18</td>
<td>XXIV</td>
</tr>
<tr>
<td>4</td>
<td>1981</td>
<td>03</td>
<td>0.56</td>
<td>XXI</td>
</tr>
<tr>
<td>5</td>
<td>1982</td>
<td>02</td>
<td>0.37</td>
<td>XXIII</td>
</tr>
<tr>
<td>6</td>
<td>1983</td>
<td>03</td>
<td>0.56</td>
<td>XXI</td>
</tr>
<tr>
<td>7</td>
<td>1984</td>
<td>01</td>
<td>0.18</td>
<td>XXIV</td>
</tr>
<tr>
<td>8</td>
<td>1985</td>
<td>01</td>
<td>0.18</td>
<td>XXIV</td>
</tr>
<tr>
<td>9</td>
<td>1986</td>
<td>02</td>
<td>0.37</td>
<td>XXIII</td>
</tr>
<tr>
<td>10</td>
<td>1987</td>
<td>01</td>
<td>0.18</td>
<td>XXIV</td>
</tr>
<tr>
<td>11</td>
<td>1988</td>
<td>03</td>
<td>0.56</td>
<td>XXII</td>
</tr>
<tr>
<td>12</td>
<td>1989</td>
<td>04</td>
<td>0.75</td>
<td>XI</td>
</tr>
<tr>
<td>13</td>
<td>1990</td>
<td>02</td>
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<td>14</td>
<td>1992</td>
<td>02</td>
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</tr>
<tr>
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<td>03</td>
<td>0.56</td>
<td>XXII</td>
</tr>
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<td>16</td>
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<td>07</td>
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<td>06</td>
<td>1.13</td>
<td>XIX</td>
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<td>1998</td>
<td>14</td>
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<td>XIV</td>
</tr>
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<td>1999</td>
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<td>21</td>
<td>2000</td>
<td>09</td>
<td>1.70</td>
<td>XVI</td>
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<td>2001</td>
<td>16</td>
<td>3.03</td>
<td>XII</td>
</tr>
<tr>
<td>23</td>
<td>2002</td>
<td>42</td>
<td>7.95</td>
<td>V</td>
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<tr>
<td>24</td>
<td>2003</td>
<td>15</td>
<td>2.84</td>
<td>XIII</td>
</tr>
<tr>
<td>25</td>
<td>2004</td>
<td>19</td>
<td>3.59</td>
<td>XI</td>
</tr>
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<td>26</td>
<td>2005</td>
<td>23</td>
<td>4.35</td>
<td>VIII</td>
</tr>
<tr>
<td>27</td>
<td>2006</td>
<td>20</td>
<td>3.78</td>
<td>X</td>
</tr>
<tr>
<td>28</td>
<td>2007</td>
<td>10</td>
<td>1.89</td>
<td>XV</td>
</tr>
<tr>
<td>29</td>
<td>2008</td>
<td>45</td>
<td>8.52</td>
<td>IV</td>
</tr>
<tr>
<td>30</td>
<td>2009</td>
<td>39</td>
<td>7.38</td>
<td>VI</td>
</tr>
<tr>
<td>31</td>
<td>2010</td>
<td>34</td>
<td>6.43</td>
<td>VII</td>
</tr>
<tr>
<td>32</td>
<td>2011</td>
<td>51</td>
<td>9.65</td>
<td>III</td>
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<td>33</td>
<td>2012</td>
<td>59</td>
<td>11.17</td>
<td>I</td>
</tr>
<tr>
<td>34</td>
<td>2013</td>
<td>52</td>
<td>9.84</td>
<td>II</td>
</tr>
<tr>
<td>35</td>
<td>2014</td>
<td>08</td>
<td>1.51</td>
<td>XVII</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>528</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Above table is year-wise distribution of Ph.D. theses of 528 researchers. This table shows that the highest numbers of thesis submitted in the year 2012. This year total 59 thesis
submitted in Central Library, then in 2013 total 52 thesis submitted which in on 2nd in rank. The third rank goes to the year 2011 and year 2008 is in fourth rank, total 45 thesis were submitted during this year. In fifth position is year 2002 total 45 thesis submitted this year and so on depicted in the Table 2.

Table-3. Language-wise distribution of the Thesis

<table>
<thead>
<tr>
<th>Language</th>
<th>No. of Thesis</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindi</td>
<td>282</td>
<td>53.40</td>
</tr>
<tr>
<td>English</td>
<td>246</td>
<td>46.59</td>
</tr>
<tr>
<td>Total</td>
<td><strong>528</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

It is observed that maximum researcher use Hindi language for their research. Total 282 (53.40%) research scholars used Hindi and 246 used English for their thesis. In Kumaun region maximum of people know Hindi to read and write.

Table-4. Subject-wise distribution of the Thesis

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Subject</th>
<th>No. of Thesis</th>
<th>Percentage</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arts</td>
<td>2</td>
<td>0.37</td>
<td>XVII</td>
</tr>
<tr>
<td>2</td>
<td>Biology</td>
<td>1</td>
<td>0.18</td>
<td>XVIII</td>
</tr>
<tr>
<td>3</td>
<td>Biotechnology</td>
<td>1</td>
<td>0.18</td>
<td>XVIII</td>
</tr>
<tr>
<td>4</td>
<td>Botany</td>
<td>87</td>
<td>16.47</td>
<td>I</td>
</tr>
<tr>
<td>5</td>
<td>Chemistry</td>
<td>8</td>
<td>1.51</td>
<td>XII</td>
</tr>
<tr>
<td>6</td>
<td>Commerce</td>
<td>42</td>
<td>7.95</td>
<td>VI</td>
</tr>
<tr>
<td>7</td>
<td>Computer Science</td>
<td>1</td>
<td>0.18</td>
<td>XVIII</td>
</tr>
<tr>
<td>8</td>
<td>Drawing &amp; Painting</td>
<td>4</td>
<td>0.75</td>
<td>XVI</td>
</tr>
<tr>
<td>9</td>
<td>Economics</td>
<td>44</td>
<td>8.33</td>
<td>V</td>
</tr>
<tr>
<td>10</td>
<td>Education</td>
<td>13</td>
<td>2.46</td>
<td>IX</td>
</tr>
<tr>
<td>11</td>
<td>Forestry</td>
<td>13</td>
<td>2.46</td>
<td>IX</td>
</tr>
<tr>
<td>12</td>
<td>Geography</td>
<td>58</td>
<td>10.98</td>
<td>III</td>
</tr>
<tr>
<td>13</td>
<td>Geology</td>
<td>4</td>
<td>0.75</td>
<td>XVI</td>
</tr>
<tr>
<td>14</td>
<td>Hindi</td>
<td>41</td>
<td>7.76</td>
<td>VII</td>
</tr>
<tr>
<td>15</td>
<td>History</td>
<td>76</td>
<td>14.39</td>
<td>II</td>
</tr>
<tr>
<td>16</td>
<td>Law</td>
<td>5</td>
<td>0.94</td>
<td>XV</td>
</tr>
<tr>
<td>17</td>
<td>Management</td>
<td>6</td>
<td>1.13</td>
<td>XIV</td>
</tr>
<tr>
<td>18</td>
<td>Music</td>
<td>1</td>
<td>0.18</td>
<td>XVIII</td>
</tr>
<tr>
<td>19</td>
<td>Physics</td>
<td>7</td>
<td>1.32</td>
<td>XIII</td>
</tr>
<tr>
<td>20</td>
<td>Political Science</td>
<td>51</td>
<td>9.65</td>
<td>IV</td>
</tr>
<tr>
<td>21</td>
<td>Psychology</td>
<td>5</td>
<td>0.94</td>
<td>XV</td>
</tr>
<tr>
<td>22</td>
<td>Sanskrit</td>
<td>10</td>
<td>1.89</td>
<td>XI</td>
</tr>
<tr>
<td>23</td>
<td>Sociology</td>
<td>36</td>
<td>6.81</td>
<td>VIII</td>
</tr>
<tr>
<td>24</td>
<td>Zoology</td>
<td>12</td>
<td>2.27</td>
<td>X</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>528</strong></td>
<td><strong>100</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table no. 4 is subject-wise distribution of the thesis. Botany is highest in rank, total 87
(16.47%) thesis submitted in this subject and history is in 2nd position, total 76 thesis submitted in this subject. Geography and political science are in 3, 4 rank with 58 & 51 thesis. Economics & Commerce goes to position no. 5 & 6 with 86 thesis jointly. The subject in 7th rank is Hindi and Sociology with 8th rank. Education & Forestry are in 9th rank and 10th position goes to Zoology. Computer science, biology, biotechnology and music were the lowest productive subject.

### Table-5. Length-wise distribution of Thesis

<table>
<thead>
<tr>
<th>Length of Thesis (Pages)</th>
<th>No. of Thesis</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 - 300</td>
<td>319</td>
<td>60.41</td>
</tr>
<tr>
<td>301 - 400</td>
<td>144</td>
<td>27.27</td>
</tr>
<tr>
<td>401 - 500</td>
<td>46</td>
<td>8.71</td>
</tr>
<tr>
<td>501 - 600</td>
<td>12</td>
<td>2.27</td>
</tr>
<tr>
<td>601 - 700</td>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>701 - 800</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>801 - 900</td>
<td>1</td>
<td>0.18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>528</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

According to above table 319 thesis length in between 200-300 pages. Total 144 thesis page range is 301-400 and 46 thesis length in between 401-500. Only one thesis has highest page number and 12 thesis length is between 501 to 600 pages.

### Conclusion

The analysis of data shows that in 2012, the highest number of thesis (59) submitted in Central Library, Kumaun University and male researchers shows their interest in Kumaun Himalaya in comparison of female researchers. Total 59.65% male scholars done Ph.D. in Kumaun Himalaya. It is also observed that research scholar of Kumaun University preferred Hindi as the language of the thesis. The percentage of the Hindi Thesis is 53.40%. Highest theses submitted in the subject of Botany. Total 87 thesis submitted on this subject and it is the 16.47% of the total percentage. The research growth on Kumaun Himalaya is not satisfactory. There are only 528 thesis on Kumaun Himalaya from the starting to 2014. There is a lot of scope for researchers to study especially in the subject Forestry, Hindi, Music, Arts, Sociology, and Political Science.

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Bibliometric Study of Thesis on Kumaun Himalaya Submitted at Central Library...

11. E.S. Kavitha and K.Sivraj 2014 Retrieved on 02/01/2015 from http://www.lsrj.in
Use of Digital Information Resources by the Students of Birla Institute of Applied Sciences, Bhimtal (Uttarakhand)

RAMA BOHRA; S.K. PANDEY & JAYVAR DHAN

Abstract

Today we are living in the age of digital information. The aim of current study is to find out the digital or electronic resources use by BIAS students. Almost every student of BIAS is well aware about digital resources. An electronic questionnaire was distributed to 300 students to collect data only 200 filled the questionnaire. It is found that students know about digital resources but they are not using properly. Total 88.5% students using the Internet daily, majority of respondents use digital resources to collect their subject information. 27.5% of the students stated that ‘a limited access to computers’ is the main impediment to use digital resources.

Keywords

Digital Resources, Information Technology, BIAS.

Introduction

During the last few years digital information resources make the changes in almost every field. The Internet and the Web are constantly influencing the development of new modes of scholarly communication. The distribution time between product publication and its delivery has been reduced due to internet. Many libraries and information centers forced to move into digital or online, which is less expensive and more useful for easy access. This is especially helpful for distance learners who have limited time to access the libraries from outside. Libraries have witnessed a great advancement in the last few years in the collection development and in the other sector also. A significant transformation has been noticed in collection development policies and practices.¹

Library plays a very important role in providing the digital information resources and facilitating access to required information to the users in an easy and expeditious manner. Further, no one need not go to the library to make use of print materials as the digital resource can be made use of by any user through online access via networks or authentication methods at any time by comfortably sitting at home or office. In view of all this, digital
resources like CD-ROM database, online databases, online journals, OPACs and Internet etc. are slowly replacing the importance and usage of print media.²

Definitions

Those resources whose deal with both digital and digitized material which can be either accessible from library’s in house databases or from the web, are called digital information resources (DIR). Digital materials includes, e-books, e-news papers, e-magazine, thesis, dissertations, reports and other related materials which can be considered by users, researchers, information professionals or even by the library management itself; on the other hand digitized material means converting the materials from print to digital format, in that case materials must have preserve the copyright law for both digital and digitized format. Some resources will be permissible to furnish information in full text and others will be limited to metadata. Some resources will be freely accessible for any one from anywhere in the world and others will have limited accessibility due to the library’s policy and cost related issues, also for authentication.³

Literature review

According to Bob Kemp and Kris Jones (2007) “the use of digital resources by academic staff in a single UK University and its influence on academic practice over a two to three year period.” Carol Tenopir(2003) “This report for the Council on Library and Information Resources (CLIR) summarises and analyzes more than 200 recent research publications that focus on the use of electronic library resources and were published between 1995 and 2003.” Ziming Liu (2006) “This study explores the extent to which graduate students in a metropolitan university setting use print and electronic resources”.

Birla Institute of Applied Sciences

The journey began in 1969 with the establishment of a centre of the Birla Institute of Scientific Research (BISR) founded by Mr. B. M. Birla in the developing Bhimtal industrial belt. It is a fully residential institute that offers two courses: MCA and B.Tech (ECE & CS), both of which are approved by the AICTE (All India Council of Technical Education).

Central Library

The institute central library is a quite serene place; well equipped with documents that caters the information demand of the student & staff of the institute. The library is currently have collection of around 11540 volumes which contains books, CDs, projects reports etc. The library is growing steadily which approximately 600 documents per year. The library is subscribing 32 periodicals, 16 magazines including technical titles and 16 journals from both national and international publications.

Digital Repository

This is the beauty of central library. In last few years IT and specially Internet has changed
the way in which information and knowledge was shared. To cope with this global trend BIAS has taken the initiative by adding Dspace Digital Repository software to its domain. Dspace is software developed by MIT & HP labs. In a short span of 9 month, collection of digital repository has growing day by day; it includes research articles, thesis, E-books and links to 50 open access journals. It has sound hardware supports with Xeon 4 server with mass storage array (MSA) with a capacity of 730G B of storage space.

Objectives of the study

The main objective of the present study are:

1. To assess the familiarity, frequency and use of different types of digital resources by the BIAS students.
2. To find out the purpose and utilization of the digital information resources and services by the BIAS students.
3. To know the adequacy of digital resources.
4. To find out the problems encountered by the students while accessing and using digital resources; and
5. To suggest suitable suggestions and recommendations to improve the digital resources and services for the benefit of users.

Scope and Limitation of the study: Present study includes students of all branches of BIAS and limited to the knowledge and use of digital information resources used by BIAS students.

Methodology: Keeping in view of the objectives in mind, a questionnaire is prepared to collect data from the BIAS students, and send it to 300 students by their mail id. Only 200 students fill the questionnaire and reply. Some students are on leave and other are not interested to fill the questionnaire.

Data analysis & Presentation

1. Student’s familiarity with digital sources: The distribution of students according to their familiarity to use digital resources is shown in Table 1.

<table>
<thead>
<tr>
<th>Use</th>
<th>No of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiar</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Not familiar</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>

It is found from Table 1 that all the 200 students are familiar with digital resources; it means BIAS students have a good knowledge of information technology and digital resources.

1. Frequency of using the computers

The distribution of students according to their frequency of using the computers is shown in Table 2.
Table-2. Distribution of Students according to their frequency of using the computer

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>2 or 3 times a week</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Once a week</td>
<td>27</td>
<td>13.5</td>
</tr>
<tr>
<td>Once in a month</td>
<td>13</td>
<td>6.5</td>
</tr>
<tr>
<td>Rarely</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Never</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>

It is evident from Table 2 that 50 per cent of the students are using the computer daily, 20 per cent using two or three times in a week, 6.5 per cent once in a month, 13.5 per cent once in a week, 5 per cent rarely and the remaining 5 per cent of the students are never use the computer because they use mobile phone for accessing digital information resources.

2. Frequency of using the digital resources

The distribution of students according to their frequency of using the digital resources is shown in Table 3.

Table-3. Distribution of students according to their frequency of using the digital resources in percent ages

<table>
<thead>
<tr>
<th>Digital Resources</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daily</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>CD-ROM Databases</td>
<td>63(31.5)</td>
</tr>
<tr>
<td>Internet</td>
<td>177(88.5)</td>
</tr>
<tr>
<td>E-mail</td>
<td>98(49)</td>
</tr>
<tr>
<td>Online Databases</td>
<td>35(17.5)</td>
</tr>
<tr>
<td>Online Journals</td>
<td>38(19)</td>
</tr>
<tr>
<td>Search Engines</td>
<td>157(78.5)</td>
</tr>
<tr>
<td>OPAC</td>
<td>25(12.5)</td>
</tr>
<tr>
<td>College Websites</td>
<td>33(16.5)</td>
</tr>
</tbody>
</table>

According to above Table 3 that 31.5 per cent of the students are using the CD-ROM databases
daily, 20 per cent once in a week, 16 per cent two or three times in a week, 13.5 per cent once in a month, 23 per cent rarely, and 15 per cent never use the CD-ROM databases. Majority of the students (88.5%) using the Internet daily, 1.5 per cent once in a week, 10 per cent two or three times in a week. 49 per cent of students are using e-mail daily, 32 per cent two or three times in a week, 11.5 per cent once in a week, and 7.5 per cent once in a month.

It is also clear from table 3 majority of the students (43.5%) are using the online databases once in a week, 15.63 per cent once in a week, 33.5 per cent two or three times in a week, 1 per cent rarely use, and 17.5 per cent daily use the online databases. Majority of the students (30%) are using the online journals once in a month, 29.5 per cent use 2 or 3 times in a week, 1.5 per cent never use, 15 per cent once in a week, 5 per cent rarely use, and 19 per cent daily use the online journals. 78.5 per cent of the students are using the search engines daily, 20 per cent two or three times in a week, 1.5 per cent once in a week. Majority of the students (30%) are using the online public accesses catalogue once in a month, 23 per cent two or three in a week, 12.5 per cent daily, 15 per cent in a month, 14.5 per cent rarely use, and 5 per cent never use the OPAC. About 51.5 per cent student are using the college website once in a week, 16.5 per cent daily, 18 per cent two or three times in a week, 11 per cent once in a month, 3 per cent rarely use the college website.

3. Purpose of using digital resources

The distribution of students according to purpose of using digital resources is shown in Table 4.

Table 4. Distribution of students according to their purpose of using the digital resources

<table>
<thead>
<tr>
<th>Purpose</th>
<th>No of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>For communication</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>For research</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>To collect subject information</td>
<td>90</td>
<td>45</td>
</tr>
<tr>
<td>Upgrade general knowledge</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>For career development</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>

Above Table 4 shows that 40 percent of the students indicate that the digital resources are used for communication purpose, 45 percent to collect subject information, 4.5 percent upgrade general knowledge, 0.5 percent research purpose, and 10 percent student are using digital resources for their career development.

4. Lear ned to use digital resources

The distribution of student learn to use digital resources is shown in Table 5.

It is clear from Table 5 that 67.5 percent students taking guidance from the departmental staff of computer science, 17.5 percent student are learning the necessary skills to use digital resources through self study (reading books/journals, tutorials etc.), 7.5 percent learning through the guidance from library staff, 2.5 percent through family, friend or colleague, and 5 percent student are learning to use digital resources through formal courses.
Table 5. Distribution of students according to the learned to use digital resources

<table>
<thead>
<tr>
<th>Learned to use digital resources</th>
<th>No of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study (reading books/journals, tutorials)</td>
<td>135</td>
<td>17.5</td>
</tr>
<tr>
<td>Family, friend or Colleague</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>Guidance from the library staff</td>
<td>15</td>
<td>7.5</td>
</tr>
<tr>
<td>Guidance from the departmental staff of Computer Science</td>
<td>35</td>
<td>67.5</td>
</tr>
<tr>
<td>Formal courses</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

5. Adequacy of information in digital resources

The distribution of students according to the adequacy of information in digital resources is shown in Table 6.

Table 6. Distribution of Students according to the adequacy of information in digital resources

<table>
<thead>
<tr>
<th>Opinion</th>
<th>No of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Sometime</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>Never</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

It is evident from Table 6 that 40 percent of the students indicate the information available in the digital resources sometimes adequate, 40 percent indicate never, and 20 percent indicate the information available in the digital resources is always adequate.

6. Prevents in accessing the digital resources

The distribution of students according to prevents in accessing the digital resources is shown in Table 7.

Table 7. Distribution of Students according to the prevents in accessing the digital resources

<table>
<thead>
<tr>
<th>Prevents</th>
<th>No of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of training</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Lack of time</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>Too much information retrieved</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>Lack of IT knowledge</td>
<td>45</td>
<td>22.5</td>
</tr>
<tr>
<td>Limited accesses to computers</td>
<td>55</td>
<td>27.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 7 shows the opinion of the students regarding prevents in accessing the digital resources. Majority (27.5%) of the students stated that ‘limited accesses to computers’ is the main impediment to use digital resources, 15 percent said ‘lack of time’, 25 percent ‘too much
information retrieved’, 10 percent said ‘Lack of Time’, and 22.5 percent ‘lack of IT knowledge’ is the main prevent to use digital resources.

Conclusions

According to above analysis it is clear that today almost every student of BIAS is well aware about digital resources. 50% students use computer daily, 5% students said they never use computer because they have well featured mobile phones so no need to use computer. Maximum stud ents are using internet and search engines daily and they use digital resources to collect subject information. Many students take help of computer science staff for using digital resources but some of them are learning the necessary skills to use digital resources through self study (reading books/journals, tutorials etc). Students also complained that at the digital information are not always adequate and there is only one hour to use computer in computer lab, so they cannot access required information in limited time. Students shows that at the use of digital resources is common among students of Birla Institute of Applied Sciences, Bhimtal. But practical use of digital resources is not up-to the worth in comparison to investments made in acquiring these resources.

Suggestions

Based on the detailed study and its outcome, the following suggestions are recommended to improve the use of digital resources among the BIAS students.

1. Library should organize awareness and training programs for students.
2. Timing of computer lab. should be increased.
3. More computer terminals should be installed in lab. or in the library for facilitating easy and quicker access to digital resources.
4. Need more Investment in digital resources than print resources.

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Public Library in India: An Overview

S. K. Pan Dey; Bibhash Kumar Mishra & K. K. Ahuja

Abstract

Public library should provide the services on the basis of equality of access for all, regardless of age, sex, religion, nationality and language. The public network must be designed in relation to national, regional and specific libraries. This paper discussed about the purpose and mission of public library. Paper also discussed about public library system i.e. Statutory System and Non Statutory System.

Keywords


Introduction

“AWELL-EQUIPPED and well-managed library is the foundation of modern educational structure. The importance of library in education can be appreciated properly and precisely only if we try to understand the changing concepts of education of today. Education bereft of library service is like a body without soul, a vehicle without an engine and an edifice merely a collection of bricks without cement. Education and library service are twin sisters and one cannot live apart from the other. (Mittal, 1996)”

“At one time, a library was regarded as a storehouse and books were meant for preservation. The librarian was supposed to be a custodian, who did not encourage the use of books. The readers were expected to use the library on their own. At the most, if a reader asked for a book, then so called librarian would pass on the book and leave him alone. As far as possible a librarian kept out of the way of readers. Libraries tended to be passive and archival institutions. Perhaps, there was not enough incentive for them to become dynamic. (Kumar, 2002)”

“According to Ranganathan, a library is ‘‘a public institution or establishment charged with the care of a collection of books, the duty of making them accessible to those who require the use of them and the task of converting every person in its neighborhood into a habitual library goer and reader of books’’. Thus a library is regarded as a public institution, which is also expected to convert the potential readers into actual readers. This is the concept of modern library. (Kumar, 2002)”
Types of Libraries

Broadly we may recognize the following types of libraries:

- Academic libraries (school, college and university)
- Public libraries
- Special libraries

It may be noted that the distinction between one type and another one is not always sharp. An engineering or medical college library can be considered an academic as well as a special library.

Public libraries

A public library serves the public. A public library is expected to perform the functions of providing for recreation, information, inspiration and education. It serves the local community and is open to public with out any distinction. Obviously the clientele to be served would cover a wide spectrum. It may include students, teachers, research scholars, businessmen, professionals, housewives, retired persons, neo-literates etc. Their educational attainments and cultural backgrounds will vary a great deal. (Kumar, 2002)

UNESCO defines public or popular libraries as, “those which serve the population of a community or region free of charge or for a nominal fee. They may serve the general public or special categories of the public such as children, members of the armed forces, hospital patients, prisoners, workers, and employees”. Thus a public library aims at serving the general public or special categories of the public in the community concerned. It is basically a service library, which is meant to provide free service or charge a nominal fee for its services. (Kumar, 2002)

“In the modern age libraries have become part and parcel of the cultural life of man. Every village, town, city and educational institution has/strives to have a library. Libraries cater to the varying needs of the people, belonging to different classes and creeds in each and every nook and corner of the world. Thus a public library is an institution for the people, by the people and of the people. Dr. S.R. Ranganath an, father of library science defines a public library as “a library owned and maintained by the public of its area for the socialization of its books and other kinds of materials for free service to the people of the area”. A public library is free to all irrespective of age, profession, race, sex, colour or creed and provides free access to any literature requisite. (Lal, 2002)"

Development of Public Library

“The first significant date in the development of public libraries in India is 1808 when the Bombay Government initiated a proposal to register libraries which were to be given copies of books published from the ‘Fund s for the encouragement of Literate. By the middle of the 19th century, three presidency towns of Bombay, Calcutta and Madras had their public libraries founded mostly with the active support and initiative of the Europeans in these towns. The second phase in the story of the library movement in our country lasted from the beginning of the 20th century to 1937. The third phase of the library movement began in 1937 when the Congress came to power in many provinces. This phase was really a
synthesis of the previous two phases. The main trend of this phase was setting up of village libraries through governmental effort. Assam, Bihar, Bombay, Orissa, Punjab, Cochin and some other provinces and states setup village libraries, even travelling libraries. It is estimated that in 1942 there were 13,000 village libraries in India. (Bhattaacharjee, 2002)"

Public Library System

India is a diverse federal country with wide variations in geographical and educational backgrounds of its constituent state. Naturally the scene and pattern of libraries differ from state to state. Thus from the public library organizational point of view, the states and union territories can be classified into two groups:

i. Statutory System; and
ii. Non-Statutory System

Statutory System


However, these states do not present a uniform pattern. Considering the main features of the Acts they can be very broadly classified into two types, viz.

Non-Statutory System

"States which have not yet enacted library legislation are developing their library services through administrative measures; (i) direct governmental effort, and (ii) grant-in-aid system. Generally speaking, bigger states have adopted the grant-in-aid system and the smaller states and union territories are establishing government libraries at different levels. Most of the states, however, combine both methods. The current tendency is to establish government libraries at divisional and district headquarters in bigger states and to give grants to other public libraries organized by voluntary organizations. (Jayaswal, 2002)"

Public Libraries in India generally provide lending and reading-room services. Mobile library services are limited to a few cities. They do not normally stock textbooks for students. Audio-visual services through TV-cum-VCRs are being arranged in a limited number of libraries under the assistance programme of the Raja Ram Mohan Roy Library Foundation. (Jayaswal, 2002)

Purpose of Public Libraries

"The purpose of the public library is to provide to the members of all society opportunities..."
to overcome some of the social and intellectual barriers, and that is why it is rightly said ‘Poor man’s University’. In the words of Ranganathan, ‘it should be helping the lifelong, self-education of one and all’. (Goswami, 2002)

“Public library should provide the sufficient resources to all the section of people involved in service to illiterates, neo-literates, children, young adults, students, scholars and general readers of different standards. Library service is the service to the people of a community regardless of caste, creed, religion, age, sex, language and status or education. (Goswami, 2002)"

**Missions of Public Library**

UNESCO has set the following missions for Public Library

- Creating and strengthening reading habits in children at an early age;
- Supporting both individual and self-conducted education as well as formal education at all levels;
- Providing opportunities for personal creative development;
- Ensuring access to for citizens to all sorts of community information;
- Facilitating the development of information and computer literacy skills.

**Functions**

The functions of public library are as following:

1. Information
2. Education
3. Recreation
4. Entertainment
5. Inspiration

Prof. Krishnakumar in his book mentioned that a variety of information is needed by users. Information may be required about local history, local industries and local personalities. A layman might require information for his survival. In developing countries, many users use a public library for the purpose of self-improvement. They are concerned with information and education. Success of a democracy depends upon universal education of people. In this context education is a continuing and lifelong process. In India, a large majority of school-going children dropout without completing their school education. Thus education of these needs to be continued beyond school leaving stage.

**Services**

A public library should provide following services:

1. Issue of documents
2. Inter-library loan
3. Provision of general and specific information
4. Assistance in the searching or location of documents or use of library catalogue or understanding of reference books
v. Readers’ advisory service
vi. Compilation of bibliographies
vii. Referral service

In case a book or periodical or some other document required for study and reference is not in the library, then it may have to be procured on inter-library loan.

Suggestion for the development of public Library System

An apex body for public libraries should be established in New Delhi, which will coordinate their activities of different states’ public libraries in India. It will also coordinate with other libraries abroad the development of public library system.

1. Access to centralized purchasing of library materials, supplies and equipment.
2. Internet facilities need to be introduced in the state central libraries in India and at least one terminal should be made available in each library. E-mail facilities should be introduced in the public libraries in a phased manner.
3. The Government of India should make it mandatory for all the states and union territories to pass library legislation. Hence the model library act for mutual adoption by RRRLF should be adopted on an all India basis.
4. The Central and State Governments should take up steps jointly to establish a national network of public libraries on the pattern of INFLIBNET for the purpose of resource sharing. This will contribute to national integration. (Lal, 2002)

Conclusion

To provide proper public library services to the remote area users, libraries have to modernize their facilities through networking, so that they can render better services and resource sharing facilities to the users all time. It emphasizes the need for adoption of a National Library and Information policy, Library Act, establishment of an efficient administrative structure and provision of adequate resources for library services and it is very essential to provide the computers and different electronic equipment along with library software packages at cheaper rates to the different categories of public libraries along with sufficient funds.

References


An Evaluative Study of Library Website of Selected IITs

S. K. Pandey; Vinod Kumar

Abstracts

This paper examines and explores how IITs libraries have to provide very flexible services focused more on individualized and distant contact with their clients. To answer new demands they not only have to move their services and resources to the Web but also should consider the different cultural and educational backgrounds of library users. In this context this article tries to analyze and compare the contents and usability of Seven Indian Institute of Technology (Kharagpur, Bombay, Madras, Kanpur, Delhi, Guwahati and Roorkee) library Web sites and presents conclusions regarding the basic functions they perform. Library Web sites were evaluated according to a detailed checklist prepared specially for this purpose.

Keyword


Introduction

In the present age, websites are being used as prime media of communication to the outside world. Acknowledging the need and usefulness of website, social, commercial and entertainment sectors have long been engaged in developing web-based information communication systems. With internet being the primary source of information, the distinctiveness of the libraries is gradually diminishing. To be relevant in the present day context, libraries need to go beyond their physical boundaries and working hours, to potentially expand library services and facilities to users located far-off. This necessitates libraries to use websites as means to provide access to information resources, online catalogues, news and events, besides providing information about library collection and facilities. However, merely having a website will not attract much of their users; they need to create such websites where users enjoy interactive experience and get into high quality online exposure that too in consonance with the rapid growth of online tools and ease of access to online resources. Therefore, libraries using their websites for web-based library
resources, interactive websites quality may be a major factor for the enhancement of library facilities and services. Online interactive features ensure users' involvement with the library website, improves its information and communication quality, and develop 'cognitive and social connection between users and librarians'.

Objectives of the study

The study purpose to determine the information content on the library Web pages of Kharagpur, Bombay, Madras, Kanpur, Delhi, Guwahati and Roorkee Indian Institute of Technology for better accessibility and use. More specifically, the study aims

- To assess the content of IIT library Websites.
- To know the existing facilities provided in the Websites of IIT libraries.
- To measure the aesthetic value, accuracy, currency, accessibility and user friendliness.
- To assess the relevance and quality of graphics, animations which are used in the selected libraries Websites?

Scope and Limitations of the study

The present study is conducted to develop criteria for evaluation of library websites based on content analysis of their content awareness. The criteria selected for the study are based on the content offered by the websites. A scale of evaluation criteria that has been developed was applied to the websites of Indian Institute of Technology India.

Indian Institutes of Technology (IITs) are a group of 16 autonomous engineering and technology oriented institutes of higher education and learning established and declared as institutes of National Importance by the Parliament of India. The IITs were created primarily to train scientists and engineers, with the aim of developing a skilled workforce to support the economic and social development of the country.

The present study covered 7 websites of IIT libraries out of 16 (Kharagpur, Bombay, Madras, Kanpur, Delhi, Guwahati and Roorkee). The details of all the existing IITs are listed in Table 1, which gives a brief sketch of all 16 IITs in India with their year of establishment, located city/town with URL.

4. Criteria for evaluating content of Web Sites

There are five criteria for evaluation of library websites such as:

- General information;
- Information about the collection;
- Information about library services;
- Information about Non-Book material and E-resources and
- Links, search and retrieval interface.

Research Methodology

The study is totally observational in which the structure, design, size, graphical presentation, library services and products of the websites of IIT libraries were observed. The primary
data was collected from the websites of IIT libraries then input the primary data according to different point of view in the MS-excel sheet then created the tables and graphs that are presenting the finding of study. The secondary data collected was from books, journals, internet, conference proceedings, and other sources.

**Table-1.** List of IITs in India (chronological order)

<table>
<thead>
<tr>
<th>Name of the IIT</th>
<th>Estd. Year</th>
<th>Short Name</th>
<th>City/ Town</th>
<th>State/ UT</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIT Kharagpur</td>
<td>1951</td>
<td>IITKGP</td>
<td>Kharagpur</td>
<td>West Bengal</td>
<td><a href="http://www.iitkgp.ernet.in/">www.iitkgp.ernet.in/</a></td>
</tr>
<tr>
<td>IIT Bombay</td>
<td>1958</td>
<td>IITB</td>
<td>Bombay</td>
<td>Maharashtra</td>
<td><a href="http://www.iitb.ac.in/">www.iitb.ac.in/</a></td>
</tr>
<tr>
<td>IIT Madras</td>
<td>1959</td>
<td>IITM</td>
<td>Chennai</td>
<td>Tamil Nadu</td>
<td><a href="http://www.iitm.ac.in/">www.iitm.ac.in/</a></td>
</tr>
<tr>
<td>IIT Kanpur</td>
<td>1959</td>
<td>IITK</td>
<td>Kanpur</td>
<td>Uttar Pradesh</td>
<td><a href="http://www.iitk.ac.in/">www.iitk.ac.in/</a></td>
</tr>
<tr>
<td>IIT Delhi</td>
<td>1963</td>
<td>IITD</td>
<td>New Delhi</td>
<td>New Delhi</td>
<td><a href="http://www.iitd.ac.in/">www.iitd.ac.in/</a></td>
</tr>
<tr>
<td>IIT Guwahati</td>
<td>1994</td>
<td>IITG</td>
<td>Guwahati</td>
<td>Assam</td>
<td><a href="http://www.iitg.ac.in/">www.iitg.ac.in/</a></td>
</tr>
<tr>
<td>IIT Roorkee</td>
<td>2001</td>
<td>IITR</td>
<td>Roorkee</td>
<td>Uttarakhand</td>
<td><a href="http://www.iitr.ac.in/">www.iitr.ac.in/</a></td>
</tr>
<tr>
<td>IIT Ropar</td>
<td>2008</td>
<td>IITRPR</td>
<td>Ropar</td>
<td>Punjab</td>
<td><a href="http://www.iitrpr.ac.in/">www.iitrpr.ac.in/</a></td>
</tr>
<tr>
<td>IIT Bhu Baneswar</td>
<td>2008</td>
<td>IITBBS</td>
<td>Bhu Baneswar</td>
<td>Odisha</td>
<td><a href="http://www.iitbbs.ac.in/">www.iitbbs.ac.in/</a></td>
</tr>
<tr>
<td>IIT Hyderabad</td>
<td>2008</td>
<td>IITH</td>
<td>Hyderabad</td>
<td>AP</td>
<td><a href="http://www.iith.ac.in/">www.iith.ac.in/</a></td>
</tr>
<tr>
<td>IIT Gandhinagar</td>
<td>2008</td>
<td>IITGN</td>
<td>Gandhinagar</td>
<td>Gujarat</td>
<td><a href="http://www.iitgn.ac.in/">www.iitgn.ac.in/</a></td>
</tr>
<tr>
<td>IIT Patna</td>
<td>2008</td>
<td>IITP</td>
<td>Patna</td>
<td>Bihar</td>
<td><a href="http://www.iitp.ac.in/">www.iitp.ac.in/</a></td>
</tr>
<tr>
<td>IIT Rajasthan</td>
<td>2008</td>
<td>IITJ</td>
<td>Jodhpur</td>
<td>Rajasthan</td>
<td><a href="http://www.iit.ac.in/iitj/">www.iit.ac.in/iitj/</a></td>
</tr>
<tr>
<td>IIT Mandi</td>
<td>2009</td>
<td>IIT Mandi</td>
<td>Mandi</td>
<td>MP</td>
<td><a href="http://www.iitm.ac.in/">www.iitm.ac.in/</a></td>
</tr>
<tr>
<td>IIT Indore</td>
<td>2009</td>
<td>IITI</td>
<td>Indore</td>
<td>MP</td>
<td><a href="http://www.iit.ac.in/">www.iit.ac.in/</a></td>
</tr>
<tr>
<td>IIT (BH U) Varanasi</td>
<td>2009</td>
<td>IIT(BH U) Varanasi</td>
<td>Ut ar Pradesh</td>
<td><a href="http://www.iitbhu.ac.in/">www.iitbhu.ac.in/</a></td>
<td></td>
</tr>
</tbody>
</table>

6. Analysis and Interpretation of Data

**A. General Information:** The general information about library includes mission, statement of the library, working hours, library rules, sections, committee and other information. It also includes authority, copyright, domain name, Webmaster and aesthetic features of the website.

**Table-2.** General Information available in IIT Library websites

<table>
<thead>
<tr>
<th>General information</th>
<th>IITKGP</th>
<th>IITB</th>
<th>IITM</th>
<th>IITK</th>
<th>IITD</th>
<th>IITG</th>
<th>IITR</th>
</tr>
</thead>
<tbody>
<tr>
<td>About institution</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>About library</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Mission statement</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Working hours/holidays</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Membership</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Library rules</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Copyright</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Library Committee</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Library staff</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Site map/floor map</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Library section</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>
Table 1 clearly shows the general information available on IIT ’s Library Websites. All the Websites have information about library, working hours, domain name and organisation. The entire website has no information about Mission statement. Only IITK library website has no information about date of update. IITD and IITR library websites have no information about library membership. Hit counter is available only IITKGP and IITM. Library sections are not available IITK and IITR. The IITB, IITM, IITD and IITG have best information organization. Audio-video service is not available on webpage of IITG and IITR.

A. Information about Library Collection: Encyclopaedia of Library and Information Science says “Library collection is the sum total of library materials, books, manuscripts, serials, government documents, pamphlets, catalogues, reports, recordings, microfilms, reel, micro cards and microfiche, CD’s etc., that make up the holding of a particular library”. The present study made an attempt to examine the availability of information about library collection on the Websites of respective IIT ’s and the data is presented in table-2.

Table 2. Information about Library Collection

<table>
<thead>
<tr>
<th>Library Collection</th>
<th>IITKGP</th>
<th>IITB</th>
<th>IITM</th>
<th>IITK</th>
<th>IITD</th>
<th>IITG</th>
<th>IITR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Journals</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Reference Sources</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Reports</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Thesis</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>News Papers</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Conference Proceedings</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Annual Reports</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>List of Print Journals</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Back Volume of Journals</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Ongoing Projects and Future Plans</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Monographs</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Note: Y = Yes, N = No
Information about library collection is presented in Table-2. All the library Websites under study have information on books, journals, references sources, reports, thesis, newspapers, conference proceedings and list of print journals. Only IITM has information about annal reports. IITR has not information about back volume of Journals. IITKG P, IITB, IITM and IITG, the information about monographs has been mentioned.

**B. Information about Library Services**: Library service describes the facilities provided by a library for the use of book and dissemination of information. Information about library services includes CD service, Web OPAC, translation, video view, ILL, CAS, DDS, Database Access, Internet based services, online off line document delivery, reference service, SMS queries, Indexing service, abstracting service, reprographic service, digital library and circulation.

**Table-3. Information about Library Services**

<table>
<thead>
<tr>
<th>Library Services</th>
<th>IITKGP</th>
<th>IITB</th>
<th>IITM</th>
<th>IITK</th>
<th>IITD</th>
<th>IITG</th>
<th>IITR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD Service</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Web OPAC</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Translation</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Video View</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>ILL</td>
<td>N</td>
<td>Y</td>
<td>N</td>
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<td>Y</td>
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<td>N</td>
<td>N</td>
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<td>Y</td>
<td>Y</td>
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<td>N</td>
<td>N</td>
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<td>N</td>
</tr>
<tr>
<td>Bibliographic service</td>
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<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
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<td>Reprographic service</td>
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<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
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<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

*Note: Y=Yes, N=No*

The table-3 illustrates the information available about the library services. All the IIT’s library Websites have information on library services viz., Web OPAC, database access, internet based services. Only IIT Madras library webpage has facilitated translation service. IIT Madras library Website has provided more services as compared to other IIT library websites. All IIT library websites have not information about online offline document delivery, SMS queries, indexing service and abstracting service/bibliographic service. Only IITR library website has provide information about CAS service. IITG and IITR library website has no facility of video view.
C. Information about Non-Book Materials and E-Resources: The term non-book material used for those library materials, which do not come within the definition of a book, periodical, or pamphlet and which requires special holding e.g., audiovisual materials, vertical file materials and similar items and have been not individually catalogued.

Table-4. Non-Book Materials and E-Resources

<table>
<thead>
<tr>
<th>E-Resources</th>
<th>IITKGP</th>
<th>IITB</th>
<th>IITM</th>
<th>IITK</th>
<th>IITD</th>
<th>IITG</th>
<th>IITR</th>
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<tbody>
<tr>
<td>E-Books</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
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<td>E-Journals</td>
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</tr>
<tr>
<td>E-Database</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>CD-ROM Database</td>
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<td>Y</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<td>Y</td>
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<tr>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>DVD’s</td>
<td>Y</td>
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<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>Institutional Repository</td>
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<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>INDEST</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<td>New Archives</td>
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<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Note: Y=Yes, N=No

The data on Non-book materials and E-resources availability is presented in Table-4. All II Ts library Websites have provided the information on E-books, E-journals, list of E-journals, E-database, CD-ROM database, non-book material, CD, DVDs, and IND EST. Only IITB has all services provide information about E-resources. IITKGP and IITB are provided News Archives services on web page. Institutional Repository provides on IITKGP, IITB, IITK, and IITR library websites. IIT Bombay library website has provided more information on non-book material and e-resources as compared to other IIT’s library websites.

D. Links, Search and Retrieval Interface: The links, Search, and Retrieval Interface includes downloads, news, suggestion box, FAQs, images, contacts, links to external search engine/gateway, user education, instruction, and helps on the all II Ts library websites.

Table-5. Links, Search and Retrieval Interface

<table>
<thead>
<tr>
<th>Dimension</th>
<th>IITKGP</th>
<th>IITB</th>
<th>IITM</th>
<th>IITK</th>
<th>IITD</th>
<th>IITG</th>
<th>IITR</th>
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</thead>
<tbody>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
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<td>Y</td>
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<tr>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Suggestion Box</td>
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<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>FAQs</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Images</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<td>Y</td>
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<tr>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Links to External search engine/Gateway</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>User Education, Instruction, Help</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Note: Y=Yes, N=No
Table-5 clearly indicates the links, search and retrieval interface facility available on the II Ts librar y Websites. All IIT ’s librar y Websites have given downloads, news, images, contacts, links to search engine/gateway, and user education. IIT Delhi librar y Website has more links, search and retrieval interface other II Ts librar y websites.

Findings of the Study

The major findings of the study are:

- The results of the study clearly show that all librar y Websites have information about librar y working hours, domain name and Institut ions. Information about mission statement is not available in any II Ts librar y websites. Only IITK librar y website has no information about date of update. The IITD and IITR librar y websites have no information about membership. Hit count er is available only IITKGP and IITM. Librar y sections are not available IITK and IITR. The IITB, IITM, IITD and IITG have best information organization. Audio-video service is not available on webpage of IITG and IITR.
- It is also found from the study th at all the librar y Websites have information on books, journals, referece sources, reports, thesis, newspapers, conference proceedings and list of print journals available in their Website. Only IITM has information about annual reports. IITR has not information about back volume of Journals. IITKG P, IITB, IIT M and IITG the information about monographs has been mentioned.
- It is evident from the study th at all the II Ts librar y Websites have information on librar y services viz., Web OPAC, database access, inter net based services etc. Only IIT Madras librar y webpage has facilitated translation service. IIT Madras librar y Website has provided more services as compared to other II Ts librar y websites. Only IITR librar y website has provided information about CAS service. All II Ts librar y websites have not information about online offline document delivery, SMS queries, indexing service and abstracting service/bibliographic service.
- Study clearly indicates that all II Ts librar y Websites have provided the information on E-book s, E-journals, list of E-journals, E-database, CD-ROM database, non-book material, CD, DVDs, and IND EST. Only IITB has all services provide information about E-resources. IITKGP and IITB are provided News Archives services on web page. Institut ional Repositor y provides on IITKGP, IITB, IITK, and IITR librar y websites. IIT Bombay librar y website has provided more information on non-book material and e-resources as compared to other II Ts librar y Website.
- This study results clearly indicate all II Ts librar y Websites have given downloads, news, images, contacts, links to search engine/gateway, and user education facilities. IIT Delhi librar y Website has more links, search and retrieval interface th an other II Ts librar y websites.

Suggestions

Based on the findings of the study in this section an attempt has been made to suggest a few recommendations, which will help to creator or designer of the Website to make librar y Website more interactive, attractive and workable. It will also be helpful to the user of the
library Website to evaluate its content, quality of information, design, structure, and organization of information. The present study made the following recommendations for improvement of library Websites.

- The study result shows that majority of library Websites have not mentioned the ‘Webmaster’ in their home page. Since the Webmaster is one of the important components of the library Website, it is necessary to provide Webmaster information to know the person who has created the Website.
- Date of updating shows the currency of information available on the Web page. The present study result shows that there are all most library Websites have mentioned the date of publication but the date of publication very old date. So it is very essential to mention the date of updating in the library Website.
- Only two library Websites have ‘hit counter’ facility. The hit counter shows the popularity of Web page. Therefore it is necessary to provide hit counter facility in the home page.
- Majority of library Websites have not mentioned the information on online document delivery and also question paper archives since previous year question papers are very helpful to the students. It is recommended to facilitate above mentioned services.

Conclusion

In the study, content analysis and usability of IIT library Websites have been examined. Though there is a growing number of ways and means of contacting users and showing the library’s services, the library Website should always be the main starting-point for searches and the virtual “entrance” to the library. The main criteria for quality for a library Website can be summarized as adequacy of language; clear structure; options for different user groups; all information up-to-date and short, concise information. The best preparation for creating a Website is for library staff to spend some time by surfing the Websites of similar libraries or organizations. This activity will give the staff an indication of what works and what does not, what is interesting to the online visitor and what is not pleasant to use. The library authority also needs to be identifying the skilled manpower and form a Web team who will be responsible to present library to the global community through World Wide Web.

References

An Evaluative Study of Library Website of Selected IITs


10. http://www.library.iitkgp.ernet.in/
11. http://www.library.iitb.ac.in/
13. http://library.iitk.ac.in/index1.htm
14. http://library.iitd.ac.in/
Role of Facebook in Libraries

SAN DHYA B. PAGARE

Abstract
The social networking sites (SNS) are useful for library and information professionals, as the SNS provide the opportunity to connect, interact and share the information with the users. This article is about this, but only Facebook is taken into the consideration for this article. The role of Facebook in the library is explained in this article. This is a general view article. With the help of the literature, the importance and use of Facebook is described. The small steps are given to create the Facebook page of the library. This will help to those librarians who are new for this experiment. With the use of the Facebook page of the library, the library can provide the different services and keep its users informed about the new arrivals, events and news.

Keywords
SNS, Facebook, Libraries.

Introduction
When we talk about the next generation libraries, we have different opportunities as well as concerns to the libraries. The social networking sites are the new opportunity for libraries to connect and interact with the users of the new generation. Nowadays, the users want to access all information and facilities on their desk only. The younger generation and technologically savvy users engage with most of the social networks, especially Facebook. Libraries can use Facebook as an important and useful tool. It plays an important role in libraries. This paper highlights the role and use of Facebook in libraries. The most important role has been played by Facebook in libraries is marketing of library product, services and facilities.

There are various social networking sites available, which are world widely used. It is also known as “Social Networking Service”. Online Dictionary for Library and Information Science, 2014 defines Social Networking Service as “An electronic service (usually Web-based) designed to allow users to establish a personal or organizational profile and contact other individuals for the purpose of communicating, collaborating, and/or sharing content with them. Most services allow members to restrict the visibility of their profile information to registered service members only, people on an established list of contacts, or particular groups of service users. Examples include Bebo, Facebook, Twitter, and Buzz from Google.”
The students have positive attitudes towards the use of social networking sites for academic work (Jahan and Ahm ed, 2012 ). This article mainly talks about the Facebook and its use for the library.

The objectives of this study are as follows:

1. To provide the small tutorial for Facebook use in the libraries
2. To highlight the use of Facebook in the libraries
3. To highlight the positive role of Facebook in the libraries.

Methodology

To achieve the objective, the literature review is the main source of data for this article. The author or uses the personal observation about the different studies to draw a conclusion. The author sees the Facebook as an opportunity for libraries, so she wants to throw the light on the positive impact of Facebook in the libraries. This is a general review paper; the author or has tried to narrate the role of Facebook in the libraries with the assistance of the other research on Facebook. The author or has learnt the technology of Facebook page creation on her own. The steps which are mentioned in this article will help the librarians to create a Facebook page for their libraries and use it. With the help of the findings of the literature review, the author or has drawn the conclusion.

Review of Literature

For collection of data on Facebook used in libraries, the author or has undertaken the review of literature on 2005 onwards. Keywords used for Review of Literature were Facebook—an introduction, Facebook—and the students, Facebook and the libraries.

Facebook was started in 2004 by Mark Zuckerberg. It is a free site for its account holders. Facebook users can do chatting online or send messages offline. It provides the timeline to its users. The timeline shows all activities of the user. With the help of Facebook, the people communicate, interact and share information online. The Facebook has huge popularity. It also provides the different kind of information. The users just need to like the Facebook page or join in the group of a particular company, institution, community or group on Facebook. The user can have the interesting and useful information by using Facebook as pulling technology, which brings the information on the desk of the users. Facebook plays an important role to connect with the old friends as well as and make new friends.

In the study of “Students’ perceptions of academic use of social networking sites: a survey of university students in Bangladesh”, Jahan and Ahm ed, 2011 found that at the students who access the Internet are also likely to use social networking sites. Jahan and Ahm ed highlighted Mazer et. al. (2007) study which shows that “the role of Facebook in teacher-student and student-teacher role which turns into the enhancement of classroom climate motivation among the students”. Pemberton (2011) shared his experience with Facebook. He said that “As I used Facebook more I began to realize that it would most likely not connect me to students in the ways I had hoped”. He explained the features and basic information about the database to the students with the help of Facebook and used the Facebook terminology. Information literacy concepts can be taught on the Facebook...
(Pemberton, 2011). According to Hewitt & Forte (as cited in Jahan & Ahm, 2011) "The two-third of the students' comfortable relationship with faculty is just because of the presence of faculties on Facebook". Jahan & Ahmed found that 98.56 percent of the students use the Facebook. Saw and other studies the length of usage of the Facebook and they found that at the most respondents have had a Facebook account for more than two years. They also found out the reasons for using Facebook. The findings shows around 60% of international and domestic students use Facebook for information sharing and 59% domestic students use Facebook for information finding than international students. The respondents from all selected countries use Facebook for finding information (Saw et. al., 2012).

Facebook for libraries

Any library can create its Facebook page. With this, the library gets publicity and can keep the users informed about the library's activities. By getting more likes to the Facebook page of the library, the library can reach to new users. Facebook provides latest valuable information. Facebook pages are continuously providing valuable news and information. Facebook provides the various features which are the advantages of it for any library.

- Only by liking a Facebook page, users can get information about the library's activities.
- Libraries can disseminate the information and resources, in return, the users can also provide the information which is available to them.
- The chatting facility on Facebook can be used to provide the reference services to its users. Librarians can provide face to face communication for the queries of the users.
- Libraries can get their alumni member of the libraries who may have an interest to work with the libraries.
- Libraries can get publicity and libraries can launch any service and promote on the Facebook for wide publicity.
- Libraries can provide the information as a 'status' or 'uploading photos' about the library's activities like book exhibition, book review competition, and new arrivals.
- The free online resources can also be displayed on the libraries Facebook page for making it more informative.
- Libraries can get the feedback as a comment or message on Facebook Page.
- Facebook can be used as a social book marking site.
- Librarians can ban any specific user if he/she is violating the rules and regulations of the library Facebook page.
- We can restrict the access of our Facebook page to limited and selected people.
- Two or three admin can be allotted to the Facebook page of the library in case of absence of any library professional to carry out the updates on the library Facebook page.
- The schedule of post on Facebook page can be fixed as per our requirement, we just need to select a date and time in the future for when you want your post to publish.
- We can invite the users to like the library Facebook page.

Everyone likes to connect with the Facebook, the libraries can take benefits by launching
its Facebook page. A Facebook page for libraries can be created using the following steps (Facebook, 2015):

• Click on the “create a page”
• Choose “Company, organisation or institution”
• As library word is not mentioned there, you can use “Education” category.
• Enter library’s or institution’s name.
• Get started.
• Fill the information about your library.
• Promote the library Facebook page by using some marketing strategies like, print the URL of the library Facebook page on the letterhead of the institution, put it on the notice board, add in your email signature and library brochure.
• You can add a profile photo, preferred audience or you can skip these steps.
• Your Facebook page is created. Now you post the photos of activities, new announcements, and new arrivals. For writing content on page, use the simple writing style.

Libraries on Facebook

Some of the examples of the library Facebook pages are as follows:

The Library of Congress

http s://www.facebook.com/librar yofcongress

The British Library

http s://www.facebook.com/britishlibrary

We can see the Facebook page popularity; we need to click on insights. We can check the page likes, post reach and engagement of users with the library Facebook page. To achieve the attention and feedback from the users, the library Facebook page needs the continuous updates and posts which should be in the interest of the users. It encourages the students to participate and provide their feedback on the Facebook page.

Conclusion

Facebook is useful for networking of professionals. We can use Facebook to connect with library users. Facebook can be used as a source of information and it can provide the CAS services. We can announce different events on our Facebook page of the library. The library professionals can inform the users about new services and collection. Facebook acts as a promotional tool for libraries. King (2011) commented on Facebook use for the library in his article. He said that, “Get that interaction going, and your customers—the ones wanting to interact with you in Facebook Pages—will become advocates for you and your library—not only online, but in person, too”. This sentence shows the benefits of Facebook for libraries. This is an important role played by the Facebook (King, 2011).
References


Mobile Apps Available for Libraries in Google Play Store: An Overview

SANJAY DATTATRAY AHER

Abstract

Library patrons are adopting mobile devices for personal and other uses. The usability of mobile devices especially smartphones will lead to changes in how and where students learn and education happens. Smartphones have become an unavoidable part of human life. Libraries have wanted to become mobile by making resources and services available anywhere, anytime. Librarians can use mobile devices and applications to include services in mobile learning environments. Challenges to libraries include uncertainty about which technologies to adopt in a rapidly changing technology landscape, the cost of technology adoption, staffing for 24 X 7, diversity of needs and preferences among library patrons, and the need to offer stable, consistent services. The combination of mobile librarians, mobile patrons, and mobile content provides an opportunity to move closer to the ideal of the ubiquitous library. Present study gives an overview of more than a hundred various library apps available in Google Play store for free of cost.

Keywords

Library Apps, Mobile Library Apps, Mobile Apps, Mobile Library Services

Introduction

Now-a-day’s many college students use smartphones for a variety of purpose. Smartphones have shifted their approach of using information searching tools from desktop computers to mobile devices mainly smartphones. This shift is because of simplicity in use and operating of smartphones and users’ convenience access ability regardless of place. Internet Service Provider companies are also encourage use of internet over smartphones by providing various high speed internet data packages. To attract this smartphone user community, web content developers started developing mobile applications. These mobile applications are Software application developed specifically for use on small, wireless computing devices, such as smartphones and tablets, rather than desktop or laptop computers. These apps facilitate access to web content in a creative way.

Millions of apps are developed by professional software developers for various operating systems platforms. Android is one of the operating system which is widely used now-a-
days. Google play store is a platform to download these mobile apps. Mobile apps becomes popular in library environment because libraries without walls becomes reality due to these apps. These apps have ability to provide all web services provided by library through mobile devices.

Present study aims to give an overview about mobile applications for library which are available through Google Play Store.

Objective
1. To overview mobile apps for libraries available through Google Play Store.

Methodology
To fulfill the objective researcher systematically study the Google Play Store website. “Library Apps” is a keyword used to search relevant apps. At the primary search more than 450 apps were retrieved, then price filter is deployed which reduces quantity to more than 250 apps which are freely available. Among these only those apps are considered for study which are having more than 2 star rating. These star rating denotes the popularity of the app among its users.

Observations
Depending on the type of library, type of resources and type of services these library apps are categorized in following categories,

Personal Library Manager Apps

- My Library Apps is a simple application which helps to manage our library at book.google.com. It also enables to download pdf books in public domain, barcode scanning through phone camera etc.
- Personal Library is a book management that helps to organize and catalogue book collection. It also help to remind loan book due date.
- My Library Manager is useful to track and manage book collection of personal as well as official library. One can also track the book which is loaned to someone.
- My Library keeps track of books user own, want to read or buy

Books Library Apps

- Home library apps contains 2400 classic English literature having book title and author search facility. User can add any number of book marks and have facility of auto reopening of last closed books.
- JW Library is an official app produced by Jehovah’s Witnesses which gives bible in six translations, books and brochures for bible study.
- JW Library Sign Language provides Bible and other video publications in sign-language.
- Gospel Library is developed by The Church of Jesus Christ of Latter day Saints to
promote scriptural learning and teaching manuals, church magazine, audio video recording, gospel art etc.
• Ebook Library gives Urdu books and novels from famous writers which can also be read in offline mode.
• Hadith Library facilitates downloading Hadith books for the prophet in Arabic with the ability to do advanced search in any book.
• Urdu Library apps is useful to read online Islamic ebooks on Quran in Urdu.
• alMahdi Library is devoted to books on 12th Imam of Shia Muslims Imam Mahdi. It also has full text search facility.
• Library of Urdu Books have a variety of genres like novels, poetry, history, suspense etc.
• Tamil Book Library contains a good collection of nationalized Tamil PDF books of famous authors.
• Cambodian Library offers free access to thousands of books in Khmer and foreign languages for Cambodia children, teenagers and adults for fun reading. User can also download international best seller to favourite comic book etc.

Federa ted Library Services Apps
• OverDrive is an app through which more than 30000 libraries offers titles if we have valid account of participating library.
• Libraries for developers provides a collection of third party libraries which is very useful of developers.
• Arduino Libraries contains details explanation of Arduino Libraries with the help of images, codes and diagrams.

Public Library Apps
• My Library is an app developed by Leisure & Cultural Services Department of Hong Kong Special Administrative Region Government. Through which user can search, reserve and renew library material. User can locate nearest public library through GPS and also use alert service such as pick up notices and due date reminders.
• Along with routine services CLEVNET Library provides facility to map the locations where your title is currently available.
• Multnomah County library access the entire collection of books movies music and more
• Leeds libraries
• Glasgow library
• Cincinnati public library
• Wellington city library
• Kent Library
• PCTC library apps theology library bibliographic information and loan information.
• Winnipeg public library
• Columbus library app
• Worthington Library
• Washington State library now
• Audio Books

Subject

Audio Books Librar y Apps

• iStory Time Story book librar y cont ains four full length Read Aloud Story books The Giant Smurf, Robin Hood, Ice Age and Madagascar etc.
• Naat Librar y is app through which user can download, stream, listen and manage naat sharif by famous naat khawans.
• Islamic Audio Librar y have audio lectures of various subjects to guide new muslims.
• Pastor Chris Digital Librar y is a mobile platfor m to access hund reds of audio and video messages from Pastor Chris.

Subject Specific Librar y Apps

• All in one SMS Librar y is a collection of offline SMS for many occasions. This collection is upda ted weekly.
• Skyscape Medical Librar y used by 2.5 millions health care professionals to access the medical resources they know and trust at the point of care.
• Thai Law Librar y offers large collection of Thai code of Laws.
• Islamic Apps Librar y gives us collection of Islamic apps including ebooks in Arabic, English h & Melayu. Apps like Al Quran, Islamic Messaging, Talking Dictionaries, Muslim Recipes, Halal Food etc.
• CV Librar y is job hunt ing apps which allow to receive push notification abou t new job and apply instantly.
• Librar y allows to browse BibTex files on android device
• Librar y leveler is to select most appropriate books for children from book store or librar y
• Medical vizards librar y is collection of award winning medical references guide and decision supp ort tools for healthcare professional
• ACM digital librar y have collection of articles and bibliographic records in comput ing and IT.
• Book Palm crowd librar y is a commun ity where you can talk abou t book you love with other book holics
• Lincoln Librar y inn ovative product line of welding and cutt ing equipments
• Kaqaz Persian librar y 300 poet and stories
• SikhLibrar y TheSikhLibrar y app let’s you stay up to date with Sikh issues/news from around the world. It is a one stop app to read Sikh news, blogs, Sikhi related social media feeds and have easy access to research/stud y litera ture related to Gurbani/History/Gurdwaras.
• Indian Law Mobile Librar y Indian Law Mobile Librar y application is created by Madras High Court Advocates to access certain Indian Bare Acts in mobile ph one. This app cont ains abo ut 71 important Cent ral Acts (as amended up t o 2013 amendm ents) which can be referre d in seconds with out any network connection.
• HM CA Librar y. This app is designed to facilitate stud ents of CA/CS/C WA for
utilizing their time to read books of famous and iconic auth or CA. ASEEM TRIVEDI anywhere anytime.

- Statut es and Case law librar y Statut es and Case Law Librar y is a cost-effective, mobile alternative to expensive legal resources like Lexis Nexis, Westlaw, Fastcase, and antiqua ted legal statut es and case law deskbook s. With PushLegal’s simple point-and-click navigation, you can quickly find the specific rule or statut e you’re looking for, and PushLegal will show you the leading case law associated with th at specific rule or statut e.
- Animal Librar y. This App is a comprehensive infographic and audio librar y of animals including terrestrial, marine and airborne species.
- Food Librar y. There are millions material in our dinner table. We build this librar y to provide you the complete food in our daily.
- Quiz librar y create your own quizzes/MCQ/tests and share with a group of people. Use them for kids leaning exercise, any exam preparation or any group sharing etc. Questions and answers can be randomized
- Brian Tracy Success Librar y Brian Tracy is Ch airman and CEO of Brian Tracy International, a company specializing in the training and development of individu als and organizations.
- ATC Librar y. The Aviation Theory Centre (ATC) is the foremost Australian pubisher and developer of media for the training of pilots in aviation theory topics such as aerodynamics, meteorology, navigation and hun an factors.

Conclusion

Based on these observations it can be concluding th at mobiles apps are used by various libraries to provide many services from OPAC to renew reminder. User can download content in any for mat for online as well as offline use. So it is need of time to provide the librar y facility through mobile apps.

Reference

Role of Libraries in Creating Learning Organization

SANJAY J. SAWANT

Abstract

Paper discuss about how libraries can play a part in developing learning organization in educational institutions. Libraries can implement characteristics and perform functions of learning organization in the educational institutions, and contribute to increase effectiveness, efficiency and impact of educational institutions. Paper theoretically discuss from the point of view of applying libraries as tools for making learning organization. Although libraries are applying all the tools of learning organization internally in their department, they can implement the same tools on organizational level and contribute towards overall development of parent institution, and for implementing these functions successfully, libraries will have to understand and study culture of parent institution, barriers to learning in parent institution and characteristics of learning organization.

Keywords

Learning Organization, Knowledge Management, Organizational Learning.

Introduction

Educational institutions have increased in numbers with the objective of imparting quality education, as well as making money. They can increase effectiveness, efficiency and impact in educational system by implementing the ideas of management and organizational concepts in educational institutions.

The paper tries to examine the relevance of “Learning Organization” concept for educational institutions with the help of libraries, and concludes that idea have significant relevance for the sector. Libraries can play important role in this direction. Paper not only describes characteristics of learning organization, but encourages libraries to examine their role in the light of these characteristics.

The key principles of learning organization are participation, empowerment, willingness to change and acknowledgement of grass-root experience. Ultimately educational institutions will stand unique on the qualities like capacity to learn, adopt and continuous improvement of quality.

Modern libraries will have to expand their services beyond particular user or group of
users. They will have to think on organizational level, as how it would contribute in the overall development of the organization. They should play vital role in achieving qualities like effectiveness, efficiency through professional skills like knowledge management, database management, communication and leadership skills.

The Learning Organization

Background
The term Learning Organization was first used in relation to the private and corporate organization. However, characteristics can be applied effectively and successfully for educational institutions. The concept has become synonymous for skill creating, acquiring and transforming knowledge and modifying its behaviour to reflect new knowledge and inside (Garvin, 1993).

What is Learning Organization?
Learning organizations are organized such a way that learning is a prominent feature at different levels like, individual, group and organization.

There are many different definitions of learning organization. One particularly influential definition is that of Pedler et. al. (1991): ‘an organization that facilitates the learning of all its members and continuously transforms itself.’

Swieringa and Wierdsma (1992) define organizational learning as ‘the changing of organizational behaviour’ which occurs through a collective learning process. They point out that an organization can only learn because its individual members learn. With out individual learning there can be no question of organizational learning. As per them, individual learning is a necessary but not a sufficient condition for organizational learning.

Dixon defines learning process as five way process.

1. Acquisition of knowledge
2. Sharing of knowledge
3. Constructing meaning
4. Organization memory
5. Retrieval of information

Making personal wisdom (tacit) available to others is central activity of learning organization (Nanoka, 1991), hence learning organization would support its members to translate information into knowledge and wisdom and then the ‘tacit’ wisdom of its individual into explicit wisdom which can be accessed and used by others within and outside the organization.

Characteristics of Learning Organization

On higher scale system thinking, personal mastery, share vision, team learning are the main characteristics of learning organization. These can be further described at micro level as follows:

1. A learning approach to strategy (encouraging flexibility by including strategic learning feedback loops).
2. Participative policy making.
3. Informating (using information technology to inform and empower people).
4. Formative accounting and control (structuring financial systems to assist learning).
5. Internal exchange (ensuring constructive, supportive relationship within an organization).
6. Reward flexibility (using creativity in how people are rewarded for good performance).
7. Enabling structures (avoiding multi-level hierarchies and encouraging flatter, collegiate style structures).
8. Boundary workers as environmental scanners (acknowledging the value of those who deal with the ‘outside world’ as sources of crucial information which can inform decision making).
9. Inter-organizational learning (identifying opportunities for networking, strategic partnership, benchmarking and joint learning activities).
10. Learning climate (facilitating experimentation and allowing mistakes providing they are used as learning opportunites).
11. Self-development for all (resources and encouragement for self-development are made available for all members of the organization).

**Source:** Pedler et al. 1991

### Key functions of learning organization

Educational institutions will have to study what they will have to learn to become a learning organization? The various literatures have suggested key functions, which must be undertaken to became an learning organization. The eight key functions (based on Slim, 1993) and their indications are discussed in following table.

<table>
<thead>
<tr>
<th>Function</th>
<th>Key Indications</th>
</tr>
</thead>
</table>
| 1 Creating supportive culture     | • Reward for the contribution  
• Politics should not get in the way of sharing experience and knowledge.  
• Resources and facilities are made available to all members.  
• People feel free to enquire and challenge each other’s assumption |
| 2 Gathering internal experience   | • Based on sharing and exchange.  
• Systematic procedure for regular monitoring, review and evaluation.  
• Allow staff to take time out to reflect on their work experience and learn from it.  
• Peoples at all levels are encouraged to learn regularly. |
| 3 Accessing external learning     | • Open co-operation with other organization.  
• Members dealing with ‘outside world’ are gathers and share relevant information.  
• Staff is encouraged to visit other organizations. |
4 Developing communications system

- Use wide range of networks for contact
- Information flows freely throughout organization.
- Organization has mechanism for sharing experience
- Staff have access to electronic media such as Internet to share

5 Mechanism for drawing conclusion

- Organization draws conclusion based on analysis of all of its practice experience.
- Organizations have skill of converting raw material into wisdom.

6 Developing organizational memory

- All key documents are cross referenced and made easily accessible to staff.
- Organization has systematic databases of all its programmes.
- The knowledge with leaving members is systematically recorded and documented.

7 Integrating learning into strategies and policy

- People are involved in policy making.
- Learning gain by one part of the organization is quickly made available to other part.
- Learning in Planning, accounting, budgeting, financial reporting are organized to understand relevance of each other.

8 Applying the learning

- Use of its learning to improve its own practice
- Organizations has a tools to measure impact of its learning
- Adopts changes in practices and priorities to apply adopts new technologies

Types of the learning for educational institutions

In learning organization members are expected to incorporate experience and knowledge through the development of practice, policies, procedures and systems in ways, which continuously improves its ability to set and achieve goals. In case of educational institutions members can learn from internal learning and external learning.

Internal learning

The members of institute can learn a lot from their subordinates, from different departments or from internal communication. This can happen from following events/ways.

(a) News Letter  
(b) Periodical meetings  
(c) CC Culture  
(d) Functions Celebrations  
(e) Informal days  
(f) Reporting
External Learning

The members of the institution can learn from similar organizations which may be benchmark for them. They can learn many things which are relevant to their subject from outer world, the sources may be following:
  a) Conferences
  b) Seminars
  c) Workshop
  d) Collaboration with other institutions
  e) Institutional membership

Learning within the Educational Institution

Having understood the meaning of learning organization and its characteristics, we will try to figure out the learners in educational institution and what should they be learning.

<table>
<thead>
<tr>
<th>Who Should be Learning</th>
<th>What should they be learning?</th>
</tr>
</thead>
</table>
| Management             | • Consistency between mission, strategy and impact.  
                         | • How policy choices and strategies work out in practice.  
                         | • How to make external relationship more effective.  
                         | • How best to exert influence.  
                         | • Improve social standing and credibility of the institution |
| Students               | Learning Skills  
                         | • Critical and creative thinking  
                         | • Effective communication  
                         | • Innovative ideas  
                         | Literacy Skills  
                         | • Information literacy  
                         | • Media literacy  
                         | • Technology literacy  
                         | Life Skills  
                         | • Flexibility  
                         | • Initiative  
                         | • Social skills  
                         | • Productivity  
                         | • Leadership  
| Faculty                | • Best practice in their area of expertise  
                         | • Ways of integrating with other disciplines  
                         | • How to deal with students  
                         | • Managing learning and student  
| Technical Staff        | • Participation in practice  
                         | • Best practice in their area of expertise  
                         | • Practical application of skills  
                         | • Reflection, critical evaluation and updating of skills  
| Administrative Staff   | • Maintaining daily work flow  
                         | • Operating practices, record-keeping systems and |
7. Role of Libraries in creating learning organization: Libraries can play its role by applying above concepts to its institution to make learning organization through following ways:

1. Continuous learning at the system level: Libraries can encourage individual to learn frequently and to share their learning in ways that enable the largest system to learn, here the services provided by library will play vital role and its effectiveness would depend on how libraries provide their services like SDI service. This learning by library may further extended to teams or organization as whole.

2. Knowledge Generation and sharing: The teachers, students, non-teaching employees are made think critically and new ways which will ultimately promote their share in generating new knowledge. Libraries will have to develop tools for collecting 'tacit' knowledge by preparing questionnaires. Libraries will acquire, analyze and systematically store this knowledge by creating databases through digital libraries, so that people who need it can access and use it quickly.

3. Systematically thinking capacity: People must think systematically about the impact of their decision. Considering institutions goal, libraries can prepare feedback loops for the teachers, students and other staff which can be used as aid for developing systematical thinking.

4. Greater participation and accountability: People must participate more fully in syllabus, strategy design and decision-making and take more responsibility for both result and learning. Creating study circles, organizing seminars, workshops, formal and informal functions will lead to participation of employees and students. The exchange of ideas and experience during these events can be documented for further use.

5. Culture and structure of effective communication system: The effective organizational structure, which will enable flexibility, open communication, cross functional conversation, and minimal amount of bureaucratic cross-checking will encourage creating learning organization. If the work carried out is communicated to its subordinate, the value and account ability of work done will increase.

Libraries will have to contribute towards increasing effective verbal and non-
verbal communication culture through mechanism like bulletin board, news letter, e-mail, group discussion, study circles.

**Barriers to learning in educational institutions**

The considerable benefits can be achieved by educational institutions, if they commit themselves to develop their capacity to learn at all levels. The most important obstacle to achieve excellence is barrier to learning and it is faced by every educational institution. The barriers to learning can be categorized as external and internal.

**External Barrier**

External barriers to learning are those which arise from the organization’s external environment and over which the educational has little or no control. Following are the possible external barriers for the educational institutions.

1. Affiliations to university/or to be deemed
2. Control of Governing body like AICTE, UGC
3. Political Changes
4. Policies of collaborative institutions

**Internal Barriers**

Educational institution should insist to provide learning atmosphere within the organization. Working culture and human traits are the main learning barriers within the institutions, some of them are:

1. Lack of importance
2. Doubt about success
3. Lack of control
4. Lack of support from others
5. Lack of advantages
6. Lack of communication within department
7. Bureaucratic structure of the organization
8. Lack of motivation

**Conclusion**

Due to advent of technology, the role of libraries has changed from merely storing the information to implementing knowledge management activities. Over the period libraries have catered the society in terms of information services and also have adopted changes in their services as per requirement of users. In the competitive environment every organization is striving for increasing effectiveness, efficiency and impact in their respective field. The boundaries and types of services provided by libraries can be extended beyond the library premises. One of the areas for such service can be actively taking part in creating learning organization. Libraries are doing all the functions required for learning organization internally in their department; hence they can implement the same functions on organizational level and contribute towards overall development of parent institute.
References

User’s Satisfaction on Library Collection in Kisan P.G. College Library: A Case Study

Sanjeev Kumar

Abstract

The objectives of this research paper are to evaluate the user’s satisfaction of the collection of Kisan P.G. College Library Simbhaoli, Ghaziabad (U.P.). Two hundred fifty copies of questionnaires were distributed among users of Kisan P.G. College Library, out of which two hundred responses were received. The questionnaires sought to determine the frequency of their visits to the library, purpose for which they visit the library, and problems faced to the use of the library, different type of collections of library consulted by the users and level of adequacy of library collection. This research paper revealed that students use the library mostly for preparing for their exams and writing class assignments and the major inhibitor to the use of the library is the long distance between the campus and the town where most of the students reside. It is seen that maximum students consult textbooks followed by reference books and periodicals. It seems less knowledge about the library. Frequency of visit to the library indicates that at the students’ attention, and science stream and the faculty members of agriculture and science visit maximum to the library for their purpose. The research paper recommends that more hostels should be built to accommodate more of the students. Lecturers should lay more emphasis on classroom discussions/seminars rather than lecture notes/hand outs. It also recommends the introduction of library orientation for fresh students and the inclusion of the use of the library in the college curriculum.

Introduction

Library is considered as the college and college library has been playing important role in supporting research, teaching, and extension missions of universities college and institutions. Libraries are essential part of this social communication process because they store and disseminate the accumulated thoughts of humanity. College libraries provide information support and functions as the nerve center for research and teaching activities. According to fifth law of Dr. S.R. Ranganath an “Library is a growing organism”. Library being a growing aims to provide users satisfaction at optimum level.

A modern library preserves the recorded human knowledge for use. Use of the collection is the basic aim of a modern library, which means, library exist because there are libraries and
User's Satisfaction on Library Collection in Kisan P.G. College Library: A Case Study

users. The library adopts measures to increase the accessibility of human and material resources and make them useful to faculty staff and students. All users of academic libraries have a right to expect library services to be up-to-date and commensurate with their needs provided by competent libraries and funded on adequate scale. As a resources centre it should play a great role in the learning process.

Kisan P.G. College Library

Kisan P.G. College, Simbhaoli, Ghaziabad, the banyan tree of education in India is the lap of countyside of Western U.P. is a genuine fruits of wisdom of education loving people, the peasantry of the area, especially the cane growers of the Simbhaoli. It is a co-educational institution. It is run by a “education society, Simbhaoli, Distt. Meerut” under co-operative society and Chit Fund Act in the year of 1949. First it was a junior high school in the same year and in the year of 1956. R.S.K. Degree College, Simbhaoli, Distt Meerut came with existence and got affiliation from Agra University.

The financial responsibility to grow up the educational sapling into a banyan tree of education and wisdom in the area was shouldered by members of cane growers’ society Simbhaoli, Meerut by contributing one percent coming to Simbhaoli sugar Mills, Simbhaoli and the management of the Simbhaoli sugar mills, Simbhaoli Ltd., jointly. During the span of time the local peasantry of the area got raised of the name of Raja Rahubir Singh and since then the Degree College was nomenclatured as Kisan Degree College Simbhaoli.

At present the status of college, under technical terms is of under graduate level having permanent affiliation in faculties of Humanities, Agriculture and Science and post-graduate level have affiliation in agriculture agronomy, M.Sc. Chemistry and Botany and M.A. Political Science.

Objective of the Study

Following are the objectives of the study:

• To find out the reaction of users towards library collections in college library.
• To assess the users need and to measure the degree of user’s satisfaction.
• To evaluate the collection of the Kisan P.G. College Library.

Review of Literature

Pratap (2007) conducted a survey of the libraries of 18 colleges of education in 3 districts of Punjab. He found that collection size of the libraries varied considerably and comparatively older colleges had large collections. Majority of the libraries were being kept open for 6 to 7 hours a day. He suggested for the introduction of user education programme and stressed on the need to increase the range and depth of collection. Gautam and Srivastava (2006) examined the prevailing position of documentation and information services of libraries of 30 agricultural universities in India under title “State-of-the-art of Documentation and Information Services in SAU Libraries in India”. It had been found that all libraries were providing current awareness service and bibliographical services. Gowda and Shivalingaiah (2009) “Awareness and Use of Library Facilities and Services by the Research Scholars in the Universities in Karnataka: An Analytical Study”. Study
brought forward significant differences in the satisfaction level of research scholars of different disciplines with facilities and services of libraries. Majority of the respondents of humanities and social science found the facilities and services of university libraries poor, whereas the respondents of science group considered the facilities and services as moderately good.

T. Rama Lakshmi (2012) has done a case study of the collection development of e-resource collections especially the trends in the growth of digital library in S.V. University, Tirupati, Andhra Pradesh. A brief description is presented on the issues and challenges faced during the digitization process. Similarly S. Dhanavardhan (2012) analyzed the print and electronic resources amongst self-financing engineering colleges in Tamil Nadu. His paper also suggested that there is a direct need for self-financing engineering colleges to exploit the information products and services by laying emphasis to user education programmes.

Methodology

Data for the study were collected through the use of a questionnaire. 250 copies of the questionnaire were distributed among students and faculty members.

There were 200 (80%) responses all of which were found usable. The questionnaire sought for information on frequency of their visit to the library, purpose of the visit, collection of the library, how often they borrow from the library and general observation on the collection of the library.

**Table-1. Collections of library consulted by users**

<table>
<thead>
<tr>
<th>Type of Collection</th>
<th>Students</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.G.</td>
<td>P.G.</td>
</tr>
<tr>
<td></td>
<td>Scholar</td>
<td>Faculty Member</td>
</tr>
<tr>
<td>Text books</td>
<td>90</td>
<td>50</td>
</tr>
<tr>
<td>Reference books</td>
<td>50</td>
<td>80</td>
</tr>
<tr>
<td>Census, Gazetteer</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Annual Statistical</td>
<td>05</td>
<td>105</td>
</tr>
<tr>
<td>Publication &amp; Abstract</td>
<td>01</td>
<td>90</td>
</tr>
<tr>
<td>Newspaper/Magazine</td>
<td>20</td>
<td>90</td>
</tr>
</tbody>
</table>

**Table-2. Distribution of respondents by Major Reason for Using the Library**

<table>
<thead>
<tr>
<th>Reason for Using the Library</th>
<th>Number of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Consult books / Journals for Class assignments</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>To Collect Materials for dissertation and thesis</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>To Prepare for Exam.</td>
<td>70</td>
<td>35</td>
</tr>
<tr>
<td>To Read newspaper / magazines</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Table-3. Frequency of visit to library by users (discipline-wise)

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Student</th>
<th>Faculty Members</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Science</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Humanities</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100</td>
</tr>
</tbody>
</table>

Table-4. Problems Inhibiting the Use of the Library

<table>
<thead>
<tr>
<th>Problems Inhibiting the Use of the Library</th>
<th>Number of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence is too far from the Library</td>
<td>130</td>
<td>65</td>
</tr>
<tr>
<td>Materials are not easy to locate</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>The library does not have relevant materials</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>The library is always too Noisy</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>

Table-5. Level of adequacy of library collection by users

<table>
<thead>
<tr>
<th>Level of adequacy</th>
<th>General books</th>
<th>Reference books</th>
<th>Periodicals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student</td>
<td>Faculty Members</td>
<td>Student</td>
</tr>
<tr>
<td>1. Excellent</td>
<td>50 (33)</td>
<td>20 (40)</td>
<td>10 (6.7)</td>
</tr>
<tr>
<td>2. Adequate</td>
<td>40 (27)</td>
<td>10 (20)</td>
<td>20 (#13.5)</td>
</tr>
<tr>
<td>3. Very adequate</td>
<td>50 (34)</td>
<td>10 (20)</td>
<td>80 (53.6)</td>
</tr>
<tr>
<td>4. Inadequate</td>
<td>05 (03)</td>
<td>05 (10)</td>
<td>20 (13.6)</td>
</tr>
<tr>
<td>5. Poor</td>
<td>05 (03)</td>
<td>05 (10)</td>
<td>20 (13.6)</td>
</tr>
</tbody>
</table>

Value in parentheses shows the percent.

Findings

Analysis of the data showed that all the respondents (100%) were registered with the library through library records indicated that some of these students do not renew their registration at the beginning of session.

It is seen from the table that at maximum students consult text books followed by reference books and periodicals. It seems that less knowledge of users about the library. It is suggested that users should be encouraged about the library by library staff and subject teachers also whereas the faculty members consult annual reports and abstracts. A perusal of the table 2 indicated that at most of the users consult library books and journals for their assignments and exam. preparations. Frequency of visit to library indicated that the students of Humanities and science stream whereas the faculty members of agriculture and science
visit maximum to library for their purpose. Students of Science and Humanities stream visit more to the library probably due to more costly books and further more burden of class assignments, home work and project work with them. Whereas in agriculture stream due to non-fund ing of grant from ICAR and Govt. The collection of books related stream is also lacking in the library. However, the faculty members of agriculture stream visits more because of more number of reference books/journals available in the library (Table 3).

Further it is seen from the Table 4 that maximum users do not visit the library because their residence is far away from the library and also due to non-availability of relevant materials. It is to note that maximum users are off campus as the students hostels could only accommodate very few of them. The distance between campus and the residence where most of users stay far and commercial vehicles do not ply on the road after 6.00 P.M.

The findings of present study show that the collection of reference books and periodicals was found to be very adequate both by the students and faculty members whereas the collection of general books was scored as excellent by user. (Table 5).

Conclusion and Recommendation

The purpose of the study on user’s satisfaction in Kisan P.G. College library is to conclude the reason for dissatisfaction of the users in using the collection and getting service from the library. It was observed during seeking opinion from the faculties and the questionnaires and reasons drawn from the analysis of data.

From the study it is shown that maximum users consult text book while using the library. Among the users out of 150 students mostly undergraduate students making request for the text books, newspaper and magazine. Majority of the students satisfied on their queries whereas some users are not satisfied. Maximum number of users visits the library very often and the faculty of science stream uses library mostly. In this study it was found that at large number of faculty members as well as students using library as dislocation of materials, lack of relevant material and noise also inhibits to use the library. However faculty members and students rated library collection very good and few faculty members said that at the service provided by the library was very good. Similarly maximum students said that at the library collection is excellent while the rest of the students were not agreed from this.

Since the library is facing different kinds of problems like drastic fund cuts, lack of professional staff, lack of support from auth ories etc. All these problems hamper the growth and creates a hurdles in the provision of good collection. In spite of these problems librarian try to his level best and as a result majority of those users are satisfied. The problems in not using the library by the student should be concern of not only the library staff but also the college management. A large number of student said that they are not using the library, because their residence are far off from the library. It is therefore suggested that more hostels should be built to accommodate all students of the colleges and also accommodation should be provided for faculty members within the college campus, so that research work should not be hampered. The maximum number of students using the library only for the class-assignments. This is not good sign for the library. Therefore it is recommended that college should have sound book acquisition policy and provide user education that at users should feel comfortable to be in the library always. It is also recommended that in the
comput er age where users are more comput er friendly. Librar y must be aut omated and fund s should be made available for this.

References

Web Based Library Services Through Library Website: A Case Study of Degloor College Library Website

Santhosh Kadam

Abstract

Information Technology has become an integral part of all aspects of the library. Well and proper implementation of IT in library results into better resource sharing and more effective services to the users. With the increasing impact of Information Technology it is supposed that library should adopt new technology to provide traditional library services by new ways. The concept of web based library services is emerged and now-a-day’s libraries are providing their services out of the four walls of the library building. Library website is one of the most powerful and important tool for providing the various kinds of web-based library services. NAAC in his set of best practices also suggest that library should have a separate library webpage. Considering the importance of library webpage to provide the web based library services, the Degloor College library has designed and developed a separate webpage for the library users which is now-a-day’s proving the most popular tool for the modern library services. The library has used open source content management system Drupal 7.22 to develop the library website. Now users are interacting with library staff and receiving library services in more smart and easy way. The library also planned to host a web OPAC and to provide a link to the institutional repository. Also the future plan includes the development of web based tutorials for Information Literacy and more links to the research.

Introduction

With the increasing impact of ICT on the library and with the changing technological environment, libraries are adopting modern techniques to provide fast and better services to its users in more effective way. In order to cope with the changing technological environment libraries are providing web based library services to its users. Library website is one of the most powerful tool to provide web based library services. These kind of services fullfill the fourth principle i.e. “Save the time of library staff and library users”

Need for the Web based library services

• To provide up to date information to the library users on one click.
Increasing impact of ICT on library services.
To save the time of the library users.
To create a single platform for the online services.

Design and Development of Degloor College Library Website

The Degloor College library website is designed and developed using an open source content management system. The website is developed in Drupal 7.22. The URL of the website is www.degloorcollegelibrary.in

Outline of the Degloor College Library Website

The website contains:
A. Top Menu
B. Menu; and
C. User Corner

A. Top Menu:

i. Virtual Tour: In this link photographs of the various departments of the library are provided so that users may get an idea about the library sections.
ii. E-Resources: In this menu links to the various open source e-Resources is given.
iii. E-Research Desk: In this menu links to the Shodhganga and Vidyanidhi database
is provided.
iv. **Library Staff:** In this menu information regarding library staff is given.

v. **Research Center:** In this menu detail information about the Research Center of the Public Administration is provided.

**B. Menu:**

i. **Know your library:** In this link information of the library is given in local language i.e. Marathi.

ii. **Library Rules:** Here users get information regarding library rules.

iii. **Library Collection:** Users may get the information of the library collection and the list of subscribed print journals. Also the Collection Development activities of the last ten years is presented in graphical form.

iv. **New Arrivals:** Through this menu user may get information regarding newly added library collection through this link.

v. **Notice Board:** Through this menu user may get information regarding new instructions of library and college administration through this link.

vi. **Book Circulation Table:** Through this menu users get information regarding book circulation time table.

**C. User Corner:**

i. **Apply for membership:** New users can get membership of the library through Apply for membership link.

ii. **Advance Demand Form:** Users can demand the required book and reading material before their circulation day through Advance Demand Form.

iii. **Request A Book/Journal:** Users can apply online for New Book or Journal through Request a book/journal link.

iv. **Online Complain:** Users can register their complaints online through Online Complain menu.

v. **Online Feedback:** Library feedback is taken online through Online feedback menu.

**Use of Social Media**

As the Face book is widely used by the students, the library has developed its face book page and the link to this page is given on library website. Students may get the information of library activities, new arrivals and job alerts through the face book page.
Best Practices in Academic Libraries

SAN TOSH S. THAKARE

Abstract

Library and information services of higher education institutions play a central role in enhancing the quality of academic and research environment. The paper throws light with the introduction to the role of academic libraries. The article on the current challenges faced by the academic libraries. The process that are discussed and concludes that with the adoption of the best practices in academic libraries there will be a continuous improvement and overall performance in the institutions. In this paper highlights in the best practices.

Keywords


Introduction

The global changes particularly the information and communication technologies (ICT) have impact on the functioning of academic libraries. The developments in ICT have changed the user’s expectation from the academic libraries in different ways. The ways to build collection and services to the end users vary from the recent past practices. To meet the end users demands effectively the academic libraries need to identify and adopt good practices and benchmarks. Thus preparing guidelines in a standardized way based on the best practices employed by libraries is significant which will ultimately enhance the value based services of academic libraries.

“A practice qualifies to be a best practice status if it is resulted in high value impact on any aspect of educational activity in an institution.” A best practice is a value added standard practice; however, best practices may depend on viewer’s perspective, time and context. A best practice may be innovative and context. A best practice may be innovative and be a philosophy, policy, strategy, and program, process or practice that solves a problem or create new opportunities and positively impacts on organizations.

The areas where best practices can be adopted and information environment are:

(1) Collection development and assessment.
(2) Usage of library services.
(3) Automation and use of technology.
Definition of Best Practices

ODLIS (Online Dictionary of Library and Information Science) “In the application of theory to real-life situations, procedures that, when properly applied consistently yield superior results and are therefore used as reference points in evaluation of the effectiveness of alternative methods of accomplishing the same task. Best practices are identified by examining empirical evidence of success.”

The Role of Academic Libraries

The role of the library and information centre in a college is aimed at realizing the educational goals of the college or the parent organization. The college libraries not only provide stimulus to reading by procuring materials for study and research, by introducing open access system, by providing long hours of open, by organizing the library resources in a systematic way, but also feeds the intellect of student, encourage the researches of the faculty and thus serve the teaching and research needs of the faculty. The college library and information resource center acts as a vehicle for disseminating information and the related computer technologies through the best practices for utilization by its community of users and also for the exchange of information among its users.

Best Practices adopted in Academic libraries

1. Orientation Programme: One of the best practices is to create awareness among the students about the library resources, library services, good reading habits, creative programs and activities for maximum utilization of the library. In other words enlighten the fresh students at the beginning of each academic year about the importance of the library, thereby exposing the students to its various sections of the library resources and the various library services.

2. Book Display Programme: Libraries should organize exhibitions on important occasions like birth anniversaries of eminent personalities. This helps users to know various types of collection available on various subjects in the library.

3. Staff Users Meet: The academic libraries should organize various programmes including orientation, lectures on related issues, and topics, workshops, seminars, which focuses the issues useful to the users as well as to the staff. e.g. lectures on open access resources, library consortium, present digital era, knowledge networking, subject searching, knowledge based systems etc. can be arranged.

4. Demonstration & Exhibitions: The libraries should organize demonstrations and exhibitions to create awareness about their collection, services. This can be done inside the library separately through displaying the special collection and literary works of specific authors or group of authors. Thereby creating of literary awareness among its users.

5. Web Based Services: The library website updated with web based services such as virtual tour, virtual reference desk, asks the librarian, full text article, access to open as well as subscribed e-resources, lectures notes etc.

6. Library Best User Award: Library usage data can be gathered through visitor’s register maintained in the library. User data is compiled through circulation of
librarian items. Based on the above data and the observations of the librarian, librarian can give best user award to the student as well as teacher who made maximum use of the librarian. This will help to increase the frequency of visit of users to the librarian and will increase the use of librarian reference materials.

7. **Celebrate on Library Day**: Librarian day can be celebrated on the birth anniversary of Dr. S. R. Ranganathan and/or Melvil Dewey. This will create more affinity amongst users towards libraries.

8. **My favourite book**: Competitions on my favourite book can be organized. This will inspire students to read more books and will help to know about new books.

9. **Book Bank Facilities**: Book bank facility to economically backward students can be provided. In this facility, a set of textbooks can be issued for a period of a term/semester. This will also increase the use of library resources.

10. **User Feedback Practice through Suggesti on boxes**: Librarian can receive feedbacks/grievances from students about the services and collection of the librarian. This will help libraries to improve their services.

**Conclusion**

The best practice is the attitude, an approach or a philosophy based on the desire for continuous learning and improvement. To improve the quality of its services in changing environment, libraries should adopt the best practices. Thus libraries should find out innovative practices to increase the use of its resources.

**References**

Best Practices Followed in Academic Libraries:
With Special Reference to KGKC, Karjat College Library

_SATGURU NATH D. GAIKWAD_

Abstract

The present paper describes the best practices as expected by NAAC and its applications in an academic library. This paper particularly highlights the best practices of the Konkan Gyanpeeth Karjat College of Arts, Science and Commerce at Ladivali, Post-Tiwre, Tal-Karjat, Raigad. Our college library is established since the opening of the college i.e. in the year 1989. From the opening day the college has tried to develop the library. As our college is situated in rural and tribal area, there were several problems in the developing process. But the college has gradually developed each and every department of the college. Quality improvement without best practices and accreditation cannot be possible in today's academics colleges. At present there are many Best Practices followed in Academic Libraries to improve the quality of services and professionalism. In conclusion the paper strongly opines that “the Best Practices” should not only fulfill the need of information of the students but also include the services and activities in which the aim of overall development of the students is achieved.

Keywords


Introduction

The institution, Konkan Gyanpeeth Karjat College of Arts, Science and Commerce is a well-known educational trust of Karjat, Raigad, founded by eminent and most dynamic social leader Late. Appashab Dharkar in the year 1989. In the span of 25 years the Trust has launched several educational activities under the excellent guidance. The college library has collection of 9983 books, 43 periodicals/journals which are related to the courses taught in the college. It has good number of reference books, Dictionaries, encyclopedia, directories, and handbooks.

The college library is a connecting link between teaching and learning as well as place which supplements its resources what is beyond scope of class room. College libraries play
an important role in the educational history of both the students as well as the faculty members. It serves the user by providing specific information to the user. In our college, we have introduced and implemented the guidelines of NAAC, numerous innovative practices to benefit the students and create an awareness to know about our collections, e-resources and customized services. The National Accreditation and Assessment Council (NAAC) strive for quality and excellence in higher education and advocates for enhancing the role of Library and Information Services in improving academic environment. Though, it is institutional accreditation that at the NAAC does, the assessment of a library, a vital sub-unit, is a key step that integrates itself with the overall evaluation. Library is the full of support for the entire range of academic activities on an educational campus. In today’s high-tech, learning environment, the library as a learning resource is taking up increasingly more academic space and time in the life of a learner. In times ahead, this will be even more so. Thus, NAAC has decided to identify the set of best practices in Library and Information Services, with the help of a few case presentations from few selected libraries of the accredited universities and colleges.

Definition of Best Practices

According to the Concise Oxford English Dictionary “best” means the most excellent or desirable type or quality, most appropriate, advantageous, or well advised or the highest degree to highest standard.

Oxford Advanced Learners Dictionary describes “best practices as quality of high standard, excellence, highly improved, outstanding, par excellence service. It means way of doing something that is usual of expected way in a particular organization or situation, guidelines for good practices. In this process of developing best practices we take action rather than good ideas, and we improve our skills. ODLIS (Online Dictionary of Library and Information Science) describes best practices as: “In the application of theory to real life situations, procedures that, when properly applied consistently yield superior results and are therefore used as reference points in evaluation of the effectiveness of alternative methods of accomplishing the same task. Best practices are identified by examining empirical evidence of success”

“NAAC” has identified following four broad areas in academic libraries where best practices could be followed.

1. Management and Administration of Library
2. Collection and services.
3. Extent of Use Services.
4. Use of Technology.

Management and Administration of Library

Observation of other library practices by institutional visits: Visit to surrounding libraries and collect the best services for the different libraries.

In service programmes: Arrange the District Level Workshop for Library attendant and clerk for latest development.

Staff promotional practices: We depute the library staff to participate in the workshops
and conferences.

Resource gene ratio through external membership and dues collection: We give the library facilities for external users with the fees of 1000/- for yearly basis as well as we collects the dues from students.

Earn while learn program: We make the farmers of vegetables near the library and give the training for needy students how to grow the vegetables and fruits.

Library science students as a trainee: Ex-students of our college they did the BLISc/MLISc we give practical training of library services.

Collection and Services

Compact storage of less used collection: Make bundles and kept away from daily circulation.

Collection development in different formats: All types of collection is acquired by library Books, Maps, Globos, CDs, DVDs etc.

Library books exhibit on special occasion: The books exhibition on the special occasion like the Gandhi Jayanti and Dr. B. R. Ambedkar Jayanti.

Information on display and notification: List of Merit/Golden card, Notice for Book bank and other are displayed on notice board, Books reservation stud ents list etc.

Golden facility for Merit List Students: The Golden facility card is issued to those students who get Merit list in their Academic Year. The benefit of the card is to borrow the one extra book from the library. Golden facility card stud ents has not any days to borrow the book from the library and Dues also not collected from such students.

Books Lucky draw for Competition: We make the Competition Examination Student Circle, we collect Rs. 100 from 12 stud ents for each month and make the lucky draw and give them Competition Examination books bunch.

Special Service to Girl Students: Two extra books issue for home reading to girls students.

Extent of Use Services

Bibliographic compilation: We distribute the each department of latest books purchased list each year.

ILL/Resource Sharing: The best service are given from Library to all users about the ILL Inter Library Loan Service is operating from the parent al institutions like Engineering college and Pharmacy college library. 5 books are borrowed from those libraries and given to our college users to read and gets benefit about these books which we don’t have in our library.

Reprographic facilities: Provided in our college campus.

Book bank: Our college library has been participating in Book Bank Scheme for Backward Class stud ents run by The Director, Stud ents Welfare University of Mumbai since 2001 -2002. Funds are received from University of Mumbai and as per guidelines of university we have purchased text books, reference books, Remedial Classes and furniture. We get grants from University of Mumbai regularly.
Objectives of Book Bank Scheme Facility

- To provide text books to students belonging to backward classes such as SC, ST and NT category students.
- To provide books for the full academic year to the students as per availability of no. of books.
- To support the students to increase their reading habits.

Methodology of Book Bank Scheme Facility

- The notice of book bank scheme is displayed on the notice board as soon as the college opens in every year in June month.
- The applications are invited from the needy students. Application forms are made available in library.
- The applications are scrutinized.
- The books are provided to the students for the academic year according to the availability of the no. of books.
- The books are collected back from the concerned students as soon as the final exams are over in the month of March/April/May of every year.
- All records of this scheme are kept separately.
- No fees are charged from the students for these services.
- The students are also provided books on their library borrower regularly for seven days.

Benefits of Book Bank Facility

The library is enriched by the Book Bank Scheme. So, we are very grateful acknowledged to University of Mumbai, Mumbai.

- The needy and clever students get a set of books for the whole academic year.
- A large number of students from rural and tribal areas take benefits of this scheme from starting of the scheme every year.
- A large number of students are benefited by and are being benefited by this scheme.
- The circulation load on the library staff is relieved by this scheme.
- If some difficulty occurred in and subject the remedial classes are also arranged in college campus.

Required Resources/Infrastructure of Book Bank Facility

- Grants from University of Mumbai, Mumbai regularly.
- Grants should be increased every year because the cost of books are increased.
- Increased in the number of text and reference books in the library.
- Cupboards for books shelving in the separate section in the library.
- Healthy and cordial relationship between the students and the library.

User orientation: This program will help users how to use library, its collection, and services. This can be arranged by librarian or supportive staff of the library.
Current content of Periodicals/Journals: We make the Xerox copies of content page and make the spiral binding and kept in the reading rooms for the Current content of Periodicals/Journals.

Bound volumes of Journals/Periodicals: Journals/periodicals make the bound and kept in library for further use.

News paper Clipping Services: We take the news cuttings of related the college news and NSS news.

Use of Technology

Computers: We use SOUL Software for our college library. One main server 4 client PCs, Barcode reader, printer, scanner etc. all most all ICT applications available in our college library.

OPAC/Web OPAC: OPAC/Web OPAC available in library and other department are also connected through LAN.

Goal of the Practice: Web OPAC

To make the library retrieval tool OPAC on the Web for wider access.

The Process: Library collection availability and its status are very important for the users. The card Catalogue is converted into machine-readable format to make it available for access over the Internet.

Impact of the Practice: Users are benefited at large scale by using this service at their own departments and they also can reserve the materials that are not available for future use.

Resources required: Library database compatible with Web OPAC, Internet connectivity, Automated Library transactions using barcode etc.

Audio-visual resources: 283 CDs and DVDs are available in library.

Internet: Broad band connection is available in the library.

Barcode, Scanner, Barcode reader: It is used for books issue and return and scanner is used for digitization the materials.

Campus-wide local area network (LAN): LAN is available in college of data transfer and opac/webopac.

Access to Digital Quest ion papers repository through college website: On our college website the back question papers are available in pdf. form.

Membership of library networks (INFLIBNET/N-LIST) and Consortia: We subscribe the N-LIST to get the journals periodicals.

Service

The library has a key role in supporting the academic activities of the institutions by establishing, maintaining, and promoting the library and information services, both quantitatively and qualitatively. The library offers a wide range of services from reference to electronic information services. University and autonomous college libraries may answer the following basic questions while ensuring the appropriate services.
Best practices for university/college Libraries

In the library context, the ‘best practice’ may be viewed as one that enhances user satisfaction contributing to full realization of one’s academic potential. Listed below is a suggestive set of best practices.

- Library Brochure/Diaries/Information Packs.
- Compiling and displaying of student/teacher attendance statistics (graphic) on the notice boards of the library as well as in the departments.
- Communication of current awareness to different user groups.
- Information literacy programmes
- Beginning of the academic year with a general presentation
- Periodically for need-based groups
- Teaching library programmes
- Creation of digital Repositories
- Article Repositories
- Publication Repositories
- Question paper Repositories
- Courseware Repositories
- Displaying new arrivals of books/journals and circulating a list to different departments that use the library.
- Suggestion box and timely response.
- Computerization of library with standard digital software.
- Inclusion of sufficient information about the library in the college prospectus.
- Displaying newspaper clippings on the notice board periodically.
- Career/Employment Information/Services.
- Internet Facilities to different user groups.
- Information literacy programmes.
- Displaying new arrivals and circulating a list to academic departments.
- Conducting book exhibitions on different occasions.
- Organizing book talks.
- Instituting Annual Best User award for students.
- Organizing competitions annually.
- Conducting user surveys periodically.

Conclusion

Best practices of KGKC, Karjat College Library are very useful in providing support to students, staff, and other external readers. There is no other big library in Karjat or nearby Karjat. In this paper as per NAAC guidelines best practices are given in accordance with NAAC standards, libraries should establish, promote, maintain, and evaluate a range of quality services that support the college, mission, and goals. Lastly, developing best practices and implementing them at regular intervals will lead to improve overall functions of libraries and ultimately whole institution.
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Challenges and Opportunities of ‘Internet of Things’ (IoT) Technology in Library Management

Satish Kumar; Anil Kumar Mishra

Abstract

The Internet of Things (IoT) is a vision of connectivity for anything, at anytime and anywhere, which may have a dramatic impact on our daily lives similar to the Internet done in past 10-20 years. It is recognized as an extension of today’s Internet to the real world of physical objects, which is often associated with such terms as “ambient intelligent,” “ubiquitous network,” and “cyber physical system.” Its development depends on dynamic technical innovation in a number of important fields, ranging from fundamental microelectronic devices, sensor technologies to information and communication technologies (ICT).

The Internet of Things has been called by many names. The idea is that objects can be connected through the internet in new ways. This happens when a combination of web-enabled devices (computers, phones, handhelds) and technology that can communicate with those devices (sensors, RFID, 2D and 3D barcodes) allows information to be attached to an object. The information can stand on its own and be read by a device or it can trigger an action such as bringing up a web page, playing a video, reminding pick up book, or giving a message to customer.

This paper analyzes the key technology and working principle of IoT, its development in India and abroad, its application in the library development and management. The primary intent of this paper is to provide libraries an overview of IoT features and capabilities that can be used to develop online complex library solutions.

Keywords

Library Management, RFID Technology, Internet of Things (IOT), Electronic Tag, Sensor.

Introduction

The Internet of Things (IoT) is a web of objects with unique identifiers that can communicate with each other with or without the aid of a computer or internet. The communication is enabled through the sensors installed in the participating devices. Several technologies
like wireless technologies, micro-electro mechanical systems (MEMS) and the internet have contributed to the emergence of the IoT (Iyer, Ramakrishnan and Mishra, Radharaman, 2014). Internet of Things (IoT) is a fast growing, user friendly technology which allows everything to be connected together and also allows effective communication between the connected ‘Things’. These ‘Things’ can include any object ranging from a small pen to a big car.

Currently, the applications of information technology have a great impact on all aspects of people’s social life. The field of library also faces new challenges and opportunities for development. Especially in recent years, the Internet of Things rise quietly, which will absolutely bring about the next information technology revolution, just as the Internet was. Some experts assert that: once a micro sense is embedded in whatever objects such as watches, keys, trains, automobiles, buildings, the object can “talk” automatically. With wireless network technology, people can “talk” directly with objects, and objects can “communicate” with each other at any time.

This technology has expanded to such an extent that even living organisms are considered as the part of Internet of things. In IoT, intelligent devices such as Passive RFID Tag, Smart Dust etc., are connected together in a large network with unique accessibility. IoT exchanges data in a fraction of second and also it consumes less power. It makes the human life more comfortable and it helps to build a smarter world.

What Is Internet of Things (IoT)

Internet of things (IoT), known as the Internet of objects, refers to the networked interconnection of every object, which is composed of all kinds of information sensing devices, such as Radio Frequency Identification (RFID) devices, infrared sensors, global positioning systems, laser scanners and various other devices. When embedded with chips
and sensors, these objects can “think”, “feel”, and “talk” with each other. Together with the infrastructure of the Internet and mobile networks, these objects can communicate with humans, and enable us to monitor and control them anytime anywhere and enjoy their intelligent service, making the idea of a “Smart Planet” a dream come true. It is described as a self-configuring wireless network of sensors whose purpose would be to interconnect all things.

Evolution of Internet of Things (IoT)

Before 1990’s communication happened between computers which were called as Electronic Data Transfer. These computers were a network and it was further classified as Local Area Network (LAN), Metropolitan Area Network (MAN) and Wide Area Network (WAN). This WAN was called as Internet where several computers around the world were able to communicate with each other. Subsequently further improvements in networks allowed external peripheral devices to be connected to internet. In present we are giving instruction to devices instead IoT will make the devices to think and act according to our needs (Sarwesh, P., Shet, N.S.V. and Chandrasekara N., K., 2014).

The concept of interconnecting all things is attributed to the former Auto-ID Center, founded in 1999, based at that time at the Massachusetts Institute of Technology (MIT). Its original definition is very simple: *connects all kinds of objects through radio frequency identification and other sensor equipment to the Internet, to achieve intelligent identification and management*. In 2005, in *Tunis World Summit* on the Information Society (WSIS), the International Telecommunication Union (ITU) for the first time proposed the “Internet of Things”.

Working Principle and Key Technologies of Internet of Things (IoT)

“Internet of things” is based on network technology, in which RFID tag technology is the key technology. RFID system generally consists of the following two components: electronic tags and readers. Electronic tags can be attached to objects to be identified while readers can read or read/write, which depends on the memory structure and technology. Main modules are integrated into a single chip, complete communication with readers. With embedded EEPROM, chip can store the identification codes or other data. EEPROM capacity changes from a few bits to tens of thousands of bits. Just connecting the external antenna (and batteries), the chip can serve as a personal identification card or identification card of goods (G. Shen and X. Huang, 2011).

**Working Method of RFID tag:** In most RFID systems, the reader sends out electromagnetic waves within a region (which depends on the operating frequency and antenna size), while electronic tags have a LC series resonant circuit and its frequency is same with the transmitting frequency of the reader. When the electronic tag passes through the region, with the excitation of electromagnetic waves, LC resonant circuit resonates, so that the capacitor has been charged. On the other end of the capacitor, there is a single-direction electronic pump, which transmits this capacitor charge to another capacitor. When the accumulated charge reaches a certain value, this capacitor can be used as power supply voltage provided to other circuits, so electronic tag data can be transmitted or accept the reader data. When reader receives the RFID data, decoding and error checking are carried...
out to determine the validity of data, then, to transfer data wirelessly to a computer network.

The basic working principle of RFID technology is not complicated. When the tag enters the magnetic field, it begins to accept the RF signal emitted from readers, and send out the document information stored in the chip by the energy obtained from induced current. Reader reads the information and decodes, then sent to the relevant central data processing information systems.

**Advantage of Electronic tags:** Electronic tags have many advantages, such as non-contact, long working distance, being suitable for harsh environments, identifying moving targets, etc.

**Application of Internet of Things (IoT)**

Presently, nearly 100 organizations in more than 10 countries like Singapore, Australia, India, Netherlands and Malaysia have been using RFID technology in the library automated management system. **Singapore National Library (SNL)** is the first to implement the “Radio Frequency Identification” (RFID) system in the world. The library has a RFID tag on each book. In SNL, to borrow and return books are self-service system is followed.

In a Smart Library, for borrowing books, you only have to insert the ID card or library card into the reader, and then put the books you want to borrow on the scanner to scan. Returning a book in Smart Library is even simpler, just drop the book into the RFID embedded collector machine. Equipment will send the book automatically to the stack room. Similarly, with scanning device, staff can quickly know the type and location of the book to be sorted. Because each book has a label at the back cover, metal coil affixed to the label has stored basic information about the book, the scanner will send a weak radio wave coil, then the coil will give feedback to the scanner. In this way, information can be exchanged and identified instantly (G. Shen and X. Huang, 2011).
In China, a new library officially opened in July 2006 in Shenzhen is China’s largest RFID project and the first to use full RFID equipment. The application of RFID technology in Shenzhen Library involves three aspects:

- The introduction of RFID technology and equipment;
- Innovative application in library operations, such as digital library systems interfaces, compatibility and extending application;
- Independent and innovative development of shelf labeling and document navigation, which have been already put into application.

These applications and innovations can resolve the common problems in the library development and operations, showing a broad prospect for the popularity of RFID applications in libraries.

In many places people have started implementing the smart things/devices in real-time applications such as RFID tracking, smart dust implementation in battlefield, smart health care system, smart irrigation system for agriculture and smart grid for power consumption management, wildlife monitoring by multimedia sensor networks and some sensors implemented under the ground, sea, forest and bank of rivers to prevent the world from natural disasters like tsunami, earthquake, forest fire, flood etc.

Advantages of IoT in the Library Management

Library management is an important aspect of IoT technology. Although most libraries have adopted bar code recognition, computer networks, computer software and other modern management and technology, there are still many problems for the library staff. For example, self-service borrowing and returning books, quick inventory, organize books disordered and other issues are still not well resolved, hindering the library to further improve its management and service level. The above problems can be solved by applying the IoT technology in library management (Ning, H. and Zhang, Y., 2008).

1. Self-help borrowing / returning books. By using self-service subsystem of RFID technology, people no longer need to open the title page and scan the butt on bar of each book, can borrow / return more books, complete the process automatically, simplifying borrowing / returning procedure, will greatly improve working efficiency. Because RFID self-service machine can work 24 hours with no staff, this technology will greatly enhance the library services and book circulation efficiency.

2. The formation of the reader circle. Books, shelves and borrowing information can be stored in the electronic tag, which will integrate RFID technology into existing central library systems. Tag cannot be easily damaged and has dirt resistance, will not affect the efficiency of borrowing and returning books. Also, according to the storage capacity of electronic tags, electronic tags can also store other information, such as previous borrower information, review of books, and other similar books to help readers access the book and can set up a book “Readers Circle”, for more reference information.

3. Quick Book Search. There are mobile search and fixed search. Mobile search is to input the search information of multiple books into the handheld RFID terminal to find the related information. Fixed search is to search for books by RFID readers, the
comput er and wireless LAN connections. With the use of RFID wireless location techn ology, you can quickly find the specific location of books in the librar y, thu s avoiding “wrong frame” — books can be retrieved, but cannot be found.

4. To com plete long-distance, rapid, bulk and accurate inventory of books. At the same time, Io T can improve inventory efficiency, reduce the workload caused by the handling books, achieve graphical user interface management, data download, pre-alarm function, fully showing the great adv antages of the RFID techn ology.

5. To check boo k theft. Book theft can be checked aut omatically with the help of detecting software installed on the comput er. Its hardware includes RFID circuits, sound and light alarm, and security door type antenn a. It can have functions as long-distance recognition (generally up to 2 meters), quick recognition, sound and light alarm, zero false report.

6. The use of RFID techn ology enables activation of second -gene rati on ID card as
library card to use library services at any time, without worrying about whether they carry reader cards or not and is more convenient, safer, more reliable and easier to manage.

Key IT Challenges with Internet of Things Implementation in Library

IoT based library applications have some important characteristics:

- Very high event data rates – high number of transactions per day in a library
- Huge volume of continuous data – huge collection of library
- Need for continuous monitoring
- Minimal latency
- High level of complexity in finding meaning in the data
- Immediate response in case of an alert situation.

IoT applications and traditional applications in library (e.g. native web based applications) are significantly different in many ways. Technological and architectural implications of these differences are profound. It will bring big opportunities and even bigger challenges such as:

- Processing large number of documents procured at a high speed need a matching infrastructure.
- Since the number of connected devices might increase drastically, the architecture need to be scalable.
- Library applications has to have integration capabilities with different types of devices and systems.
- Considering the high volume of data, need to ensure the data quality.
- High network bandwidth in library is required to read all the raw data generated by millions of connected devices.
- No uniform standards for data generated from devices which may result in data silos and can prevent widespread adoption.
- There could be potential security implications since the connected devices can be vulnerable to hacking and hence need a secure identity management and authentication to be implemented.
- Defining the data retention, archival and purging could be a challenging task for the massive amount of data that get generated from devices (Iyer, Ramakrishnan and Mishra, Radharaman, 2014).

Opportunities for Addressing Technical Challenges of the Internet of Things

(a) To address the challenges of the IoT architectures:

✓ View the things as a service is a big challenge due to performance and cost limitations.
✓ Automated things composition for the IoT applications.
✓ Domain control for the IoT applications.
✓ Cross-domain interoperability and cooperation.
To address the challenges of the network technologies:

✓ The IoT integration of heterogeneous networks, and system seamless wired or wireless access to various types of networks to cater to various users’ communication requirement.
✓ Device automatic selection of local networks, and adaptation to local communication environments.
✓ Multiple virtual addresses allocating to devices or objects in the physical world in things to things communication for identification and localization.
✓ Optimization of devices management, including mobility, network types, communication priority, network handover, and improving the quality and efficiency of the wireless communication system.

e) To address the challenges of the discovery and search engine technologies:

✓ A description language to describe the Things in the IoT. The language must be standardized, scalable, and flexible to vary kinds of things in different implement environments, such as tags, sensors, back-end servers.
✓ P2P based discovery and search engine mechanisms and algorithms that take into consideration the issues of sensors (tags) roaming, real-time requirement, privacy protection, massive data.
✓ Cross-domain interoperability and different semantics and laws of governance.

To address the challenges of the security and privacy technologies:

✓ Light weight ciphers and protocols for sensors (including tags) authentication. In these ciphers and protocols, the performance, energy and cost will be tough in designing, manufacturing and deploying.
✓ Aperture, efficient, scalable and robust security service based on cloud computing to support the IoT application. The service should provide the key management, cipherers and protocols evaluation, identity management, and audit.
✓ Trade of performance, energy and cost with the developing of the IoT technologies and application requirement.
✓ Privacy preservation and anonymity mechanism.
✓ The behaviour specification of active sensors (including tags).
✓ Domain- and event-based policy-driven security management.
✓ Quantify the security level for the application, and provide customized security features.
✓ Standardization.

e) To address the challenges of the applications:

✓ Discover of killer applications.
✓ Integration with the current IT systems. (Butt ers, A., 2008).

Development of IoT in India

Internet of Things is of strategically significance, India has by now ranked ahead of the world in ICT development. No matter in terms of policies, technologies or the industrial chain, India’s development of the Internet of Things is provided with an outstanding advantage and has hard-won development opportunities.

The research and development of the network has been booming in India since the last decade after the government decided to promote the promising industry, along with
industries such as new energy, new materials and information networks. Now with this new Government, the Internet of Things enjoys a prosperous development. India is speeding up on development of “Internet of Things”, making it a new engine for economic growth and an opportunity to catch up with the developed countries; it will lead the development of global economic growth and become the chasing hot of various capitals.

Internet of things will bring thousands of billion of chain size for India, its application will cover dozens of industries, such as logistics, transportation, agriculture, manufacture, healthcare, security, smart home, tourism, military, and etc. In next five years, the technologies will be commonly used in smart grid, smart home, digital city, smart healthcare and vehicle sensors etc. (Srinivasan, S. and Vanitha amani, R., 2013).

Conclusion

In the world of urbanization, time and efficiency are matter of priority. RFID (Radio Frequency Identification) is emerging technology which improve standard of living. Library is the key place of knowledge. The requirements of books and creations or publishing are increased every day. The volumes of library books increased as per need but the management is big issue nowadays. In some libraries RFID is used for automation but it is not implemented with alert system. “Internet of Things” is a number of technologies and research disciplines that at enable the Inter net to reach out into the real world of physical objects. Technologies like RFID short-range wireless communications, real-time localization and sensor networks are now becoming increasingly common, bringing the Inter net of Things into library use. They foreshadow an exciting future that at closely interlinks the physical world and cyberspace—a development that at is not only relevant to researchers and librarians, but to corporations and individuals alike.

The Io T is developing very quickly, and we introduce the technical view to the IoT which includes the architecture models, network and communication technologies, discovery and search engine technologies, security and privacy technologies, applications and technical challenges. With the support of governments and companies in the world, the technologies of the Io T are developing faster than in the past. However these technical challenges also call the researchers, developers and officers to contribute to these ongoing efforts to resolve them.

References


Information Communication Technology and Public Library in India

Satyadev

Abstract

A public library is a people university. Public libraries are social institutions offering information dissemination services based upon knowledge for vivid public group on social, political, economic. At present in India 19 states have passed the library legislation for smoothly running the libraries. The librarians in public libraries have to apply the tools and techniques of Information Communication Technology (ICT) to meet the changing requirements of the users by innovating its procedures and systems.

Definition of Public Library

A public library is for all without the distinction of caste, creed, class or locality. This implies the establishment of various kinds of public libraries at various levels of localities. These include urban as well as rural libraries.

The public library should serve as a local information centre making the sources of knowledge readily available to the public. Public libraries should stimulate neo-literates, semi-literates, non-users to become readers, and serve the population with knowledge and information.

Public Libraries in India

Public libraries in India are established throughout the country and are located in state capital, district headquarters and talukas as well as village levels. There is one state central Library in every state and then district libraries in each district and taluka/village libraries in many villages, resulting in a three tier structure. Public libraries are mainly supported by central and state governments and are generally under their care of the development of the public libraries in any state is the responsibility of the respective state government. Issac, presently, in India out of 29 states and 7 union territories, only 19 states have library legislation so far.

Meaning of Public Library

The UNESCO Public Library Manifesto defines the public library as the real gateway of
knowledge provides a basic condition for lifelong learning independent decision making and cultural development of the individual and social groups. According to U NESCO Manifesto for public Library mission of Public libraries services are.

- Creating and strengthening reading habit in children from an early age.
- Supporting both individual and self-conducted education as well as formal education.
- Providing opportunities for personal creative development.
- Stimulating the imagination and creativity of young people and children.
- Providing awareness of cultural heritage, appreciation of acts, scientific achievements and innovation.
- Providing access to cultural expressions of all performing arts.
- Inter-cultural dialogue and favouring cultural diversity.
- Supporting the oral tradition.
- Ensuring access for citizens to all sorts of community information.
- Providing adequate information services to local associations and interest groups.
- Facilitating the development of information and computer literacy skills.
- Supporting and participating in literacy activities and adult education programmes for all age groups and such activities if necessary.

Public Libraries in Current Scenario

Public library system in India has developed over the years for more than a century initially under the patronage of the aristocracy. The first three decades of the 20th century can be looked on as the golden age of the Indian Library system. The establishment of the Delhi Public Library, the involvement of Union Government in the public library movement and the enactment of public library legislation in some states are the main factors which contributed to the improvement of public libraries after independence. Though library legislation is almost a pre-requisite, only 11 out of 29 States and 6 Union Territory Administrations have so far passed library legislation. The Uttarakhand State Cabinet has also recently decided to enact the Uttarakhand Libraries Act to regulate grants to public libraries in the state. The absence of a uniform public library system in most states and union territories is an important factor for the haphazard growth of libraries in rural areas. Rural public library sector remains an area that is highly underdeveloped. Due to the diversity in the level of state-wise development, the Department of Culture, Government of India has set up Raja Ram Mohan Roy Library Foundation (RRRLF) to act as a nodal agency for development of public libraries in India. The RRRLF has also been given the responsibility of resource mobilization for modernization of the state and district central libraries, the development of infrastructure and training of personnel. The government is seriously considering to bring about conceptual change in the rural library sector by coordinating its activities along with the continuing education schemes of the National Literacy Mission (NLM). Philanthropic initiatives and joint efforts take by some enlightened people in cities as well rural areas are emerging out as a ray of hope for the deprived masses that at other wise would be at the mercy of government-aided libraries for their intellectual growth and spiritual awakening.
Crucial Challenges for Indian Public Libraries

India is the world’s second most populous democratic country. The country still remains predominantly rural India with huge economic disparities and diversities.

Initiatives for the Development of Public Libraries Services in India

Former President of India, A.P.J. Abul Kalam has coined a new term PURA (Providing Urban Amenities in Rural Areas) that describes coherent knowledge and resources distribution across the country. The PURA will deliver three types of connectivity physical connectivity by establishing more professional institutions and vocational training centres. Schools with best infrastructure and teacher who love teaching, primary health centres, silos for storage of products and marks for promoting cottage industries and business employment opportunities for artisans are some of the elements of PURA. PURA will also help in poverty removal. He has also envisaged establishing Village Knowledge Centres across India. To implement visions of President of India and other countries, temporary social reforms, government of India and other agencies have taken up a number of programs and initiatives across the country. Some initiatives are based on successful partnership between private bodies (like, corporates and NGOs) and public bodies (like, village Panchayats), this may be known as private-public (PP) partnership e.g. eChoupal, TARAHAAT. Some initiatives provide Government to Citizens (G2C) interface to ensure better transparency in governance e.g. Bhoomi, Gyandoot, Community Information Centres, etc. These community information centres provide various kinds of community information required by common citizens, e.g. education, health, nutrition, sanitation, agriculture, wholesale prices of agricultural products, village industries, weather, land records, utilities (such as, ration cards, driving licenses, birth certificates, death certificates, caste certificates, income certificates, etc.), and so on. Some projects have coverage in particular areas, e.g. Bhoomi (covering land records), whereas some other initiatives have coverage in an array of areas. Community Information Centres (covering education, health, utilities etc.), Most of these initiatives are establishing information kiosks.

Public Library in the Information Communication Technology Era

The public library has become a multi-purpose agency with multiple roles covering the areas of information and lifelong learning, recreation and leisure, culture and research. The new Information and Communication Technologies (ICT) do not threaten the existence of public libraries but offer an opportun ity to provide increasingly valuable and effective services for users. Because of their importance, public libraries are at the heart of both the Department for Culture, Media and Sport (DCMS) and broader government policies:

• They underpin education, providing essential support for school children, students and lifelong learners;
• They enhance public access to the world’s storehouse of knowledge and information;
ICT Based Library Activities

1. **DATA Processing**: Data processing is a process that uses a computer programme to summarises analyzes or otherwise converts data into usable information. The process may be automated and run on a computer. In the Data processing we can do Data Entry, Data coding, Data transformation, Data Translation, Data Summarization, Data Aggregation, Data Validation, Data Tabulation, Statistical Analysis, Computer Graphics, Data Warehousing, and Data Mining.

2. **Circulation**: A circulation department is one of the key departments of a library. It provides lending services and facilities for return of loaned items. Renewals of materials and payment of fines are also handled at the circulation desk. Circulation staff may provide basic search and reference services to library users.

3. **Cataloguing**: Online cataloging has greatly enhanced the usability of catalogues. OPACs have enhanced usability over traditional card formats. The online catalogue does not need to be sorted statically; the user can choose author or, title, keyword, or systematic order dynamically. Most online catalogues offer a search facility for any word of the title is reached even better.

4. **Bibliography**: Bibliographic service compilation of bibliographies, reading lists and state of the art reports are very parts of LIS work, particularly in research and academic libraries. Browsing through bibliography database in electronic form on CDROM or online.

Public Library Services through ICT

1. **CD ROM Searching**: The CD ROMs coming along with books are assigned accession numbers are kept sinned issued to the users to get information whenever needed. Libraries has also subscribed to CD ROM database provides for online Access.

2. **Online Networking**: Networking is one of the most effective ways of serving users needs comprehensively. Networked access to database would help get newly-published information to library users.

3. **Photocopying**: The technology of reprography made a big impact on the document delivery system. Most of the research libraries have reprographic machines and provide photocopying of any document on demand.

4. **Online Information on Service**: Online Information Services are anticipatory or responsive. Both these services promote the use of library materials, make available library materials to users requirements. The various services include Newspaper clippings, Abstracting/Indexing Services, Current awareness services, translation services, referral services, photocopying services and compute erized services.

5. **News Clipping and Scanning Service**: Newspaper constitute an important source of information as they contain the latest information in the form of news with, often daily, updated. Print media is useful for research needs but many organizations and individuals are turning to online newspaper clipping services and some organization do this by their library.

6. **On-line Reservation Service**: The Online Reservation service allows you to reserve books and journals which are on order, being processed by the Library or on loan to another reader. User can reservation at the Issue or Information Support Desk.
using the request option the on-line catalogue.

7. **Database Searching Service:** Through this service, we regularly provide the users with the exact information they need, depending on their interest profile, from our collection of major national and international databases are (retrospective and current) on our subject. The databases are in CD ROM or comput erized form which saves their valuable time and energy, as the information available here is pinpointed and readily accessible.

8. **Audio-Visual Service:** Audio-visual materials are important sources of information, education and entertainment. Many libraries particularly media libraries and large academic and public libraries hold audio visual material such as DVD, films, pictures and photographs etc. Libraries allow their members to borrow those. Recent developments in storage media, compression and encryption technology have made it possible to store large amount of multimedia documents on hard disk and disseminate through internet.

9. **Internet Access:** The use of the Internet around the world has been growing rapidly over the last decade. Libraries provide free or controlled access to internet and email. Depending upon the availability users can be given time slots for use of internet facility. Usually internet enabled terminals are provided in the library that can be used for internet access and email etc.

10. **E-Query Services:** E-Query Service is a Web-enabled contemporary reference service offered to the registered members of the Library together handle queries received in person or by e-Mail. E-Queries may sometimes need to be followed-up with telephone, fax, regular mail, or personal interactions. Library, appropriate and brief information gathered in response will be sent to the enquirer through e-Mail within three consecutive working days from the date of receipt of the query.

References

Application of NewGenLib (OSS) for Automation of Library of College of Horticulture, Kolar, India

SHANKAR REDDY KOLLE

Abstract

This paper aims at presenting an overview of NewGenLib (OSS) and experience of its implementation at Library of College of Horticulture, Kolar, Karnataka, India. Literature review and author’s first-hand experience of NewGenLib (OSS) implementation in Library of College of Horticulture, Kolar, Karnataka State, India. NewGenLib is web based open source library automation software, which can be used by all types’ libraries. It supports major international standards and has good features and with minimum knowledge of computer can handle and operates it very effectively. The paper would be helpful to the library professionals in selecting and implementing the NewGenLib (OSS) for automation of their Library.

Keywords


Introduction

Open source software (OSS) is one that can be used by anyone without paying anything to anyone, the software licenses grant rights to users which would otherwise be prohibited by copyright. So, all software is produced from source code, and all source code is human-readable (with the requisite knowledge). The difference of “open source” is that at original source code files are made publicly available, typically via the internet or on some digital storage medium. The other type of source code files, those that are not publicly published, are known as “proprietary” (i.e. “closed source”) and are kept private. Microsoft, for example, does not publish the source code to its well-known software products, like Office, Internet Explorer or Solitaire, but their source exists, on some server, somewhere within the company (Alan, 2010). According to O’Reilly (1999) Open source software (OSS) is not only about a software itself, it is more about democratization, collaborative networking and personalization of software, and a perception of the software as a service. These include rights on usage, modification and redistribution.

Breeding (2008) states that “Open” or “free” means that library does not have to pay the license fees and upgrades, but some expenses such as the staff time, training, infrastructure,
software support, etc. should be borne by the library. In a library environment, budget, time, and staffing either predicate or prevent technological initiatives. While patrons’ needs are growing, library budgets are shrinking. The Centre for Information Behaviour and the Evaluation of Research (CIBER), University College, London, 2009). Koha was the first open source library management system. Developed in 1999 by Katipo Communications for Horowhenua Library Trust in New Zealand, it first went live in January 2000. It has customers all over the world (Koha, 2009).

Generally, library automation means use of some tools to carry out library activities efficiently rather than manually such as use of computers. According to Lubanski (2012), automation simply means “the use of machines or technologies to optimize productivity in the production of goods and delivery of services”. Aina (2004) opined that automation involves the computerization of routine tasks hitherto being performed by human beings. Library automation therefore is a process of applying or utilizing ICT facilities to perform those tasks that are traditionally performed manually in the libraries such as acquisition, cataloging, circulation, serials management, etc. The effectiveness of the library services could be improved in case automation of library operation using the software at may be open sources or paid. But the open source software’s have good features and capability of working in web environment. The use of open source software to automate libraries is becoming more realistic than in past. To cope with the situation, the library professionals must opt for the open source software for automation of their library which in turn, improve the operation effectiveness of the library and image of the library professionals. According to Chudnovyi (2012), there are three factors pushing the use of OSS in libraries: 1. OSS licenses allow libraries to cut budget on software and use it to other issues needing more funds. 2. OSS product is not locked into a single vendor. Thus even if a library buys an open source system from one vendor, it might choose to buy technical support from another company or get it from in-house experts. 3. The entire library community might share the responsibility of solving information systems accessibility issues. In this paper, we will discuss the NewGenLib (OSs), its features and modules and experience of automation of library of College of Horticulture, Kolar, Karnataka State, India.

Review of Literature

Morgan (2002), in his paper, discussed the advantages of OSS for libraries, emphasized on the various opportunities offered by OSS, including possibility to take control of library services and collection, lowering the barriers of learning process and giving back to the community at large, by contributing to the OSS development. According to Frumkin (2002), OSS would help in empowering libraries, through knowledge and understanding, by adopting and participating in development of OSS solutions. Corra do (2005) found that OSS could benefit libraries through lower initial and ongoing cost, eliminate vendor lock-in and provide for greater flexibility.

According to Breeding (2008) almost all libraries in the developed world make use of an Integrated Library System. The proprietors products have been available for many years, have reached a high level of maturity, and remain the dominant approach used for library automation. Bissels (2008) contributed an article regarding OSS installation at the Royal London Homeopathic Hospital (RLHH). Bissels chronicles the transition to the Koha 3.0 library management system (LMS) for use as the library’s primary information
access framework. Bissles found that Koha, an open source ILS, fulfilled the needs and goals of a specialized medical library institution. Bissles' criteria for the library's ILS selection included the following requirements: an application which requires little training, is user friendly, is compliant and able to accord with library standards, is inexpensive, and has the ability to adapt to a specialized environment.

Krist (2009) suggested that for libraries with inadequate financial resources to fund proprietary software solutions, OSS was an excellent option. Rafiq and Ameen (2009) in their paper on OSS application in Pakistani libraries, mentioned that at issues like digital divide, conceptual confusion, social disparity, lack of technological, financial and human development factors affected the decision to adopt OSS in libraries.

Singh (2012) in their article discusses the issues like History of OSS, their Definition, selection criteria of library automation software; factors pushing the use of OSS; the features of NewGenLib open source software and evaluation of these in the line of advantage ages and disadvantage ages. Ukachi et al., (2014) made study, in that highlighted the relevance of library automation, spelt out the salient issues to consider in library software selection, discussed the characteristics of OSS that qualify them to be effective library automation software, and enumerated the various OSS available for integrated library management. Recommendations on the key factors that should be prioritized for the achievement of a successful automation of the library services with the open source software are equally made in the paper. Other some of the studies conducted on open access library automation software (Alan, 2010; Alexander and Singh, 2010; Bojan et al., 2013; Singh and Sanaman, 2012; Giri, 2013; Tristan, 2011; Riewe, 2008 and Negi, 2014).

NewGenLib Software

NewGenLib (OSS) is an integrated library management system developed by Verus Solutions Pvt. Ltd. Domain expertise is provided by Kesavan Institute of Information and Knowledge Management in Hyderabad, India. NewGenLib version 1.0 was released in March 2005. On January 2008, NewGenLib was declared Open Source Software under GNU GPL. The latest version of NewGenLib is 3.0.4 R3 released on 14 February 2014. It is an Integrated web-based Library Management and Networking Solution. NewGenLib also uses contemporary n-tier based architecture and open source components. These features make the software not only affordable but also scalable and relatively easily maintainable because each of its layers can be sized or upgraded when needed. Unlike other Indian library automation softwares that have been on the scene for over a decade and a half, NewGenLib is fully based on web technologies in all its versions. Equally importantly, the networking/consortium version of NewGenLib allows cost-effective networking of libraries via the web using a single server and software infrastructure.

NewGenLib supports the following metadata standards such as MARC21, AACR-2R, MARC-XML and Dublin Core. Out of four, Dublin Core is not only a metadata standard but also an interoperability standard in that it is used by different communities of practice to exchange information with each other. The NewGenLib supports the common interchange (or interchange) standards such as ISO 2709 (Common interchange for metadata), MARC-XML and AGRIS—Application Profile.

NewGenLib supports interoperability standards such as SRU/W and OAI-PMH. These are standards which are labeled as interoperability standards and are meant to help library
and information systems to exploit the highly distributed nature of web resources. These standards allow disparate software using one or other platform (Windows, Linux, etc.), one or other database backend (MS-SQL Server, MySQL, PostgreSQL) and residing on a network anywhere in the world but connected to the Internet, will be able to exchange information with each other and/or search each other’s databases seamlessly without any barriers. These are web services standards in that they use simple web protocols and implementing these does not require extensive programming. SRU/W is a protocol for federated searching while OAI-PMH is a protocol that is the bedrock of the Open Access (OA) movement. It is a protocol that all institutional digital archives (or repositories) are expected to support so that harvesters can draw information from each other in enriching their databases).

Database Development in NewGenLib

Bibliographic databases under NewGenLib comply with the MARC-21 format. By this we mean that MARC-21 bibliographic data can be easily imported into NewGenLib data structures and also that data within NewGenLib data structures can be exported as MARC-21 records. In addition to support for bibliographic data, NewGenLib also supports the MARC-21 format for Authority and Holdings data. This enables libraries using NewGenLib not only to describe bibliographic data for all kinds of material types using the MARC-21 and AACR-2R standards, but also ensure that internal authority files (for personal and corporate names, subject terms, series titles, geographic names, etc.) is maintained to ensure consistency and accuracy in records. NewGenLib provides for three levels of detail in cataloguing: a minimal level using a simple template; a mid-level of detail using a general template; and the capability to enter as detailed cataloguing data as will be permitted by the MARC-21 standard by using the MARC-21 template. Irrespective of the level of detail with which the data is entered, records are stored as MARC-21 records in the NewGenLib database (Haravu, 2009).

NewGenLib Architecture

NewGenLib is based on the so-called n-tier architecture with an Application Server that mediates between the client machines and the database server. The diagram below shows the NewGenLib architecture.

![Fig. 1 NewGenLib Architecture](image)
Features Of NewGenLib

The following are the features of NewGenLib software:

1. Functional modules are completely web based.
2. Uses Java Web Start™ Technology
3. Compatibility—Complies with international metadata and interoperability standards: MARC-21, MARC-XML, z39.50, SRU/W, OAI-PMH
4. Uses chiefly open source components
5. Scalable, manageable and efficient
6. OS independent—Windows and Linux flavours available
7. z39.50 Client for federated searching
8. Internationalized application (I18N)
9. Unicode 4.0 complaint
10. Easily extensible to support other languages
11. Data entry, storage, retrieval in any (Unicode 3.0) language
12. RFID integration
13. Networking—Hierarchical and Distributed networks
14. Automated email/instant messaging integrated into different functions of the software
15. Form letters are configurable and use XML-based OpenOffice templates
16. Extensive use of setup parameters enabling easy configuration of the software to suit specific needs, e.g., in defining patron privileges
17. Supports multi-user and multiple security levels
18. Allows digital attachments to metadata (Haravu, 2009).

NewGenLib (OSS) has following main modules:

- Acquisitions
- Technical Processing
- Serials management
- Circulation
- Administration
- MIS Reports
- Task to do today (daily scheduler)
- OPAC

NewGenLib (OSS) supports Android Mobiles and Tablets

Android Application supports the following features for the users:

1. Search the collection
2. See the details of the records as well as their availability
3. Reserve items
4. Request for check-out
5. View their transaction history
6. View their current check outs and also renew them
7. View their current reservations and also cancel them
8. View their current requests for check-out and also cancel them
NewGenLib: It’s Technology

NewGenLib Application is 5-tier based:

1. Present ation layer: It has a web-based Java Rich Client for the librarian interface and HTML based OPAC.
2. Web layer: NewGenLib uses front -contains servlets for processing http requests and responses from the present ation layer
3. Business process lay er: All the server side processing and business logic is present in this layer
4. Object-Relational model: NewGenLib maintains a classes equivalent to database tables in the RDBMS. This ensures database interoperability.
5. Database seserver

One of the greatest advant ages with Java Rich Client being used as librarian interface is:

a. Part of processing can be done by the client thus reducing load on the server and unnecessary network usage.

b. Avoid server side memory usage for sessions (Haravu, 2009).

Experience of Implement ations of NewGenLib@College of Horticulture, Kolar, Karnataka

The College of Horticulture, Kolar was established in 2009 as a constituent College of University of Horticultural Sciences, Bagalkot, Karnataka State, India. The college is located 72 km away from the Bangalore the capital city of Kar nataka State, India. The college offers four years B. Sc. Programm e in Hortic ulture and right now 240 students pursuing the course. The library to serve the students and faculty members was established in 2009; the librar y has collection of more than 5000 books, references sources and thesis. The automation of process of the librar y started during October 2012 using NewGenLib (OSS), we have downloaded the following software’s from the respective URLs:


To install we referred the step by step procedure given at http://www.verussolutions.biz/kb/installation New.

After installation, we just cont acted Virus Solution Pvt. Ltd. for data migration, they asked us to send the details of the librar y collection as per the accession num ber in excel format, and next day they imported the data into the system with the help of team viewer.

After installation of all the software’s, we did execute Run NGL3Server.bat – Shortcut
by double clicking on the icon presented on the desktop, the below given window appeared. We just say ok.

**Fig. 2.** Execution of NewGenLib

After wards, the below given window appeared. We just typed user ID = 1 and password “abc”.

**Fig 3.** Login in NewGenLib

After that Main page of the software is appeared as shown below.

**Fig 4.** Home page of NewGenLib
We just click on the administration module. Then we set up the parameters such as budget related things, patron category, vendor, binder, department, issue privilege etc. Below given window is for adding new patron.

**Fig. 5. Adding new patron in NewGenLib**

NewGenLib’s acquisitions functionality is much wider in scope and reflects the work flows and practices that are typical of academic and public libraries in India and probably other developing counties. These include: Management of user suggestions, On-approval purchases, Firm orders including the search for orders by fund, vendor, or order number, Advance payments and the application of credit notes, Gift acquisitions, Receipt of orders, Accessioning of received items, Payment processing and Tendering for supplies of items.

**Fig. 6. Acquisition module**

After that, Click on Technical processing module. This module has following options such as Import Bibliographic data, From other libraries’ OPACs, Primary or Original Cataloging, Provides 3 different templates for Cataloging: Simple, General and MARC21 Templates, Compliant to MARC21 for Bibliographic, Authority and
Holdings Data. Supports all material types (By MARC21), Open Archive support (OAI-PMH protocol compliant), Attach digital content along with catalog record, Customizable MARC21 templates and Search indexes, Search catalog. Search catalog through various system defined Indexes. Library can also define custom indexes. Cross walks available meta data standards like MODS 3.0 and Dublin Core, Technical Processing of items received through Acquisitions and Serials Management.

![Fig. 7. Catalogue interface in NewGenLib](image)

You can import catalogue data from the OPACs of the other libraries as shown in the below given window. For Example, Library of Congress OPAC.

![Fig. 8. Importing of catalogue record from the OPACS](image)

Click on the Circulation module, then click on the issue option you will see the below given window. You can issue, return, and renew the item, Reserve the item, separate the material for binding purpose, collect overdue, Inter library loans and also you can record reference materials usage etc.
Fig. 9. Issue window in NewGenLib

The web OPAC picture is given below you can search all materials by auth or, title, keyword accession no., subject, classification no. and also you can view the whether the particular book in the library or on loan.

Fig. 10. Web OPAC

For generation of reports separate application is there, using that you can generate reports related to all activities and you can generate complete accession register and also you can perform stock verification very effectively using stock verification inventory option.

Fig. 11. Reports application in NewGenLib
Printing of barcode and spine labels is possible with NewGenLib, without purchasing special printer for barcode print one can use common printer for printing of the barcode.

Fig. 12. Barcode printing in NewGenLib

Conclusion

NewGenLib (OSS) is library automation software that allows a library to manage its internal housekeeping routines such as acquisitions, serials control, circulation, etc., but also to create and host an institutional open access repository. The NewGenLib software has very good features and also very easy for customization of the parameters, the person with minimum computer knowledge can operate and handle the software. The NewGenLib is very suitable software for the colleges, public libraries, school libraries, university libraries. NewGenLib also allows libraries to serve both data provider and service provider functions. The Virus Solution Pvt. Ltd. keep upgrading the software from time to time. New features are coming for every quarter. The libraries are facing budgetary problem due to the negligence of authority towards the library. The library professional can use NewGenLib software for automation of the library as it available with zero cost, which could increase the effectiveness of operations of the library and image of library professionals in the information age. At the initial stage, we found some difficulties and problems; the same were solved by the NewGenLib support team with great interest. Now software is working very nicely without any problem. We strongly recommend the other library professionals to use the NewGenLib software as it has good features and workability compared to paid software and as we using this software since October, 2012.

References


2 1  . Nur Aham m ad , (2014 ),”Implement ing the Koha Integra ted Librar y System at th e Ind epend ent University, Bangladesh: A Practical Experience”, *The Electronic Library*, Vol. 32 No. 5, pp .


Role of Public Libraries in Eradicating Youth Unemployment Problem in India

SANKAR REDDY KOLLE; DEEPAK KUMAR GOU DA & SATISH M. V.

Abstract
Public Libraries play vital role in society by offering library and information services to the citizen. Out of total, 49 per cent of youth are unemployed in India. This paper discusses the possible role that public libraries can play in eradication of youth unemployment problem in India and also lists the states that passed public library acts. Further, it elaborates the public libraries can undertake some of the activities that reduce youth unemployment problem and also discusses the problems that public libraries facing in India.

Keywords

Introduction
The IFLA/U NESCO Public Library Manifesto (1994) states that the public library, the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision-making and cultural development of the individual and social groups. Public libraries, therefore, provide unrestricted opportunities for individuals to get informed and inspired, as well as encouraging the love of reading and providing entertainment for the betterment of the community. Murison (1971) highlights the great role of public libraries in a community as ‘a social institution which converts a savage community into a state of civilization’. Weibel (1992) has discussed the role of libraries in promoting literacy. Further, a positive relationship is observed between public library and literacy level, which in turn, contributes to increase in economic productivity (Lin, 2004). According to study conducted by Lin (2004) public libraries contribute to economic productivity through their various literacy programmes and argues that cutting financial support for public libraries as practiced by many municipal governments is a short-sighted policy and will adversely affect economic productivity of counties in the long run.
Unemployment in India

Employment is not a simple term denoting the mere holding of a job for which a wage is paid, or the operation of one’s own business. Rather, it signifies the state of anyone who is doing what, under the circumstances, he most wants to do. Such a person is fully “employed.” A community or nation has “full employment” when all of its people are fully employed.

India, the world’s largest democracy, attaining independence in 1947, was faced with the twin problems of unemployment and poverty. India faces youth unemployment as a major challenge for labor market policy. Young job seekers make up 49 per cent of the total unemployed in India (Sinha, 2013).

Status of Public Libraries Act in India

India attained freedom in 1947 and became a Republic in 1950. For facilitating administrations, it now has a National Capital Region of Delhi, 28 States and 6 Union Territories after Independence. Even before Independence, Kolhapur Princely State, in the Western India passed Public Libraries Act in 1945. Since independence of India the following States have passed Public Libraries Acts.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Year</th>
<th>State</th>
<th>Sl. No</th>
<th>Year</th>
<th>State or Union Territory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1948</td>
<td>Tamilnadu</td>
<td>11</td>
<td>2001</td>
<td>Odisha</td>
</tr>
<tr>
<td>2</td>
<td>1960</td>
<td>Andhra Pradesh</td>
<td>12</td>
<td>2000</td>
<td>Gujarat</td>
</tr>
<tr>
<td>3</td>
<td>1965</td>
<td>Karnataka</td>
<td>13</td>
<td>2005</td>
<td>Uttarakhand</td>
</tr>
<tr>
<td>4</td>
<td>1967</td>
<td>Maharashtra</td>
<td>14</td>
<td>2006</td>
<td>Rajasthan</td>
</tr>
<tr>
<td>5</td>
<td>1979</td>
<td>West Bengal</td>
<td>15</td>
<td>2006</td>
<td>Uttar Pradesh</td>
</tr>
<tr>
<td>6</td>
<td>1988</td>
<td>Manipur</td>
<td>16</td>
<td>2007</td>
<td>Lakshadweep</td>
</tr>
<tr>
<td>7</td>
<td>1989</td>
<td>Haryana</td>
<td>17</td>
<td>2008</td>
<td>Bihar</td>
</tr>
<tr>
<td>8</td>
<td>1989</td>
<td>Kerala</td>
<td>18</td>
<td>2009</td>
<td>Chattisgarh</td>
</tr>
<tr>
<td>9</td>
<td>1993</td>
<td>Mizoram</td>
<td>19</td>
<td>2009</td>
<td>Arunachal Pradesh</td>
</tr>
<tr>
<td>10</td>
<td>1993</td>
<td>Goa</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

So far, only half of the States of the Indian Union have successfully passed the library legislation. However, in the coming few years, there is greater possibility for a library law being enacted in the remaining States (RRLF, 2015).

Role of Public Libraries

Public libraries are regarded as Peoples University, they play very important role in dissemination of information to the common man with free of cost. Public libraries play a vital role in creating an informed citizen. A well-informed and educated citizen can contribute to an enlightened society in which they are active participants in nation building. Brown (2004, p. 174) quotes Schum an as saying that “librarians have a vital role to play, a social responsibility to work toward an invention of the future which is free and just for all”. The public libraries in India can be instrument for education of youth unemployment with its innovative services and training programmes.
How Public Library Can Eradicate Youth Unemployment

Public libraries can help in reducing the level of youth unemployment in a country by engaging in the following:

**Spreading the Job Opportunities information among the Citizens:** The district library should create awareness among citizens of the districts about new openings in government and private sector. The employment opportunities that publish in daily newspapers and magazines should be brought to notice to the users of the library from District library to Grampanchayat libraries. It would help the citizens to apply for the job and prepare for the education and skills required to be eligible for the job.

**Building good Collection of Materials related to Competitive exams:** The library should be ideal one that fulfills the information requirement of the each and every citizen. Public library should acquire the documents related to skills development and competitive exams, regularly conducted by Staff Selection Commission, UPSC, State Public Service Commission, RRB, Banks and other agencies that can help the users to prepare for the exams and get through it.

**Organizing Workshops and Conferences:** The public library system in India can play a major role in eradication of unemployment among the citizens by organizing workshops and seminars on relevant subjects and giving hands on training to citizens to prepare for specific jobs. The district central library in district place with help of other departments such as Agriculture, Social Welfare, Co-operative, NGO, Self Help Groups etc. should conduct such programmes that can be useful to the citizens to undertake self-employment, also employment in private and public sector.

**Organizations of Skill Development Programme:** The 21st century is considered as information era, where ICT is playing a very important role in every aspect of life. The computer literacy is very much required for every job, hence the district library should organize special training programmes related to use of computers for daily life and office work. The computer skills associated with its use for commercial purpose are very much in demand. And also for women, workshop on preparation different type’s food, their packaging and marketing etc. should be organized on regular basis. Ehrke (2013) states that in Uganda, more than 500 youth obtained job training through public libraries programmes in a single year. In South Africa, a library trained more than 1,000 people, helped 20 young people find jobs and convinced 31 others to continue pursuing their educations. And in Kazakhstan, 55 young people found work, improved their jobs or developed new businesses because of a library’s innovative training programmes.

**Separate Reading Sections for Competitive exams:** Each district and Branch Libraries at Taluk level should arrange for separate reading hall for the users who are preparing for the competitive exams regularly conducted by Staff Selection Commission, UPSC, RRB, Banks and State Public Service Commission. This can be a very good measure to eradicate the unemployment in India.

**Organizing IAS and Other Civil Service Coaching Classes:** Staff Selection Commission, UPSC, State Public Service Commission, RRB, and Banks call for job regularly. For the giving introduction, overview about all these exams, public library should organize regularly coaching classes to its users. This could be very useful to the rural unemployed graduates to know the pattern, marks, type of exam, how to prepare, time management and other things.
Problems and Prospects

**Lack of Fund:** The public library system in India is suffering from the budgetary problem. The cost of the books increasing day by day and the bud get for the library decreasing. The public libraries come under the state subject in India. The libraries need good amount of budget for work effectively to help the citizens in all round development of their personality. To develop good collection of documents, proper building and organize some programmes which can help era dictate unemployment need special bud get.

**Lack of Importance of Public Library Among the Authority:** The public library’s importance in overall development of each citizen in India is not recognized. The politicians and bureaucrat have undermined the importance of the library and library professionals in India unlike western developed count ries.

**Lack of Good Reading Materials:** Public library reading materials are outdated and not in usable condition. This is also one of the major problems which are hindering the public library system in India. The Public library collection should be upgraded on regular basis.

**Lack of Functional Buildings:** One of the major problems in India that public library facing is not having of functional building designed for library purpose. Most of the libraries in India are under one roof and some other building of government which is not built for it. To give effective service, the public libraries should be housed in well functional building.

**Lack good Qualified Library Professionals Staff:** The public library facing one more major problem is lack of skilled manpower, most of the libraries in India handled by unskilled or semiskilled staff. Most of the branch libraries and district libraries are handled by semi-skilled. To provide effective service, Govt. should appoint the skilled manpower. The governments should arrange for special training programme to the staff of the public libraries in India on time to time to update their skills and knowledge.

**Lack of ICT based Services:** Public libraries in India still not equipped with modern ICT equipments and facilities. Public libraries in developed count ries are offering web based services to the users. Public libraries in India yet get com puters for Library housekeeping operations. Hence, the State governments and Central Government in India should provide bud get to procure ICT equipments so that public can access the Internet at public libraries at free of cost or with nominal charge as like in developed count ries such as USA, UK etc.

**Conclusion**

The unemployment is major problem that India facing. The Public Libraries are regarded as Peoples University. They provide accurate information to the users. The public library can play major role in dictation of unemployment by acquiring good collection of documents related to development of knowledge and skills that required by today’s industries and other organization. The public library can be good tool for creation of awareness about new vacancies in private and public sector among the citizens. The public library can organize seminars, conferences and workshop on skill development with help of other Govt. agency. The lack of sufficient budget, skilled manpower, good quality reading materials etc. are the major problems have been facing by the public libraries in India.
Role of Public Libraries in Eradicating Youth Unemployment Problem in India

References

Institutional Repositories in India: A Study

Sharad Kumar Sonker; Satish Kumar

Abstract
Advancement of information communication technologies has changed the functions and services of libraries and information institutions. Libraries are moving toward the modernisation of library activities and services using computers. The impact of information technology has changed the information demands of the users and their information seeking behaviours. The libraries are struggling through paucity of resource and crises of the budget which affect the subscribed of resources. This paper highlighted the basic concept of the digital or institutional repository, features, process, functions etc. It is concluded with the remark that the library and information science professionals should come forward for the development of the institutional repositories. The schools of library and information science should include this topic in their curricula and provide hands-on experience to the budding professionals.

Keywords
Institutional Repository, Research Output, Scholarly Communication, Digital Archive

Introduction
Institutional repositories are very important channel for open access. These repositories facilitate to digital archive institutional publications and intellectual products of faculty members, institutions and students. Institutions, especially higher education institutions that create a phenomenal amount of scholarly knowledge as part of their academic discourse and research output. These findings as well as research output are published through many scholarly communication like; journals, magazines, conference/symposium.seminar proceedings, textbooks, books, other printing materials etc. Institutions of higher education and learning produce a great deal of knowledge in the form of unpublished materials like technical reports, working papers, classroom presentations, lecture notes, other related resources.

Definition of Institutional Repository
“A university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation
where appropriate, as well as organization and access or distribution (Lynch, 2003 ).”

Raym Crow describe that “institut ional repository is a digital archive of the intellectual product created by the faculty, research staff and stud ents of an institut ion and accessible to end users both within and outside of the institut ion, with few if any barriers to access (Crow, 2002 ).”

Barton and Walker describe IR “A digital repository designed to manage, host, preserve and enable distribution of the scholarly output of institut ion’s faculty (Barton and Walker, 2003 ).”

Objectives

• To create global visibility for an institut ion’s scholarly research output.
• To support the open access movement and play a crucial role in the scholarly communication system.
• To manage and measure research and teaching activities of the organization.
• To enable and encourage interdisciplinary approaches to research and educational outputs.
• To facilitate open access to institutional research productivity.
• To promote collection and preservation of all the publications of the institut ion in a central place and thus making them available to users whenever or wherever needed, which enhances the teaching, learning and research of the organization.
• To work as a vehicle for all the research publications, grey literature of the institut ion and enhances the prestige, visibility of the institut ion.
• To store and preserve other institutional digital resources, including unpublished or otherwise easily lost (“grey”) literature like; thesis or technical reports.
• To promote the fourth law of librarianship given by S.R. Ranganathan.
• Teachers and learners use the contents of institutional repository for learning applications.
• To boost your institution’s prestige.

Institutional Repository in Indian Context

In India, a number of scientific and research institut ions, institut ions of higher learning and corpora te research and development produc e qua lity research and scholarly communications published in different international and national journals and conferences/proceedings. Presently, India has adopted the open access much ahead among the developing countries. In India there are more than 100 academic, research institut ions and corpora te th at have created their own institutional repositories.

Methodology

The study is conducted on the basis of the data collected from the ROAR. We found that there is total 104 institutional repository were registered from the India. We have selected top most 25 institutional repository according to availability of the records. The data has highlighted the number of record and the software is used for the development of the institutional repository.
List of Institutional Repositories

In India, there are a large number of institutional repositories that provide facility to access their institutional research output. The list of popular 20 institutional repositories listed here (details accessed through ROAR - source: http://roar.eprints.org):

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of repository/Institute</th>
<th>No of records</th>
<th>Software used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Indian Institute of Astrophysics</td>
<td>6431</td>
<td>Dspace</td>
</tr>
<tr>
<td>2.</td>
<td>IIT Delhi</td>
<td>3487</td>
<td>EPrints</td>
</tr>
<tr>
<td>3.</td>
<td>IIT Mumbai</td>
<td>17024</td>
<td>Dspace</td>
</tr>
<tr>
<td>4.</td>
<td>National Institute of Technology, Rourkela, India</td>
<td>2081</td>
<td>Dspace</td>
</tr>
<tr>
<td>5.</td>
<td>National Center for Antarctic Research, Goa, India</td>
<td>617</td>
<td>EPrints</td>
</tr>
<tr>
<td>6.</td>
<td>INFLIBNET</td>
<td>1373</td>
<td>DSpace</td>
</tr>
<tr>
<td>7.</td>
<td>Indian Institute of Management, Kozhikode</td>
<td>561</td>
<td>DSpace</td>
</tr>
<tr>
<td>8.</td>
<td>Digital Knowledge Repository of Central Drug Research Institute</td>
<td>1014</td>
<td>DSpace</td>
</tr>
<tr>
<td>9.</td>
<td>Kautiya Digital Repository</td>
<td>249</td>
<td>DSpace</td>
</tr>
<tr>
<td>10.</td>
<td>Indian Institute of Science, Bangalore, India</td>
<td>38622</td>
<td>EPrints</td>
</tr>
<tr>
<td>11.</td>
<td>GGSIPU</td>
<td>135</td>
<td>DSpace</td>
</tr>
<tr>
<td>12.</td>
<td>E-theses A Saurashtra University Library Service</td>
<td>1016</td>
<td>EPrints</td>
</tr>
<tr>
<td>13.</td>
<td>CMFRI</td>
<td>7043</td>
<td>EPrints</td>
</tr>
<tr>
<td>14.</td>
<td>Cochin University of Science &amp; Technology</td>
<td>4032</td>
<td>—</td>
</tr>
<tr>
<td>15.</td>
<td>NAL-IR</td>
<td>5776</td>
<td>EPrints</td>
</tr>
<tr>
<td>16.</td>
<td>DSpace at Vidyasagar University: Home</td>
<td>701</td>
<td>DSpace</td>
</tr>
<tr>
<td>17.</td>
<td>Indian Institute of Management, Ahmedabad</td>
<td>12183</td>
<td>DSpace</td>
</tr>
<tr>
<td>18.</td>
<td>Osmania University Digital Library</td>
<td>24506</td>
<td>DSpace</td>
</tr>
<tr>
<td>19.</td>
<td>DSpace at M S University: Home</td>
<td>467</td>
<td>DSpace</td>
</tr>
<tr>
<td>20.</td>
<td>DSpace at IUCAA: Home</td>
<td>2625</td>
<td>DSpace</td>
</tr>
</tbody>
</table>

Contribution of the Count ries for Creation and Development of Repository

![Proportion of Repository Organisations by Country - Worldwide](http://www.opendoar.org)
The above chart shows that India contributes only 2.7% in the creation and development of institutional repositories in the world wide. It is also highlighted that it secure 10 rank in the world whereas US has secured highest position that is 15% in the world.

Process to development of an institutional repository

Feasibility study

Design and development of a work flow diagram

Selection of Hardware and Software

Installation of Hardware and Software

Testing of Hardware and Software

Content Management

Creation of Digital Collection

Archiving and Preservation

Sharing or Dissemination

Administration

(Source: Sonker, 2008)

**Functionality of Institutional Repository:** The following diagram shows the functionality of the institutional repository.

**Registration:** Users have to register for the submission of the documents in the digital repository.

**Document submission:** In this process users have to submit metadata and full text article or document in the digital repository.

**Moderation:** Moderator has right to look the quality of the contents before including in the collections.

**Archiving:** The submitted article or document should be stored for future access.

**Dissemination:** The archived documents should be disseminated through various medium.
**Administration:** This option provides you with the facility to administrate the collection development and function of the institutional repository.

**Conclusion**

The library and information centres are performing a vital role in the development of collection and services to the users. The institutional repositories or digital archives supported to the libraries to collect, archive, disseminate information or documents created by the research scholars and faculty members of the particular institution in the growth of higher learning and research. The library and information science professionals should come forward for the development of the institutional repositories in each and every institution. The school of library and information science should include this topic in their curricula and provide hands-on experience to the budding professionals in the field of library and information science.

**References**

Public Library Act in India

Sita Ram Sharma

Abstract

It is recognized all over the world that education including the provision for free public libraries is the responsibility of the Government at National, State and Local levels. A public library is the People’s University. Public libraries are social institutions offering information dissemination services based upon knowledge for vivid public groups on social, political, and economic. At present in India 19 states have passed the library legislation for smoothly running the libraries. Haryana Public Library Act 1989, was passed by the Haryana Vidhan Sabha on Monday, September 11, 1989 by then education Minister Smt. Sushma Swaraj.

Introduction

Public library is an institution for the public, by the public and of the public, in other words it is established for the use of the public which includes every citizen whether he is high or humble by birth, or is rich or poor, or is powerful or meek or is male or female, child or old or is highly educated or illiterate. Secondly, a public library is managed and controlled by the public through its representatives through library boards, trustees or committees. A public library is also financed from public funds.

A public library is for all without the distinction of caste, creed, class or locality. This implies the establishment of various kinds of public libraries at various levels of localities. These include urban as well as rural libraries.

The public library should serve as a local information centre making the sources of knowledge readily available to the public. Public libraries should stimulate neo-literates, semi-literate, non-users to become readers, and serve the population with knowledge and information.

Public Libraries in India

Public libraries in India are established throughout the country and are located in state capital district headquaters and talukas as well as village levels. There is one state central Library in every state and then district libraries in each district and taluka/village libraries in many villages, resulting in a three-tier structure. Public libraries are mainly supported by central and state governments and state governments and are generally under their care of the Development of the public libraries in any state is the responsibility of the respective
state government. Issac, presently, in India out of 29 states and 7 union territories, only 19 states have library legislation so far. Out of 19 states, the Acts of Manipur, Har yana, Mizora m and Gujara t have not been implemented or implemented only partially. Library legislation in these states ensures that adequate funds and other resources are available for public libraries. But today, the three more states got the legislation so that the current is 19 states got the library legislation.

Need for Library Legislation

It is recognized that freedom, prosperity and the development of a society, and of individuals, are fund amental human values. These values can be attained through well-informed citizens, who will be shaped through utilization of public libraries. It is recognized all over the world that education including the provision for free public libraries is responsibility of the Government at National, State and Local levels. A public library is the People’s University.

In modern times, the public libraries must provide services with certain standard, and with an objective of reconstruction and development of a society. They cannot be achieved only through individual munificence. A library service on sound lines requires library legislation to get a perennial source of income. Library leaders, public men, and scholars, have realized that at the only way to establish and develop a public library system is through public law. Pioneers and men of vision like Edward Edwards, Dr. S. Ranganath and many others spared no efforts to bring about library legislation in their respective countries. The U NESCO Public Library Manifesto 1994, emphasizes that public library is the responsibility of Local and National Authorities. It must be supported by specific legislation and financed by National and Local Governments. So a public library is to be maintained efficiently and permanently with uniform, pulsating and integrated library service with properly laid out network of library system. A simple executive order of the State Government will not be able to maintain a sound system, however good it might be and at the same time executive orders cannot generate finances. With the ever growing needs and the escalation of prices, the task in financing will be more difficult. Finance needed for the rising and growing services will be possible only with a State Legislation and cess.

Public library as its name suggests, it is for the people, by the people and of the people. It exists from the civilization of making and act as the important custodian of human culture, knowledge and social customs. The U NESCO Manifesto on public libraries tells that public library is a living force for education culture and information and as an essential agent for the fostering of peace and understanding between people and between nations.

Public libraries are social institutions offering information dissemination services based upon knowledge for vivid public groups on social, political, and economic.

Necessary Elements of Library Legislations

1. **Chief Executive of the State.** In this Act, the chief Executive at State Level shall be called the Director of Public Libraries, who should be an information Science professional.
2. **State Level Authority.** The Act should have the provision for the constitution of a Board as the State Library Authority.
3. **Financial Clause.** The Act should spell out financial sources to ensure a regular
flow of funds and their deployment. There should be a provision in the Act to
collect library cess from all possible sources.
4. The preamble of the Act should clearly spell out the objectives of library legislation
and therefore, it should be precise and explicit.
5. *Network of Library*. The act should provide for establishment and functioning
of public libraries as a para medical structure from village or even a hamlet level, to
the state level via the districts covering towns and tehsils, etc.
6. *Manpower*. A provision should be made to create a cadre of State Library
Services, and all the members of the said service should be Government servants,
and their recruitment.
7. *Rules*. Rules should be made by the State Librarian Authority for all the sections
and for smooth functioning, administration and control of the offices and the
staff.
8. *Registration of Books*. There must be a provision for the registration of books
and periodicals published in the state under the legal deposit rules.
9. *Accountability*. The activities and accounts of the Public Library System shall
be open to public inspection, supervision and as per official audit rules.

According to Indian Constitution the responsibility of the state is to establish and
maintain the state, uniform and integrated public libraries in the state. Library legislation
becomes highly necessary and vital for organization and systematic functioning of
the public libraries in District subdivision and Rural areas of the State.

At present in India 19 states have passed the library legislation for smoothly running
the libraries.

**Salient Feature of the Public Library Act passed by the State**

**1. Tamil Nadu Public Library Act 1948** (formerly known as Madras Public Libraries
   Act): Madras public Libraries Act is the first of its kind in the independent India.
   This act provided basis of the Public Libraries System in the erstwhile composite
   Madras State and Tamil Nadu State. Tamil Nadu is very rich in public Libraries.
   i. This act facilitates the establishment of public libraries in the State.
   ii. Provision to appoint a Director of public Libraries.
   iii. Constitution of Local Librarian Authorities, one for Madras and one for each
       District.
   iv. Each local librarian Authority shall levy library cess in the form of surcharge on
       the property tax or house tax at a rate of 6 paise per rupees.

**2. Andhra Pradesh Public Libraries Act 1960**: When Andhra Pradesh was formed
   in 1956, comprising Andhra areas of composite Madras State and Telengana area
   of Hyderabad State. Madras Public Libraries Act was in force in Andhra area. So,
   administrative problems were bound to be there, when two separate acts were in
   operation in one State. Andhra Pradesh is the only state which has separate minister
   for public libraries. There is state librarian committee with the minister as the
   Chairman, which advises the government on all matters relating to the development
   of public libraries in the State.
   i. Constitution of Andhra Pradesh Granthalaya Parishad.
   ii. Constitution of Directorate of Public Libraries to direct, supervise and control
      the public library system.
Constitution of city/zila granth alaya samsthas through nomination of Chairman and Members by the Governments.

3. Karnataka Public Libraries Act, 1965: The Kar nataka Act one of the good Acts, so far enacted, paved the way for a state wide network of public libraries in the Kar nataka State. It comprises of Bombay Kar nataka area, old Mysore area, Hyderabad-Kar nataka area, Madras Kar nataka area and Coorg area.
   i. Provision for a State Librar y Auth ority in the for m of a corpora te bod y with Minister-in-charge of education as chairman.


Haryana Public Librar y Act 1989

This act was passed in 1989 by the Haryana Vidhan Sabha on Monday, September 11, 1989 by then education Minister Smt. Sushma Swaraj.

The salient features of this Act are as follow:

1. This act may be called Haryana Public Librar y Act, 1989. It extends to the whole of the state of Haryana.
2. In this act unless the context otherwise requires. Public Librar y means a Librar y which permits members of the public to use it for reference or borrowing without charging fees or subscription.
   a. The State Gover nm ent shall establish-maintain and develop Librar y Service in the State.
   b. For carrying out the purposes of sub section the state Gover nm ent.
   c. Acquire for its Public Librar y sufficient num ber of books.
   d. Offer in its Public Librar y an adequa te book and reference service.
   e. Promote reading habit and the use of books for the benefit of the people.
   f. Give adequa te librar y service to all Gover nm ent Departm ent and offices subordinate or att ached to these Departments.
   g. Provide Librar y training facilities to ensure adequa te trained personnel for libraries in the state.
h. Provide or secure suitable conditions of service for the library personnel in the state.

i. Promote cooperation between the Public Libraries and Cultural and educational institutions.

j. Promote production and publication of useful literature.

k. The state government shall discharge its functions and responsibilities under this section through.

l. The state Library Authority

m. The state public library.

n. The Co operating Institutions.

4. Establishment of Authority: The authority shall consist of the following ex-officio members. The authority shall advise the state government on all matter for promotion and development of Library Services in the State. The authority shall meet at least once in a year.

a. The Minister in charge of libraries who shall be the Chairman.
b. The Secretary Libraries Department.
c. Secretary, Education
d. Secretary, Finance.
e. Secretary, Culture.
f. Secretary, Local Bodies.
g. Secretary, Social welfare.
h. The Secretary State Development and Panchayat Department.
i. The Director of Public Relation.
j. The Librarian of the Civil Secretariat, Haryana.
k. The State Librarian.
l. The Vice Chancellor of all Universities in the State.
m. The Chairman or President, State Library Association.
n. Director Libraries who shall be the Secretary.
o. A member of the State out of M.L.A. interested in Library Development to be nominated by the State Government.
p. Not more than four non-official members having special knowledge of libraries to be nominated by the Chairman of the Authority.

5. Standing Advisory Committee: Within a month of the constitution of the authority, an eleven member will be nominated by the Chairman of the Authority from amongst the members of the Authority and the Secretary Department of Libraries the Director state Library Director and the State Librarian shall be ex officio members. The Chairman of the Authority shall nominate any member of the standing Advisor Committee to be its Chairman.

a. To advice the state Library Directorate in all technical matters relating to library development and organization.
b. To make recommendations to the Authority on matters relating to the promotion and development of Library service in the State.

6. State Library Directorate: The state government shall constitute a State Library Directorate which shall be a department of the Government.

a. To prepare the annual as well as short or long term plans for libraries in the State in cooperation with the development and other concerned departments of
the State Government and of the Central Government.

b. To prepare and publish descriptive and statistical reports on the working of all the Public Libraries.

c. To arrange or to secure training of various categories of library employees.

d. To conduct inspection of and render advisory services to the district.

e. The Director of the State Library Directorates shall be appointed by the State Government and will have the rank of the Head of the Department.

f. The Director shall be responsible for implementing the programme of work as approved by the authority.

g. Director shall decide where district and other libraries in the state is to be setup

7. State Central Library: The State Government shall by an order establish a State Central Library located in the State. Now the state library of Haryana is at Ambala.

8. Book stock of the State Central Library:

a. The stock of books in the State Central Library shall consist of the books providing for compulsory acquisition of books published in the state books acquired otherwise by purchase, exchange, gifts and its own publication.

b. Materials in the State Central Library may also include films, strips, slides, tape and gramophone one record, maps, charts, bulletins, photos, pictures.

9. Mode of book Acquisition:

a. The Secretary State Legislative assembly shall deliver to the state Librarian bound volumes of all debates and proceedings of the Legislative Assembly.

b. The head of a department in the State Government shall deliver to the State Central Library all books in his office no longer needed there, but which in the opinion of the State Librarian will be of use in the State Central Library.

c. All books and other materials which have to be purchased by the State Librarian shall only be purchased on the advice of a Book Selection Committee.

10. Department of State Central Library

The state central Library shall have at least two sections. State Reference Library Section and the State Lending Library Section.

11. State Librarian: The officer in charge of the state Librarian shall be known as State Librarian.

a. The state Librarian shall be appointed by the State Government.

b. The state Librarian shall be responsible for the management of all the departments of the state Central Library.

c. State Librarian shall maintain the stock of books and conduct all approved activities of the State Central Library.

d. Advise the Authority on all technical matters.

e. Submit the report to Director on working of Library previous year and Statement of income and expenditure of the state Central Library.

f. The state Librarian shall be subordinate to the Director.

12. District Library: There shall be a District Library in each district rendering book service to the resident of a district. In addition to the District Library under Sub section there shall also be the following types of libraries namely.

a. Municipal/City/Town Library

b. Block Library.
13. **Function of a District Library:**
   a. To provide reference and bibliographical service in the district.
   b. To give special reference service to the members of the Municipal committee/corporation of the town/city in which it is situated.
   c. To give special service to student groups, study circles and other educational groups.
   d. To extend library service in the urban and rural areas by setting up branch libraries, mobile libraries and deposit centers and to extend similar service in the district through the various block libraries and other library units.

14. **District Library Committee:** There shall be a district libraries committee for each District Library in the State which shall be constituted in accordance with such regulations as may be framed by the authority. The District Library Committee shall, subject to the approval of the authority frame its rules of business and procedure for carrying out the functions of the District Library.
   a. To supervise the work of the District Library and the various library units.
   b. To start branch libraries.
   c. To take all necessary steps to develop public library service in the district.
   d. To employ in accordance with the rules framed by the authority staff for the District Library.

15. **City and Town Library Committee:**
   a. There shall be a city Library Committee for each city with a population of over one lakh and a town Library Committee for a municipal town with a population of not more than one lakh constituted in accordance with such rules as may be framed by the District Library Committee concerned.
   b. The City or Town Library Committee shall subject to the approval of the District Library Committee concerned frame its rules of business and procedure.

16. **Block Library Committee:**
   a. There shall be Block Library Committee for each block Library and its constitution and functions shall be such as may be laid down in rules framed by the District Library concerned.
   b. The Block Library Committee shall subject to the approval of the District Library Committee concerned frame its rules of business and procedure.

17. **Panchayat Library Committee:**
   a. There shall be a panchayat library committee for each village Library and its constitution and functions shall be such as may be laid down in rules framed by the District Library Committee concerned.
   b. The Panchayat Library Committee shall subject to the approval of the District Library Committee concerned frame its rules of business and procedure.

18. **Employees of the Public Library:** The State Government shall create cadres for Public Library employees similar to those of Government Department and lay down the qualification and the other terms and condition of service for those cadres.

19. **Public Library Fund:**
   a. The State Library Fund.
h. The District Librarian Fund.
c. The City or Town or Block or Village Librarian Fund.
d. These shall be credited into the state Librarian Fund.
e. Any amount received as gift, contribution or endowment for the development of libraries.
f. These shall be credited into a District Librarian Fund the amount transferred to it from the state librarian fund the contribution to the District Librarian Fund being in no case less than the total amount of librarian cess collected in the District.
g. Any special grant.
h. The amount collected under the rules of the District Librarian.
i. Any amount received as gift, contribution or endowment for the development of Libraries.
j. Any interest on fixed deposit or other deposit.

20. Library Cess: Every local body in a district may levy in its area a librarian cess in the form of a surcharge on property tax and house tax at such rate as the Government may decide from time to time.

21. Power of Committee to borrow:

a. A Block, Town, Village librarian committee may borrow money on the security of its librarian fund for purchasing land, building, furniture and fixtures to be used for librarian purposes with the approval of District Librarian Committee.
b. A district or City Librarian Committee may borrow money for the same purpose with the approval of the authority who shall also approve the amount.

22. Framing of rules and regulations: The authorities shall prepare model bye-laws, rules and regulations regarding the administration of librarian service in the state.

23. State Library Association: The authority shall recognize only one State Librarian association as co-operative Institution, the constitution of which shall be approved by the authority.


Conclusion

Every rule made under this section shall be laid as soon as may be after it is made before the House of the State Legislative while it is in session for a total period of ten days which may be comprised in one session or in two or more successive sessions and if before the expiry of the session in which it is laid or the successive session aforesaid the house agrees in making any modification in the rules or the House agrees that the rule should not be made, the rule shall thereafter have effect as the case.

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Role of ICT in Digital Content Creation for Transformation of Agricultural University Libraries in India

Suman Lata Yadav; Sunil Goria & Seema Yadav

Abstract
In the past decade, many information and communication technology (ICT) projects in Indian agricultural libraries have emerged, either substituting or supplementing services by providing different libraries with access to agricultural information. ICTs have the potential to reach many users with timely and accessible content. But the content that the ICTs deliver has more relevance if it is context specific, as this improves the quality of the information, which can have important impacts on library management. The digitization of content is influenced by how the ICT projects access, assess, apply, and deliver content. Digital technologies, digitization and online information resources have made fundamental changes in teaching and research of agricultural sciences in India. The most important component of a digital library is its digital collection. The information content of a digital resource includes any electronic media, database of journals, articles and abstracts etc. Agricultural universities libraries have taken up as a challenge of modernization of libraries to develop the machine readable catalogues and machine readable full text databases to provide the accessibility to full text document to the users. Agricultural information users are agricultural scientist, faculty researchers, students, extension workers, farmers and policy-makers. Another important aspect of information resource is library digitization. Digitization is the answer to high cost involvement in the duplication of the resources in all the agricultural libraries. In this paper, emphasis is given on the role of ICT for digitization of agricultural university libraries in India.

Keywords
Information and Communication Technology, Agricultural Universities Libraries, Digital Libraries, Digital Content

Introduction
With the advancement in IT (Information Technology), Information and Communication Technology (ICT) have opened new ways to access essential content and provide new services and scholarly information. ICTs have made fast changes in the structure and
functioning of the library and information centers in the present era of information environment. It is well established that libraries all over the world including India are undergoing transformation, especially owing to the development in information and communication technologies. Traditional libraries are changing to digital libraries and new libraries that are being set-up are increasingly of the digital kind and have been transformed into electronic and virtual learning system (Kaur and Singh, 2005). As a result, there is widespread interest and consequently, a lot of research and development activities are being carried out in this area world over. In India, a number of institutions are also in the process of setting up digital libraries and many scholars and practitioners are conducting research on digital libraries (Srivastava and Saxena, 2004).

Libraries, being storehouses of data and information expressed in a fixed form such as books and journals, have always availed of the advantages provided by technological innovations in storing and dissemination of knowledge. The ICT and digital technology directly affects the working of libraries in many ways. The most important feature of such a digitization procedure is to create digital contents because without creating contents in digital forms, libraries will not be able to provide services in electronic formats. It brings the resources nearer to the benefit of users. The digitized information can be used in several ways to overcome the barriers of communication. It is clear that some libraries have been developed themselves in digitized form in India and world as well (Arumugam et al., 2005).

Development of Digital Libraries

All the information is stored in digital form and can be easily accessible to users with the help of local networks or computers in a digital library. In other aspects, a digital library is viewed as an electronic form of information and the complete information is available to users in digital form and we can term this paperless library (Bearman, 2007). A digital library has been defined by Digital Library Foundaton (DLF) (1999) as “Digital libraries are organizations that provide the resources, including the specialized staff to select, structure, offer intellectual access to interpret, distribute, preserve the integrity of and ensure the persistence over time of collection of digital works so that they are readily and economically available for users”.

In other terms, a digital library provides digital materials and services to its users. Digital materials are different items that are stored, processed and transferred via secondary devices and networks. Among the LIS professionals, the terminology ‘digital libraries’ refers to different things, such as digitization, access to consortia resources, creation of institutional repositories, automated library services and library websites (Anuradha, 2007). However, to generalize the term ‘digital libraries’ for any ICT-based activity or resource in the library is inappropriate.

Digital libraries may be considered as center of vast amount of information available in digital forms in different formats access through the use of Information and Communication Technology.

ICT revolution contributes a lot and easily affordable mode in the growth of exchange is the single most important factor in the growth of digital library. The ease of ICT has made a significant shift in the information use paradigm from the need to know basis to that of information being available when and where you need it. It also helps to avoid
massive duplication of information and has shrunk the world for one to imagine a global and virtual library. The global network of telecommunication provides a very cost-effective global library (Anuradha, 2007).

Digital Contents Creation

A library and information professional provides different types of information services from the available library collection and these services may be contents created in separate shape and size suitable for users. The amount of information is expanding in an exponential manner due to this reason, it is difficult to find the specific information at specific place; therefore, creation of digital contents is an integral part of any library resources. These contents may help to support teachers and researchers of a particular organization or any educational institutions (Arora, 2001). Large budget is required to create and effective management of digital contents. It is therefore essential to collect different types of information on different aspects of the digital contents. Then these contents need to be stored in the form of files and database. The contents already created need to be navigated through the web pages with the related links to make the contents to be accessed and distributed through a network system so that it can be accessed by users (Bearman, 2007). In the present time, information sources are readily available in digital form; therefore, it is obvious that any digital library would have various types of digital formats and sources. Different components of ICT may contribute to the making of a digital library in most of the libraries of agricultural universities in India. In addition to the network infrastructure, a variety of digital collections, these include e-journals, in-house born digital collections such as thesis, scanned books, CD-ROM databases, the library OPAC, and courseware. In the early years of digital library development in India, there have been problems related to high infrastructural costs, lack of experience and expertise in creating digital libraries (Hasan, N., 2012). However, over the years, ICT infrastructural costs are decreasing and expertise and experience have been gained in handling digital library software especially in using open source software such as DSpace and GSDL. In this context, the contents of digital libraries have considered significance, especially the source of this content.

Status of Digital Libraries in Agricultural Universities of India

Digital library developments in India began rather slowly in mid-1990s and have gathered momentum at the turn of the 21st century. Digital library creation has started long back in India. However, looking at the growing interest shown by libraries and information centers in India, it is easy to say that digital library development is on a growth path, albeit a slow one. Amidst this growth and development, we need to keep in mind the emerging digital divide in India highlighted many library professionals (Arora, 2004). Libraries of S&T organizations have developed a number of digital library initiatives. This may have to do with the fact that agricultural university libraries have greater economic and human resources by far to undertake digitization programme. Even in the library automation era, it was the agricultural universities libraries that took the initiatives of digitization.

Among other things, a few digital library initiatives but it is uncommon that it checks the permeating “digital determinism” and “digital divide” requires adopting various means. Social and economic and financial issues that need to be considered to bridge the digital
divide between rural and urban populations in order to ensure sustainable development of India. These are the problems of limiting budget; high initial and recurring expenditures; social and economic problems, such as illiteracy, population growth, and poor health conditions; inadequacy of resources for development programmes; and weak infrastructure (Arora, 2003). Keeping these facts in mind, there is an urgent need to initiate digitization activities in agricultural university libraries in India and also to speed up the creation of digital libraries in other related areas. In the present era, there is great amount of interest in creating digital libraries (Arora, 2004). The creators of digital libraries have to be knowledgeable about all the encompassing aspects involved in digital library creation and management. There is an immediate need to start training programmes for library professionals towards creation and management of digital libraries and is essential to educate and impart skill sets (Arora, 2003).

Digitization Initiation of Indian Agricultural Libraries

Digitization is defined as the process of transferring print media into a computer readable format and organizing and presenting that data in a way that is used by the readers. The term digitization refers to the electronic process of converting a document in a non-digital medium into digital form of storage, retrieval and transmission. Another definition of digitization is the process of translating a piece of information such as book, sound recording, picture and video into bits. Digitization is the representation of the physical image of the document created by means of a scanner preserved on a binary format on an electronic medium and then interpreted by a computer to be read in screen or printed out in a paper (Mahapatra, 2012). Digitization is done not only for preservation or archival purposes but also, rather more, on account of the other advantages and users of the same. A digitized work can easily be transmitted to members of a library through the web. Loaning between the libraries is another way to minimize the costs and making accessible to members of one library the resources of another library (Mahesh and Mittal, 2008).

Indian Council of Agricultural Research (ICAR) has taken initiative to strengthen and improve of Agricultural universities and institutions libraries of India to provide efficient library and information services for agricultural scientists and students. All the libraries under ICAR started computerization during AHRD project. However with the NATP project support all the central libraries have been automated. A large number of CD-ROM databases are subscribed by libraries of Agricultural universities. They are also providing free of cost internet access to their users and all the libraries has been linked to inter and intra networking for efficient use of library resources for their users. These libraries are also subscribing to CAB Abstracts, VET-CD, AGRICOLA and AGRIS. Such libraries are also act as collaborators between agricultural scientists and information scientists (Mahapatra, 2012).

To revitalize the agricultural information environment, ICAR has taken an important initiative to develop an AGRIS under NARS projects. The basic purpose of this project is to provide better working conditions of libraries and to strengthen the creation of digital contents and databases. Another mission of the project is to transform traditional libraries to digital libraries. Initiative has already been taken up by ICAR to adopt ICT to promote and facilitate the development of digitization of information resources of agriculture universities libraries (http://www.icar.org.in, 2015).
ICAR is a major nodal agency for monitoring agriculture-related research work, therefore, taken good step in creating the digital contents of research works in agricultural subjects in India. ICAR has developed a common platform in which all the Ph.D. thesis submitted to agricultural universities and research institutions agreed to digitize the contents and will be used in a networked environment. Under the NAIP project CCS Agriculture University, Hisar has initiated to digitize the Ph.D. thesis available in all agricultural universities and institutions of India (http://202.141.47.8:80/HAU/thesis.htm.1, 2015). In the first phase, all the theses available in libraries of agricultural universities and institution were scanned and data were compiled and edited by Nehru Library. It is expected that till date around 8000 theses have already been entered into the database for use by end users. Each participating library is issued an ID number and password for browsing and retrieval of theses. The metadata of thesis is confined to the bibliographical details and an abstract. To search a particular document, different search options like author, title, subject, institution and supervisor are available with the database. Advance search may also be performed by using like multiple key words, free text searches etc. to make the database accessible. Users of Krishi Prabha can access the required content by using ID number and password issued to them or through IP address provided. This project has been found successful for digital content creation of the agricultural research data generated throughout India (Mahapatra, 2012).

One more project under National Agriculture Innovation Project (NAIP) has been assigned for the development of agricultural library network in India for digitization, content creation, knowledge management and strengthening libraries of agricultural universities and institutions and formation of e-journal consortium of agricultural sciences. For the purpose of digitization and content creation, ICAR has taken the decision to develop the digitized version of books and other collections in libraries of NARS system. Consortium partners for this project were IARI, New Delhi, G.B. Pant University of Agriculture and Technology, Pantnagar; ANGARU, Hyderabad, CCS HAU, Hisar and CIFE Mumbai libraries. The title of this project was “e-Granth strengthening of digital librarianship and information management” with the cost INR 8.61 crores and duration was 36 months under NARS. Project had the following objectives (i) to create OPAC under Indian Agricultural Research Group catalogue of all the partner library resources with OCLC partnership. And (ii) to digitize important institutional repositories/resources of leading NARS libraries including rare books and old journals and make them open access (http://www.egra.in, 2015).

E-resources Consortium Development in Agricultural Universities Libraries

The consortium has collected around 3000 journals from Elsevier, CSIRO, Taylor & Francis, Annual Reviews and Open J-Gate publishers for composition of the database. Consortium has a total number of 126 members and all are agricultural universities and institutions libraries. All the member libraries issued an IP address and password to log on to the CeRA database for access and data retrieval. Users are free to choose simple or advance searching mode from the home page. Users can browse the journals by subject, title and publisher in alphabetical order (http://www.cera.jcc.in, 2015). By registering the name of user, they may get the alert of his interest after creating the profile. Participating libraries also provide the hard copy of the article at their respective institution’s cost to the users. E-consortium in agriculture is working satisfactorily among all the participating universities and institutions.
Problems Faced by Indian Libraries in Digitization Work

India is considered the second most culturally, linguistically and genetically diverse geographical country after the African continent. According to the Census of India, there are a total of 122 languages, out of which 22 languages are included in the Eighth Schedule to the Constitution of India. Clearly, India has rich information resources in languages other than English and at present, it is seen that the digital library activities are more focused on information resources in the English language (Arora, 2004). As digitization initiatives have picked up momentum in the country, there is a need to make uniform national policies and procedures for creation and management of digital libraries. However, there has been no clear policy on creation and management of digital libraries in India.

To facilitate policy makers, there is need to conduct studies related to chart out standardization requirements, examine interoperability and copyright issues, and outline classification of documents and other related issues (Jain and Babbar, 2006). It is essential to expand digital library activities to include Indian language documents and consequently, technologies need to be developed to integrate such resources consistently with existing digital libraries or newly created digital libraries in multiple languages in different agricultural universities in India.

Conclusions

Digital library development in India has been ignored from last several years that are a serious issue to be addressed. Many Indian libraries including agricultural universities libraries have taken up the challenge of modernization to develop digital contents and digitization for efficient use of library resources. Although many agricultural universities libraries tried to digitize their books and journals like G.B. Pant University of Agriculture & Technology, Pantnagar and trying to provide efficient digital services to their users. Even among these libraries, focus has been on developing digital libraries without focus on issues such as education and training, copyright, management and promotion (marketing). There is a need to amend copyright legislation to suit the electronic environment. Other important areas on which Indian studies have been limited or totally missing are digital rights management, digital library security, content management, business and pricing model and policy studies. Surprisingly pricing model does not exist in India. With several digital library initiatives reported, it will be useful to have a survey of the digital libraries in India to understand the present status of the digital library initiatives. The present agricultural universities libraries have developed the mechanism of contents creation and management of digital information up to some extent. Complete information is available in the networked environment.

Indian Council of Agricultural Research has already taken an initiative to digitize the agricultural book collection through e-Granth and Ph.D. thesis of all the agriculture universities and institutions through the project KrishiPrabha. A consortium of e-resources in agriculture (CeRA) has already been launched successfully. Efforts are also being made to develop institutional repositories in different agricultural universities and related
 institute. All these initiatives became possible in converting the print resources into digital. It is because digital content creation is must to provide efficient services to its users. It is cleared that Information and Communication Technology playing an important role in transforming the agricultural university libraries of India.

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Learning Resources and Services of a State Agricultural University Library of India: A Case Study

_Sunil Goria_

Abstract
Established in 1960, University Library of G.B. University of Agriculture and Technology, Pantnagar, Uttarakhand (India) is one of the leading libraries among agricultural libraries of India. In the paper, the author discusses library resources and services of the library in print as well as digital environment from the year 2001-02 to 2012-13.

Keywords
Agriculture Library, University Library, India, Library Resources, Library Services

Introduction
India is agriculture-based country where about 68% (830 million approximately) Indian population is dependent on agriculture directly or indirectly for their livelihood. Indian Council of Agricultural Research (ICAR) plans, conducts and promotes research, education and training and transfer of technology for advancement of agricultural sciences in India. With 100 ICAR institutes and 70 agricultural universities/state agricultural universities (SAU), Indian National Agricultural Education and Research System (NAERS) is one of the largest national agricultural research systems in the world (Indian Council of Agricultural Research, 2015). The first agricultural university of India, UP Agricultural University, Pantnagar, Uttarakhand was dedicated to the Nation by the first Prime Minister of India Pt. Jawaharlal Nehru on 17 November 1960. In 1972, the University was renamed as Govind Ballabh Pant University of Agriculture and Technology (GBPUAT) now in Uttarakhand state. The establishment of this university brought about a revolution in agricultural education, research and extension. The university has been eulogized by Nobel Laureate Dr. Norman E. Borlaug as the ‘Harbinger of Green Revolution’. The university received the prestigious National level “Sardar Patel Outstanding ICAR Institution Award”, twice for the years 1997 and 2005 (G.B. Pant University of Agriculture and Technology, 2015). The knowledge generation and transmission activities of the university depend on learning resources (i.e. information resources) and services to support the core functions of
teaching, research and extension.

The University Librar y of GBPUAT was also established in 1960 with the establishm ent of the University. The Librar y has spacious reading accommodation with every shelving stack area, where the readers can consult publications under open access system. The reading capacity of librar y is abo ut 500 users at a time. The Librar y has a total area of 8742 meter², out of which 1159 meter² is covered by reading halls, 2370 meter² is covered by stack and the remaining space is used for various sections of Librar y along with office (University Librar y, 2015). The Librar y has been effectively sup porting the teaching, research and extension activities of the University by making all efforts to acquire process and organize scientific and technical literatur e for the readers. The Librar y sup ports the University activities by providing learr ing resources, high qua lity services and professional expertise to enable the effective discover y and use of inform ation.

In the age of Internet and digital information, growth of librar y and information services is running parallel with the growth of web technology. Online information sources are increasing now-a-day. New methods of teaching and learning are developing whereby online courses are emerging. The academic commun ity is depending more and more on online sources. All these circumstances have forced the university librar y to adopt state-of-art information communication technology for information services. Now libraries have been moving from a single librar y to a network of libraries; from one collection to distributed collections; from the catalogue interface to multiple interfaces. Today's students are quickly using Internet searching. University librar y is continuously striving to fulfill the needs of its vast campus incorporating latest information and Communication Technology. The information seeking behavior of the academic community for teaching and research now expects that the contents should reach to them at their desktops through Intranet or Internet. The services of the librar y have been expanded with expectations of the academic community and it cont ributes significantly to the learning process. Librar y is shouldering newer responsibilities in higher education. Quality of librar y services is updated largely with latest technology to sup port learning, teaching, research and extension activities in the university.

Librar y learning resources

The Librar y has highly specialized research publications covering the entire range of human intellectual endeavour in agricultural sciences and technology such as agriculture, veterinary science, animal husbandry, home science, fisheries, basic sciences and humanities and technology. Presently the librar y has about 4.0 lakhs volumes ranges from textbooks to advanced level monographs, reviews, bound journals, encyclopedias, handbook s, directories, reprints, dissertations and subscribes 300 printed current journals. Librar y is now procuring e-resources, like CD-RO M based bibliographical Databases (i.e. CABI, AGRIS, FSTA, BIOSIS, AGRICOLA, CO MPEND EX etc), and access to more than 5000 online full text journals (i.e. Springer, Science Direct, Taylor & Francis, CSRI O, IEEE, ASCE, ASME, and Annual Reviews, EBSCO etc.). The Koha software has been used for the librar y automation. Librar y catalogue is available in digital for mat as OPAC and web OPAC. D -space Digital Repository is also established which has rare digitized books and thesis etc. The librar y has developed its website (http://202.141.116.194 ) to integrate all the online resources for the benefit of its user to use (University Librar y, 2015). The data about learning resources
and services of the library have been collected from the annual reports of the university library, website of the library and other documentary sources (G.B. Pant University of Agriculture and Technology, 2011, 2012, 2013; University Library, 2010, 2015). The library collection is growing at an average approximate rate of 4,000 volumes per year. The growth of total library collection can be visualized from Table-1.

**Table-1.** Library collection during 2001-02 to 2012-13

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>343685</td>
</tr>
<tr>
<td>2002-03</td>
<td>347373</td>
</tr>
<tr>
<td>2003-04</td>
<td>352953</td>
</tr>
<tr>
<td>2004-05</td>
<td>360348</td>
</tr>
<tr>
<td>2005-06</td>
<td>366996</td>
</tr>
<tr>
<td>2006-07</td>
<td>375875</td>
</tr>
<tr>
<td>2007-08</td>
<td>381708</td>
</tr>
<tr>
<td>2008-09</td>
<td>386075</td>
</tr>
<tr>
<td>2009-10</td>
<td>389427</td>
</tr>
<tr>
<td>2010-11</td>
<td>394547</td>
</tr>
<tr>
<td>2011-12</td>
<td>397834</td>
</tr>
<tr>
<td>2012-13</td>
<td>400939</td>
</tr>
</tbody>
</table>

**Other instructional material:** A large number of topo-sheets and various types of globes, relief maps and wall maps, special atlases and microfilms are also available for use of the scientists and students. A microfilm reader equipped with photocopying facility is also available.

**Network membership:** Library is the member of DELNET (Developing Library Network), CeRA (Consortium for e-Resources in Agriculture) and IND EST (Indian National Digital Library in Engineering Sciences and Technology) consortia to face the challenges of providing contents to the users under economic pressures for supporting their needs for research and learning.

**Library Services:** Library offers a wide range of service from reference to electronic information services including:

- **Opac (Online Public Access Catalogue)/Web-Opac:** To consult this huge literature web-OPAC the public catalogue is available from where the readers can know whether a particular publication is available in the library by approaching through author, title and subject. The Koha has very useful features like bookshelf browsing, book jacket link through Google etc. for users in OPAC. Ready reference sources are displayed on the side of reference counter.

- **Bibliographic Database and Full text online journal search service:** Prominent databases like AGRIS, AGRICOLA, FSTA, BIOSIS, COMPENDEX Plus and CAB-CDs are searched with the help of CD-Server. The references are provided to the scientists/students in soft copy. Online journals search facilities have been provided to the departments and colleges of the university in Intranet as well as in the university library. Use of CD-ROM databases and Internet are shown in Table-2.
Next Generation Libraries: Issues and Challenges

**Table-2.** CD-ROM Databases Users during 2001-02 to 2012-13.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of CD-ROM Database Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>2520</td>
</tr>
<tr>
<td>2002-03</td>
<td>2397</td>
</tr>
<tr>
<td>2003-04</td>
<td>2370</td>
</tr>
<tr>
<td>2004-05</td>
<td>2657</td>
</tr>
<tr>
<td>2005-06</td>
<td>3452</td>
</tr>
<tr>
<td>2006-07</td>
<td>3052</td>
</tr>
<tr>
<td>2007-08</td>
<td>2572</td>
</tr>
<tr>
<td>2008-09</td>
<td>2347</td>
</tr>
<tr>
<td>2009-10</td>
<td>3663</td>
</tr>
<tr>
<td>2010-11</td>
<td>3830</td>
</tr>
<tr>
<td>2011-12</td>
<td>3912</td>
</tr>
<tr>
<td>2012-13</td>
<td>4128</td>
</tr>
</tbody>
</table>

**Indian Agricultural Index:** All Indian agricultural journals subscribed in library (i.e. about 300) indexed and published in the form of Indian Agricultural Index bi-monthly service in hard copy. The service is brought out in digital form through WINISIS and GENISIS software for the benefit of the users.

**Circulation of Publications:** Circulation Section enrolls members and manages issue and return of books and journals. Every UG students can borrow maximum four books and PG students’ seven books from the library. Usually books are issued for a fortnight but books directly related to the course taught by teachers are issued to them for a full semester, if so desired. Table-3 contains the data on the year-wise membership and the number of books issued.

**Table-3.** No. of membership and publications issued during 2001-02 to 2012-13.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of library members</th>
<th>No. Books Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>5630</td>
<td>66632</td>
</tr>
<tr>
<td>2002-03</td>
<td>5724</td>
<td>53839</td>
</tr>
<tr>
<td>2003-04</td>
<td>5716</td>
<td>52943</td>
</tr>
<tr>
<td>2004-05</td>
<td>5807</td>
<td>48600</td>
</tr>
<tr>
<td>2005-06</td>
<td>5469</td>
<td>37433</td>
</tr>
<tr>
<td>2006-07</td>
<td>5568</td>
<td>47040</td>
</tr>
<tr>
<td>2007-08</td>
<td>5740</td>
<td>46788</td>
</tr>
<tr>
<td>2008-09</td>
<td>6159</td>
<td>48195</td>
</tr>
<tr>
<td>2009-10</td>
<td>6371</td>
<td>53826</td>
</tr>
<tr>
<td>2010-11</td>
<td>6050</td>
<td>50791</td>
</tr>
<tr>
<td>2011-12</td>
<td>5814</td>
<td>68854</td>
</tr>
<tr>
<td>2012-13</td>
<td>6003</td>
<td>60226</td>
</tr>
</tbody>
</table>

**Rental Textbook Services:** Rental Section of the Library has about 50,000 multiple copies of various prescribed textbooks. Students borrow textbooks from this section based on their opted courses for the use during a semester. A year-wise summary of this service is presented in Table-4.
Learning Resources and Services of a State Agricultural University Library of India: ... |


<table>
<thead>
<tr>
<th>Year</th>
<th>No. Book Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>14850</td>
</tr>
<tr>
<td>2002-03</td>
<td>12792</td>
</tr>
<tr>
<td>2003-04</td>
<td>12815</td>
</tr>
<tr>
<td>2004-05</td>
<td>12771</td>
</tr>
<tr>
<td>2005-06</td>
<td>13212</td>
</tr>
<tr>
<td>2006-07</td>
<td>13910</td>
</tr>
<tr>
<td>2007-08</td>
<td>15249</td>
</tr>
<tr>
<td>2008-09</td>
<td>16444</td>
</tr>
<tr>
<td>2009-10</td>
<td>19902</td>
</tr>
<tr>
<td>2010-11</td>
<td>17126</td>
</tr>
<tr>
<td>2011-12</td>
<td>12998</td>
</tr>
<tr>
<td>2012-13</td>
<td>25015</td>
</tr>
</tbody>
</table>

**Book Bank**: Book Bank stocks copies of prescribed textbooks, which are issued free of charge to SC/ST students. The Social Welfare Department of Uttarakhand funds this scheme.

**Inter-library loan**: The demand of inter-library loans for desired documents is met by the photocopy service. Photocopy documents procured from outside libraries, and the documents supplied against the demand to the outside libraries through photocopy from our own collection. Under CeRA, DD R (Document Delivery Request) service have been provided to the users of NARES of India.

**Photocopy service**: Library has been providing photocopy service to the reader which is operating through private mode.

**Users awareness training**: The library has been organizing trainings frequently for its users on effective use of e-Resources for increasing use of e-Resources as well as print resources.

**User Education**: Under users education programme, the Library conducts one-credit course “Storage and Retrieval of Scientific Information (BHS-610)” for postgraduate students of the university. It is a comprehensive course covering all aspects of library use, scientific literature and its bibliographical control, modern techniques of handling scientific information in state-of-art ICT environment.

**Conclusion**

Information and Communication Technologies (ICT) have been changed at very fast pace. Development of ICT has great impact on libraries all over the world. Internationally, academic libraries have been adapting new web technologies for providing various online information services. The University Library, Pantnagar has been adapting new technologies strategically for providing web based information services along with traditional services to the library users. The university library has also initiated web 2.0 information services for library users. The library needs more and more web-based services for maximum utilization of library learning resources.
References

Open Access Institutional Repository: Issues and Challenges

Surjeet Kumar; Rekha Rani & Vikas Singh

Abstract

Over the past few years, libraries have witnessed tremendous development in the field of information and communication technology. Scholarly communication has opened the new way of publishing. This paper deals with scholarly communication, awareness of Open Access Institutional Repository and various issues related to usage, design and development of IR. The concept of open access institutional repository with technical consideration to follow in order to usages, design and development of institutional repository, various issues and challenges comes to set up the institutional repository. Some issues and challenges have been focused in this paper which are as follows i.e. technical issues, policies issues, cost consideration, copyright issues, advocacy, sustainability etc.

Keywords

Open Access, Scholarly Communication, Institutional Repository, Technical Issues

Introduction

The development of technology has brought enormous opportunities to bring the results of research primarily to all through digital communication – anyone, anywhere and anytime. The impact of convergence of tradition and technology brings the facility of accessing information conveniently and instantaneously (Ghosh, 2006). Lawrence says, “Scientists now have almost instant access to large and rapidly increasing amount of information that previously trips to the library, inter-library loan delay or substantial effort in locating the source” (Steve Lawrence, 2001).

Open Access

Open-access publishing is the provision of free online access to quality scholarly material that is available on “open domain”, and not having any restriction of copyright. Although, the open access movement began before the advent of the Web, it became more widespread with the adoption of Web access in scholarly activities. The movement spread to all disciplines. There are many different models of open access publishing, for example sponsored
OA, OA supported by auth or fees, and embargoed OA. The intention of all such models is to provide access to scholarly contents to clients. It is, however, assumed as one of the useful media to share research and get wide visibility from around the world. Some countries like the UK and the US have made better progress, whereas many other countries are lagging behind (Mukherjee, 2012).

**Definition of Open Access:** There are many varieties of definition of “open access” and the concept is still evolving; however, one of the classic and important definition is of Budapest Open Access Initiative.

The Budapest Open Access Initiative (BOAI): “By ‘open access’ to this literature” we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, with out financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give author control over the integrity of their work and the right to be properly acknowledged and cited.

**Scholarly Communication**

In the light of emerging trends in digital scholarly communication, open access institutional repositories play an important role in the preservation and dissemination of institutional research outputs which in turn becomes a constituent part of a global research output. Although publication by faculty members in scholarly journals could add impact to the prestige of the institutions, they are associated with an institutional repository which stands to generate greater impact by catalyzing research outputs generated by the institution’s researchers, and thus, serving as a much better and simpler metrics for gauging the quality of the institution’s academic scholarship, productivity and prestige.

**Definition of Scholarly Communication:** “Scholarly communications is the creation, transformation, dissemination and preservation of knowledge related to teaching, research and scholarly endeavors. Among the many scholarly communications issues include author rights, the peer review process, the economics of scholarly resources, new models of publishing (including open access and institutional repositories), rights and access to federally funded research, and preservation of intellectual assets” (Bernard).

**Institutional Repository**

An institutional Repository is a digital collection of an institution’s intellectual output. Institution repositories are a key infrastructure component in the digital environment because they provide better access to our digital assets and they ensure that digital objects are managed appropriately.

**Definition of Institutional Repository:** “A university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members”. He further elaborates that “it is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution.”
Issues and Challenge of an Institutional Repository

This section briefly discusses about the various issues and challenges. However, there are many technical, social, financial, cultural and expertise issues and challenges in developing the institutional repositories. These issues and challenges are very important for any institutions, universities and organization to design and development of IRs. Which are as follows:

Contents: According to Hirwade & Hirwade, (2006). An institutional repository as compared with traditional print publishing, offers the ability to store and provide access to as much wider variety of materials like:

- Eprint-Pre-prints and post-prints
- Research reports and working papers
- Conference papers, Proceedings and posters, Book reviews
- Teaching materials
- Student’s assignments / projects
- Electronic thesis and dissertations (ETD)
- Research Projects
- Audio / video materials
- Photographs/images
- Convocation address
- Programmes/softwares
- Annual reports/manuscripts/maps
- Newspaper clippings/articles
- Profiles of faculty members / administrative staff / scientists etc.

Software: According to Parthasarathi (2010). As per the distribution policy, the whole array of software may be categorized into three groups.

a. Commercial software—(i) Only binary code is available against fees (ii) As source code is not available, customization is not possible. (iii) License agreement allows only the use of software for a definite period and it is mandatory.
b. Freeware—(i) Only binary code is available without any cost (ii) As source code is not available, customization is not possible. (iii) License agreement allows to use, change, modify and distribution of software for indefinite period and it is mandatory.
c. Open Sources software—(i) Source code and binary codes are available at free of cost (ii) As source code is available, extensive customization is possible and allowed (iii) License agreement allows to use, change, modify and distribution of software for indefinite period and it is mandatory.

In this study he discussed on open source software (since 1999) are available for developing institutional repositories.

Chan, L. (2004) another impetus for the recent growth of IRs is the easy availability of open-source software applications for setting up repositories and support from professional organizations. The highly distributed nature of resources scattered across the World Wide Web has made difficult to locate the relevant information. The interoperability standard developed by Open Access Initiative (OAI) has made these institutional repositories to interoperable to form a seamless global repository. The Open Archive Initiative-Protocol for
Metadata Harvesting (OAI-PMH) is designed to harvest metadata and associated resources that are distributed across different OAI-compliant servers. It has built-in support for basic Dublin Core metadata, standard used in digital-resource cataloguing. (http://dublincore.org).

Some of the major softwares are given below.

**Open Source Institutional Repository Software:** Some of the major open source softwares which are as under:

**DSpace:** DSpace is developed by MIT and HP Lab in November 2002. DSpace is an open source repository software package typically used for creating open access repositories for scholarly and/or published digital content. The DSpace repository software serves a specific need as a digital archives system, focused on the long-term storage, access and preservation of digital content (www.dspace.org).

**EPrints:** EPrints is a free and open-source software package for building open access repositories that are compliant with the Open Archives Initiative Protocol for Metadata Harvesting. It is primarily used for institutional repositories and scientific journals. EPrints has been developed at the University of Southampton School of Electronics and Computer Science (2001) and released under a GPL license (www.eprints.org).

**Greenstone:** Greenstone is a suite of software for building and distributing digital library collections. It provides a new way of organizing information and publishing it on the Internet or on CD-ROM. Greenstone is produced by the New Zealand Digital Library Project at the University of Waikato, and developed and distributed in collaboration with UNESCO and the Humane Info NGO. It is open-source software under the terms of the GNU General Public License (www.greenstone.org).

**FEDORA (or Flexible Extensible Digital Object Repository Architecture):** FEDORA is a digital asset management (DAM) architecture upon which institutional repositories, digital archives, and digital library systems might be built. FEDORA is developed by Virginiacore and Corel with funding from Mellon. FEDORA is the underlying architecture for a digital repository, and it is not a complete management, indexing, discovery, and delivery application. It is a modular architecture built on the principle that interoperability and extensibility are best achieved by the integration of data, interfaces, and mechanisms (i.e., executable programs) as clearly defined modules (www.fedora-commons.org).

**Metadata:** Metadata may be defined as descriptive documentation of the contents of the repository. Metadata preparation and conformance to metadata standards is critical for digital repositories because of the important role they play in search and discovery, interoperability, and meaningful preservation capabilities. This service function demands careful attention in any institutional repository programme.

**Metadata harvesting:** Carpenter, L. (2004) focus on the sufficiency and quality of harvested metadata is the sine qua non for aggregator services. In this, however, they are again almost totally dependent on the data provider repositories that they harvest from. Unfortunately, studies of metadata usage in OAI contexts suggest that quality varies greatly, leading to ‘collisions’ between metadata formats and problems with authority control and de-duplication. Safeguarding the quality of metadata is fundamentally the role of the data provider repositories.

**Interoperability and extensibility:** A system’s ability to interface with other systems as well as its ability to expand and add new components — are also important factors in evaluating the merits of a digital asset management system. The OAIS reference model and interoperability standards and protocols provide helpful guides to evaluating the strengths.
and weaknesses of the functionality, interoperability, and extensibility of various digital asset management systems.

**Sustainability**: While aggregator services do not have content that requires long-term management and curation, they do have a need for organizational and financial stability. Service providers mediate between content providers and their users and, as such, their sustainability will depend on whether they provide a service that is required and how well they perform this in a potentially competitive market. As services, however, they can evolve over time, both with regard to the content they harvest and the added-value services they provide.

Many service provider initiatives are funded on a project basis, e.g. services demonstrating the added value that can be provided by metadata harvesting using the OAI protocol. In the future, there is likely to be a ‘mixed economy’ of service providers, with some supported by public funding while others will be provided on a commercial or quasi-commercial basis.

**Preservation**: The issue about addressing long-term access to content is very strong in the literature and preservation is perceived as one of the key issues that can determine the success of IR. Clearly preservation requires proactive management, long-term planning and huge efforts that can’t be faced by single institutional ions, as Corvine, Penfield and Barton et al., say, thus strategies must be organized and funded only on an organisational-based strategy. Stanescu also remarks how implementing models for achieving preservation must be a priority: he claims that preservation plans should be based on objective analysis of risk trends (for file types, software’s and hardware) rather than on individuals’ opinions and experiences (Stanescu, 2005).

**Money/Cost Considerations**: Crow focused on his study how implementations, projects and initiatives have been diverse, making difficult to outline a universal economic model: costs for developing and running can vary from no cost (for institutional resources from other previous services), to hundreds of thousands of dollars (for institutional resources which invest in technical and staff resources). IRs require a huge effort, both in the management/policy system (choosing and implementing content management/recruitment, staff to dedicate, training staff, making the IR and facing licensing agreements), and in the technical environment (choosing metadata, infrastructure, software, customization) (Crow, 2002).

**Man/Staffing**: Robinson (2007) identified staff and skill requirements for developing repository such as managing the repository’s budget, services, familiarity with software, ability to customize software, preservation and metadata etc.

Support for IR staff can come in many forms. UKCoRR (http://ukcor.org) is a community of IR staff and managers from across the United Kingdom that provides a forum for IR workers to discuss ideas, frustrations, and possible solutions. Forming a local chapter of this type of sup port organization can provide local IR workers with some of the same benefits. Adopting a consortium or federated approach to an IR (sharing one IR between several institutions) could help to build this type of peer-to-peer support network among IR staff. Organizations like RSP (www.rsp.ac.uk), the International Network for the Availability of Scientific Publications (I NASP, www.inasp.info), and/or Aptivate (www.aptivate.org) can also provide support and training in areas such as marketing to stakeholders, network optimization, and software support.

**Policies**: Barton & Waters, 2004 discusses on the institutional
repositories need to research and write policies and regulations for their collections. The IR needs to decide: Who is allowed to deposit materials; What types of digital documents can be deposited (e.g. Pre-prints, post-prints, working papers, thesis, chapters, datasets, etc.); What digital formats will be accepted; Quality assurance procedures; Preservation procedures; Metadata quality standards; Restricting Access; Content guidelines for submission and organisation.

Repositories need policies. Those that operate without any formal endorsement from the organisation tend to flounder. A repository policy may cover a number of issues, the most important being what the organisation requires of authors and what the repository is going to house. More than half of the repositories surveyed have a formal written procedure stating what types of material and what file formats can be accepted and so forth. The same number has a written policy stating the institutional aims for the repository and what is expected of authors. In all cases this policy was reviewed and approved at senior management level within the organisation. All evidence to date shows that with out a firm policy in place on what authors are expected to do about depositing their outputs repositories remain virtually empty: with a mandatory policy they are filled much more effectively (Swan, 2006).

Intellectual Property Rights/Copyright: According to Day (2003) one possible impediment to the success of institutional e-print repositories is the traditional assignment of copyright to publishers. In most cases when a paper has been accepted for publication in a journal, the author/s then assign the copyright to the publisher or (sometimes) grants them an ‘exclusive license’ to publish. In many cases, these contracts expressly forbid the publication of papers in any other form, including their deposit into institutional repositories. This is despite the fact that over 90 % of journals already officially support self-archiving.

The RoMEO project (Project RoMEO, 2003) has extensively considered the rights issues of OA publishing. RoMEO created a publisher policy director so authors could check policies before choosing a publisher. The RoMEO directory is now available as an expanded and searchable database hosted by SHERPA.

Use of Institutional Repositories (IR)

Universities and research libraries around the world use IR in the following ways:

- IR enhances the professional visibility of the faculty
- Raises the prestige of the institution
- Storing learning materials and courseware
- Electronic publishing
- Lower access barriers
- Offers wider dissemination of scholarly communication
- Open access online articles are highly cited
- Students can easily access the papers written by the faculty members
- Managing collections of research documents
- Research assessment and housing digitized collections
- Encouraging open access to scholarly research
- Knowledge management
- Institutional leadership role for the library
- Preserving digital materials for the long term
IR Design Architectural

Publication in IR can be immediately found in global search service. IR Design Architecture IR may have multi-tier design architecture. It has been divided into three groups.

- Operational architecture
- Technical architecture
- System architecture

IR Development

Key steps for developing Institutional Repository. Some important steps involved in developing an institutional repository are.

- Registration
- Certification
- Awareness
- Digital preservation policy
- Archiving
- Self-achieving
- OAI

UNESCO, (2015). All of these changes put libraries exploring IRs for the first time in an enviable position. The products have richer feature sets, and all the major platforms are available as a hosted service, which arguably has a lower total cost of ownership and is less time-consuming than running an IR locally. Librarians are now truly free to compare platforms by focusing on the critical features that will address their needs and make their repositories successful. This guide compares the features of the major platforms and is intended to help libraries focus on which features will help facilitate the success of their repository. The comparison is divided into eleven categories to help librarians identify the features that are most important designing and developing/building a successful institutional repository programme at their institution.

- Infrastructure: Starting with the fundamental features of the repository platforms, the Infrastructure section covers installation, hosting, and customer support options.
- Front-end Design: The reader-facing, front-end design reflects institutional branding as well as how the reader interacts with the repository. Integrated front-ends, customizable repository designs, and mobile-optimized pages help ensure an optimal browsing experience.
- Content Organization and Control: Librarians interested in how each platform supports content, access controls, and repository structure will find relevant information here.
- Content Discovery: Identifying the key features that increase the visibility of the repository’s content, Content Discovery covers tools and options that help readers and researchers discover scholarship.
- Publication Tools: Librarians and editors evaluating publishing options will discover and compare the necessary tools such as peer review, batch import, metadata options,
and editorial workflows to publish high quality scholarship directly to the repository.

- **Reporting**: Providing feedback to administrators, editors, authors, and stakeholders is a crucial aspect of a successful repository program. This category outlines the reports available on each platform.

- **Multimedia**: A modern feature of the repository, Multimedia compares how each platform manages images, video, and streaming services that add greater depth to collections.

- **Social Features and Notification**: Building on discoverability and search engine optimization, the social features of the repository provide a modern approach to engaging readers by providing tools to follow, share, and bookmark scholarship in the repository.

- **Interoperability**: Beginning with Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), the repository was built with dissemination in mind. The Interoperability category examines how each platform integrates with discovery services, researcher profiles, and other repositories hosted on the same platform.

- **Authentication**: Although the majority of repository content is open access, institutional login credentials remain an important aspect of how readers and researchers access content across campus systems and the repository.

- **Accessibility**: The ability to offer access to those with varying abilities and disabilities is a fundamental feature of the repository. VPAT statements and section 508 compliance show how each repository platform offers access to as many readers and researchers as possible.

- **Preservation**: From LOCKSS-compliance to format migration, the preservation category examines how each of the repository offerings preserves and maintains repository content.

**Role of Librarian**

In networked era like IR, the librarian plays a vital role in using and disseminating information of all kinds. Using and creating IRs is also one of the major role played by the librarian. Only the librarian is the right/key person to take initiative for the development of an IR and the required project can be completed without the constituent of a committee in which outsider/experts need to be present. The committee would comprise the hardware and software experts, internal members, decisions making authority and the librarian. The committee would suggest the right hardware and software. The librarian will play an important role in converting the meetings and implementing the same in co-operation with other faculty members.

**Conclusion**

We are living in information technology age and the advancement of technology much research is happening. Due to much research work, vast amount of intellectual materials are producing rapidly which should be instantly communicated. So, there is only and important way to communicate the scholarly output which is developing the open access institutional repository where easily archive the scholarly communication. Now-a-day, open source software are easily available for the purpose of designing and development of
open access institutional repository. Many universities and R & D institutes have developed their own institutional repository and some universities or R & D institutes are providing their research output on open access platform. Now, many universities and R & D institutes are developing their institutional repository and planning the designing and developing the institutional repository. This article shall be useful for those universities and R & D institutes which are developing and making plan for designing and developing the institutional repository.

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Study of Information Seeking Behaviour and Library Use Pattern of Pragati College of Arts and Commerce Students: A Case Study

TRUPTI S. MORE

Abstract

This study was undertaken to determine the information seeking behaviour and library use by students of Pragati College of Arts and Commerce. The survey was conducted on the students to gauge their feedback on the library collection, library services, overall effectiveness of the library, use of internet, search engines, information resources, the nature and purpose of information sought etc. Data was gathered from 149 students out of 150 through open and closed questionnaire. The survey directs to certain remedial measures that are required such as guidance on how to use library resources and services, marketing of library services, extending the library working hours and make them familiar with E-resources in order to ensure maximum utilization of available resources of the library.

Keywords

Information Seeking Behaviour, Library Services, Questionnaire, Remedial Measures, E-resources,

Introduction

The Library is primarily a service institution, which usually performs three basic functions, such as acquisition of information, organization of information and dissemination of information. In performing all these functions, the library authority considers the users as the most important entity. Users are the central focus of the existence of the library, since the collection and services of the library are meant for the users. To understand the information requirements of its users and fulfilment of their requirement is the prime role of the library. The second law of the Library Science, “Every user his/her information” has rightly considered the importance of users. When the entire Library environment pivots around the information needs of the users, it becomes imperative that the library is able to recognize and capture their information seeking behaviour and understand their specific information requirement. Study on information user pattern of user groups not only identifies their behavioural trends but also improves the quality of library collection, organization and other services.
Information seeking behaviour

The process of information acquiring, using and implementing information are known as information seeking behaviour. Information seeking behaviour refers to the way people search for and utilize information. The term information seeking behaviour has been used in the research literature since the 1950's (Hayden, 1999). Thereafter it took several decades for the subject to be presented as a major field of study. According to Wiberley and Jones (1989), information seeking is a basic activity in which all people participate, manifest through particular behaviours. It is of utmost interest to librarians and information science professionals in the areas of collection development, services and organizational structures (Wiberley and Jones, 1989). It follows that information seeking behavior is, as Wilson (1999) defines it, “those activities a person may engage in when identifying their own needs for information, searching for such information in any way, and using or transferring that information.”

Information-seeking and use have become complex processes for college and university students due to the proliferation of information technologies and resources in all types and for mats. During the last decades the interest in students’ use and information behaviours has increased mainly because of the increase in students’ numbers and libraries need to meet their clients’ demands in the best possible way. The literature on surveys about the information-seeking behaviours of the students is extensive. Many studies have been conducted to investigate the information seeking behaviour of library users based on their subject interest, information environment and geographical location.

This study was undertaken to determine the information seeking behaviour and library users by students of Pragati College of Arts and Commerce so that the researcher can study the library users pattern and information-seeking behaviour of students which will in turn help in improving the quality of library collection and services offered by the library. Thane Zila Agari Shikshan Prasarak (T.Z.A.S.P.) Mandal’s Pragati College of Arts and Commerce, Dombivli was found ed in 1997. The college is permanently affiliated to University of Mumbai and reaccredited by NAAC with “B” grade. The college offers UG Programmes in Arts and Commerce and PG Programmes in Economics and Commerce. The College conducts three year Bachelor of Management Studies (B. M.S.) and Bachelor of Commerce- Banking and Insurance (B & I) and Information Technology (BScIT). The library is being constantly enriched by the acquisition of latest books and journals. At present, the library has more than 32,000 books (text and reference), 70 national and international Journals and Magazines, CDs/DVDs, bound volumes of periodicals and newspapers.

The library is completely automated using SLIM 21 software. Library has membership of N-List programme under which we get to access more than 97000 E-books and more than 6000 E-journals. Library also has institutional membership of British Council Library, Mumbai. Under privilege, we get access to exclusive collection of over 22,000 E-books across all genres 24 x 7 for all 365 days, sourced from the UK.

Objectives of the Study

- To find out information seeking behaviour of the students
- To find out the awareness and use of library resources by the students
- To find out the type of information sources used by students
• To evaluate usefulness and adequacy of library resources & services
• To know the main purpose of information seeking through web searching

Methodology
The target populations in the study were Junior College and Undergraduate students at the Pragati College of Arts and Commerce, Dombivli. A survey method was used for data collection. A total of 150 questionnaires with open and close ended questions on information seeking behaviour of students were distributed randomly among Junior college and Undergraduate students. Out of 150, 149 filled in questionnaires were returned by the students with the overall response rate 99.33%. The collected data were analyzed, classified and tabulated by employing statistical method.

Analysis
The students were asked to mention their name, gender and the class in which they studied. Out of 149 respondents 67(44.97%) were male and 82, (55.03%) were female which comprises 80 (53.69%) Junior college students and 69 (46.30%) were Undergraduate students.

Frequency of library visit
The frequency of students visiting the library has been classified as shown in Table 1 which indicates that majority of students i.e. 34.90% were visiting the library 2-3 times in a week followed by 30.2% who visited on a weekly basis while 20.81% students visited the library on a monthly basis. Only 14.09% students visited library daily.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>21</td>
<td>14.09</td>
</tr>
<tr>
<td>2-3 times in a week</td>
<td>52</td>
<td>34.90</td>
</tr>
<tr>
<td>Weekly</td>
<td>45</td>
<td>30.20</td>
</tr>
<tr>
<td>Monthly</td>
<td>31</td>
<td>20.81</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>149</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Purpose of visit to the library

<table>
<thead>
<tr>
<th>Purpose</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>To study</td>
<td>102</td>
<td>68.46</td>
</tr>
<tr>
<td>To borrow material</td>
<td>55</td>
<td>36.91</td>
</tr>
<tr>
<td>Use E-resources</td>
<td>28</td>
<td>18.79</td>
</tr>
<tr>
<td>To refer Journals/ Magazines</td>
<td>26</td>
<td>17.45</td>
</tr>
<tr>
<td>To read newspaper</td>
<td>17</td>
<td>11.41</td>
</tr>
<tr>
<td>Updating Knowledge</td>
<td>63</td>
<td>42.28</td>
</tr>
</tbody>
</table>
From table 2, it is seen that 68.46% students visited the library to study, 36.91% students to borrow material, 18.79% to use E-resources, 17.45% to refer journals/magazines, 11.41% to read newspapers while 42.28% to update their knowledge.

**Use of library services**

**Table-3**

<table>
<thead>
<tr>
<th>Services</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue/Return</td>
<td>113</td>
<td>75.84</td>
</tr>
<tr>
<td>Reference</td>
<td>43</td>
<td>28.86</td>
</tr>
<tr>
<td>Bibliographical services</td>
<td>17</td>
<td>11.41</td>
</tr>
<tr>
<td>Photocopying</td>
<td>4</td>
<td>2.68</td>
</tr>
<tr>
<td>OPAC</td>
<td>5</td>
<td>3.35</td>
</tr>
<tr>
<td>Internet facility</td>
<td>64</td>
<td>42.95</td>
</tr>
<tr>
<td>CAS</td>
<td>11</td>
<td>7.38</td>
</tr>
<tr>
<td>Newspaper clippings</td>
<td>20</td>
<td>1342</td>
</tr>
<tr>
<td>Project assistance</td>
<td>62</td>
<td>41.61</td>
</tr>
</tbody>
</table>

Table 3 indicates that majority of the students use the library for borrowing, browsing the Internet and for project guidance. Other services like Reference service, newspaper clippings, and bibliographical services are used marginally while photocopying and OPAC is relatively less used.

**Use of library resources**

**Table-4**

<table>
<thead>
<tr>
<th>Library resources</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbooks</td>
<td>107</td>
<td>71.81</td>
</tr>
<tr>
<td>Reference books</td>
<td>87</td>
<td>58.39</td>
</tr>
<tr>
<td>Journals/magazines</td>
<td>34</td>
<td>22.82</td>
</tr>
<tr>
<td>E-resources</td>
<td>40</td>
<td>26.85</td>
</tr>
<tr>
<td>Newspapers</td>
<td>38</td>
<td>25.50</td>
</tr>
</tbody>
</table>

Table 4 shows that majority students used textbooks and reference books followed by E-resources and newspapers. The use of journals magazines is relatively less.

**Purpose of seeking information:**

**Table-5.**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>General awareness</td>
<td>74</td>
<td>49.66</td>
</tr>
<tr>
<td>Completing assignments, notes, project</td>
<td>90</td>
<td>60.40</td>
</tr>
<tr>
<td>To keep up-to-date</td>
<td>34</td>
<td>22.82</td>
</tr>
<tr>
<td>Recreation</td>
<td>17</td>
<td>11.41</td>
</tr>
</tbody>
</table>
Table 5 indicates the nature of the information seeking behaviour of the students. 60.40% students used the library for completing assignments/notes/project and 49.66% used it for increasing their general awareness. To keep up-to-date and recreation are the other purposes of seeking information by the students which have less priority.

Problems faced in library

Table 6

<table>
<thead>
<tr>
<th>Problems</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of latest information materials</td>
<td>48</td>
<td>32.21</td>
</tr>
<tr>
<td>Lack of knowledge on how to use the library</td>
<td>31</td>
<td>20.80</td>
</tr>
<tr>
<td>Insufficient Library hours</td>
<td>55</td>
<td>36.91</td>
</tr>
<tr>
<td>Don’t know how to use E-resources</td>
<td>7</td>
<td>4.54</td>
</tr>
<tr>
<td>Don’t know how to use OPAC</td>
<td>33</td>
<td>21.42</td>
</tr>
<tr>
<td>Library staff not supportive</td>
<td>7</td>
<td>4.54</td>
</tr>
</tbody>
</table>

Table 6 indicates in response the problems faced by students during library visit. 36.91% students found that library opening hours are not sufficient, 32.21% students found that library lacks information materials according to their need, 21.42% students are not familiar with using OPAC, 20.80% students don’t know how to search document or other material in the library, 4.54% students don’t know how to access E-resources and 4.54% students found the library staff to be uncooperative in nature.

Rate your library collection

Table 7

<table>
<thead>
<tr>
<th>Remarks</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>32</td>
<td>21.48</td>
</tr>
<tr>
<td>Good</td>
<td>70</td>
<td>46.98</td>
</tr>
<tr>
<td>Satisfied</td>
<td>40</td>
<td>26.84</td>
</tr>
<tr>
<td>Poor</td>
<td>4</td>
<td>2.68</td>
</tr>
</tbody>
</table>

Table 7 indicates that 46.98% students found the library collection to be good, while 26.84% students were satisfied with collection. 21.48% students rated the library collection as excellent and only 2.68% students found it poor to satisfy their information needs.

Rate your library services

Table 8

<table>
<thead>
<tr>
<th>Remarks</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>27</td>
<td>18.12</td>
</tr>
<tr>
<td>Good</td>
<td>65</td>
<td>43.62</td>
</tr>
<tr>
<td>Satisfied</td>
<td>50</td>
<td>33.56</td>
</tr>
<tr>
<td>Poor</td>
<td>5</td>
<td>3.35</td>
</tr>
</tbody>
</table>
Table 8 indicates in response the rating of the library services. 43.62% students found it good, 33.56% students were satisfied with it, 18.12% students found it to be excellent while only 3.35% students responded on it as poor.

Information seeking through Web World Wide Web (WWW) has emerged as powerful educational tool and has become a vital instrument for teaching, learning and research purpose. Libraries are also using this technology in their day to day work for providing various services to the users. Pragati College library is also providing Internet facilities to students for accessing the web. The following questions were asked to students in order to analyze their web searching behaviour.

**Experience as web user**

<table>
<thead>
<tr>
<th>Experience of web searching</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>64</td>
<td>42.95</td>
</tr>
<tr>
<td>1-3 years</td>
<td>37</td>
<td>24.83</td>
</tr>
<tr>
<td>3-4 years</td>
<td>12</td>
<td>8.05</td>
</tr>
<tr>
<td>More than 4 years</td>
<td>25</td>
<td>16.78</td>
</tr>
<tr>
<td>None</td>
<td>11</td>
<td>7.38</td>
</tr>
</tbody>
</table>

The students were asked to mention about the period since they had been using the web. Table 9 shows that a majority of the students 42.95% have experience of web searching for less than 1 year, 24.83% of them 1 to 3 years, 8.05% of them 3 to 4 years and 16.78% students respond that they have been using web for more than 4 years. 7.38% students were those who have never been exposed to the Web.

**Location of using Web**

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Library</td>
<td>74</td>
<td>49.66</td>
</tr>
<tr>
<td>At Computer Lab</td>
<td>13</td>
<td>8.72</td>
</tr>
<tr>
<td>At Home</td>
<td>50</td>
<td>33.56</td>
</tr>
<tr>
<td>At Cybercafés</td>
<td>5</td>
<td>3.35</td>
</tr>
</tbody>
</table>

The largest group of the students at 49.66% reported that they access web at the Library, followed by 33.56% who access at home. 8.72% students accessed web at their computer lab and 3.35% students accessed web at cybercafés.

**Web Searching Gadgets**

<table>
<thead>
<tr>
<th>Gadget</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop</td>
<td>43</td>
<td>33.33</td>
</tr>
<tr>
<td>Desktop</td>
<td>100</td>
<td>67.11</td>
</tr>
<tr>
<td>Smartphone</td>
<td>81</td>
<td>54.72</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>6.04</td>
</tr>
</tbody>
</table>
The students were asked to mention the gadgets, which they used for web searching. Table 11 indicates that 67.11% students used desktop while 54.72% revealed use of smartphone. 33.33% students use laptops for web searching and 6.04% students reported some other gadgets.

Frequency of Web searching

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>62</td>
<td>41.61</td>
</tr>
<tr>
<td>Once in week</td>
<td>45</td>
<td>24.63</td>
</tr>
<tr>
<td>Once in fortnight</td>
<td>8</td>
<td>5.37</td>
</tr>
<tr>
<td>Rarely</td>
<td>31</td>
<td>20.80</td>
</tr>
</tbody>
</table>

The students were asked to mention the frequency of web searching. The results indicate that 41.61% students searched the web on a daily basis followed by 24.63% who browsed once in a week. 5.37% of students accessed web once in fortnight and 20.80% students accessed web rarely.

Purpose of Web searching

<table>
<thead>
<tr>
<th>Purpose</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class assignments</td>
<td>51</td>
<td>34.22</td>
</tr>
<tr>
<td>Research work/ Project</td>
<td>99</td>
<td>66.44</td>
</tr>
<tr>
<td>Communications (E-mail)</td>
<td>40</td>
<td>26.85</td>
</tr>
<tr>
<td>Social networking</td>
<td>62</td>
<td>41.61</td>
</tr>
<tr>
<td>Accessing news and current affairs</td>
<td>33</td>
<td>22.15</td>
</tr>
<tr>
<td>E-commerce applications</td>
<td>23</td>
<td>15.44</td>
</tr>
</tbody>
</table>

The main objective of this question was to find out the purpose of searching the web. Table 13 indicate that 66.44% students searched the web for research work/completing projects, 41.61% students searched the web for social networking, 34.22% students for class assignments, 26.85% students used it for communication purpose, 22.15% students searched for accessing news and current affairs while 15.44% students searched the web for E-commerce applications such as online shopping, online tickets reservation etc.

Search technique used to search the information on the web

<table>
<thead>
<tr>
<th>Ways to search</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type the web address directly</td>
<td>49</td>
<td>32.88</td>
</tr>
<tr>
<td>Use search engines</td>
<td>98</td>
<td>65.77</td>
</tr>
</tbody>
</table>

Table 14 shows that majority students prefer to use search engine for searching information on the web. Only 32.88% students type the web address directly, which indicates that
majority of the students are not aware about the specific addresses or URLs of the particular website of their need.

Use of Web search engine

Table 15

<table>
<thead>
<tr>
<th>Search Engines</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>143</td>
<td>95.97</td>
</tr>
<tr>
<td>Yahoo</td>
<td>27</td>
<td>18.12</td>
</tr>
<tr>
<td>Alta Vista</td>
<td>3</td>
<td>2.01</td>
</tr>
<tr>
<td>MSN</td>
<td>8</td>
<td>5.37</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
<td>7.38</td>
</tr>
</tbody>
</table>

Table 15 revealed that majority students i.e. 95.97% use Google search engine for finding their information from the Web. The above table shows full picture of data collected.

Problems faced in Web searching

Table 16

<table>
<thead>
<tr>
<th>Problems</th>
<th>No. of Students</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low bandwidth</td>
<td>48</td>
<td>32.21</td>
</tr>
<tr>
<td>Difficulty in retrieving relevant information</td>
<td>25</td>
<td>16.78</td>
</tr>
<tr>
<td>Irrelevant information</td>
<td>12</td>
<td>8.05</td>
</tr>
<tr>
<td>Cost problem</td>
<td>19</td>
<td>12.75</td>
</tr>
<tr>
<td>It takes too long to view/download pages</td>
<td>80</td>
<td>53.69</td>
</tr>
<tr>
<td>Privacy problem</td>
<td>15</td>
<td>10.07</td>
</tr>
</tbody>
</table>

Web searching has its own limitations and the above table reveals the problems faced by students online. A large number of students 55.69% felt that it takes too long to view/download pages, 32.21% faced the problem of low bandwidth followed by 16.78% who faced difficulty in retrieving relevant information. 8.05% faced issues of irrelevant information, 12.75% had cost problem and lastly 10.07% faced privacy issues.

Conclusion and Recommendations

In this study, 149 students of Pragati College of Arts and Commerce have been surveyed. This study reveals that majority students are using traditional resources like textbooks and reference books. Other resources like journals, magazines, E-resources are comparatively less utilized. In services also maximum students prefer traditional services over modern services like OPAC, CAS, Bibliographical service, newspaper clippings etc. Due to the lecture timings in junior college these students find lack of time to use the library. It is also noted that there is less awareness about library resources & how to use library effectively among students. Students whole-heartedly welcome the internet facility provided by the library but at the same time face low bandwidth issues. The students of Pragati College perceive that the college library has good collection and majority of them are satisfied with
services catered by the library.

There is a need to make a plan for maximum utilization of library resources and services. Based on student suggestions, the remedial measures to be undertaken are outlined as follows:

1. Need of library orientation programmes periodically for students at the time of their admission. Specific training to be imparted to those students who are not familiar with web searching tools and methods.

2. Library needs to extend it’s working hours to ensure that all students can utilize its resources for their maximum benefit.

3. Need to provide WiFi facility for better bandwidth.

4. Need to create awareness about E-resources and its use for educational purposes.

5. Need to create awareness among students about library website, library blog etc.

6. Need to market library services.

7. Need to take feedback from students periodically, review it and frame library policy keeping in mind information needs of the students.

8. Need of periodical orientation and training programmes for the library support staff every six months.

References


Impact of Information Technology in Library

YATEN DRA KUMAR

Abstract

Information is the backbone of the any country. It is essential for the all living organism on the earth. The new information technology has a key for the new inventions, and people came with together like a village. The paper discusses the very fast growth of information service provided by information centers and libraries. Today libraries are not only a repository of books and other studies material but also these are information service provider with the help of information technology. IT based services fulfill the all requirements of the users at the right way, right time and the right user.

Introduction

Human society has been always changing and moving towards better socio-economic situation than ever before. In present time we are living in information age one of the vital forces of this age is information, which is presently driving all our human activities. Therefore information has become a vital resource for societal development. It is now an indispensable raw material for right decision-making from personal level to the government level. It is only the information, which is dividing the world between fast moving economies that do not use it. The backwardness or forwardness of any country nowadays is mainly due to the use of adequate information especially paved the way for development of any country in the world.

Information Technology (IT)

Means a variety of technological applications in the process of communication of information. The term information technology has been used as collective term for the whole spectrum of technologies providing the ways and means to acquire, store, transmit, retrieve, and process information.

ALA Glossary

“Information technology is the application of computers and other technologies to the acquisition, organization, storage, retrieval, and dissemination of information.”

British Department of Industry

It defines Information Technology as “The acquisition, processing, storage and dissemination
Webster’s New Encyclopedia

“Infor mation Techn ology is the collective term for various technologies involved in the processing and transmission of Information they include computing telecommunications and microelectronics.”

Information Technology Association of America (ITAA)

“The study, design, development, implement ation, support or management of computer-based information systems, particularly software applications and computer hardware.” In short, IT deals with the use of electronic computer hardware and computer software to convert, store, protect, process, transmit and recover information, securely.

In this definition, the term “information” can usually be replaced by “data” with out loss of meaning. Recently it has become popular to broaden the term to explicitly include the field of electronic communication so that people tend to use the abbreviation ICT (Information and Communi cation Technology). Strictly speaking, this name contains some redundancy.

History of Information Technology

A particularly important aspect of contemporary technological innovation is the quest for new ways to capture, store, process, transport and display information. Although the prevailing expectation is that progress in this field will have a profound impact on societies, expert opinions differ about whether this impact will be positive or negative. In fact it is difficult, if not impossible, to foresee the future social and economic implications of the adoption and proliferation of new information and communication technologies, and this creates a serious problem for policy makers.

The term “information technology” came into use in the 1970s. Its basic concept, however, can be traced back even further. Throughout the 20th century, an alliance between the military and various industries has existed in the development of electronics, computers, and information theory. The military has historically driven such research by providing motivation and funding for innovation in the field of mechanization and computing.

The first commercial computer was the UNIVAC I (1951). It was designed by J. Presper Eckert and John Mauchly for the U.S. Census Bureau. The late 70s saw the rise of microprocessors, followed closely by IBM’s personal computer in 1981. Since then, four generations of computers have evolved. Each generation represented a step that was characterized by hardware of decreased size and increased capabilities. The first generation used vacuum tubes, the second transistors, and the third integrated circuits. The fourth (and current) generation uses more complex systems such as Very-large-scale integration or System-on-a-chip.
Components of Information Technology

Information technology may be conveniently grouped into: Processor technology, storage technology and software aspects. Computer consists of electronic components assembled in a design or “architecture” that will perform necessary functions of input, output, computation and control (control of both the computer itself and of attached peripheral devices that perform input and output functions and store files). In the past, electronic components were expensive, therefore, a minimum number were used in a single processor that alternately used to perform input, processing and output.

The Concept of Information Retrieval

The term Information Retrieval was coined in 1952 and gained popularity in the research communities from 1961. The concept of information retrieval presumes that there are some documents or records containing information that have been organized in an order suitable for easy retrieval.

Advantage of IT in Library and Information Services

Information technology helps the users to eliminate the duplication in the routine work. It helps us to provide pinpointed, exhaustive and expeditious information to the community.

Information technology removed the two major constraints—storage and retrieval of huge mass of information, accuracy in daily routine work, geographical limitations, and preservation of rare information can be done without affecting its utility. Library is available online to its users round the clock. It offers many advantages to librarians at their workplace especially in carrying out tasks which were previously either impossible or enormously difficult. IT provides librarians with a new set of alternatives for collecting, organizing and disseminating information effectively and expeditiously, improve stock control and better quality of working life for all concerned development of new services, improvement to existing services and higher profile for library. Provision of quality information services, redundancy of depth of classification saving a lot of time, provision of exhaustive information etc., added advantage of information technology over traditional techniques.
Suggestions

In changing environment of information, Technology plays an important role and becomes the basic necessity of life. Due to the multi-disciplinary growth of information every document becomes necessary to its user. The information is being produced in variety of forms from every corner of the world which makes impossible to acquire all the information for the library. The library can provide all these information to its users through effective library services and proper implementation of technologies. The library provides information to its users according to their requirements through journals, textbooks, encyclopedia, newspapers, yearbook etc. and also through materials available in different forms like CD-ROM, floppy, DVD, online databases, etc. but all the libraries are not in the position to acquire all the information sources due to their financial problem. So it is very important for the libraries to acquire the most adequate source of information in their available budget.

With the advent of IT, the entire world has changed into a global village. With the help of IT, information from any part of the world can be searched and acquired in very less time. But this benefit can only be taken by those who are aware of IT.

Conclusion

A wide variety of technology options can be used. Equipping the library with the state of art information technology product and services enables the library system to meet the complex and ever increasing information needs of its users.

References

Computing Paradigm of E-learning Methodology

YOU GAL JOSHI

Abstract

The purpose of this paper is to make a profoundly strong case for accumulating in E-learning for building up of quality human resource capital for economic upliftment of India. An attempt has been made to explore the possibilities of E-learning/online learning towards building up of quality human resources in higher education for a developing nation like India. A comprehensive environmental scanning of various E-learning experiments, tools and techniques, MH RD and Department of Higher Education project like “National Mission on Education through Information and Communication Technology” (NM EICT) to facilitate on appropriate pedagogy for E-learning has been carried out. The paper also seeks to highlight the options available with traditional Universities and its affiliate college and institute for deploying ICT and for implementing E-learning. The main thrust area of this paper is to understand the buzz word “E-learning” and its associated Goals/Models and to provide a robust and ease of use interface for the learner.

Keywords

Information and Communication Technology (ICT), Electronic learning (E-learning), Online Learning, Blended Learning, Modular Object-Oriented Dynamic Learning Environment (MOODLS)

Introduction

As said by the Alvin Toffler, an American writer and futurist, known for his works discussing the digital revolution, communication revolution, corporative revolution and technological singularity.

“The illiterate of the 21st century will not be those who will read and write, but those who cannot learn, unlearn, and relearn”

The E-learning, thus provides a paradigm shift from traditional to technological along with a wide range of applications and processes designed to deliver instruction through electronic means. Usually this means over the Web, however it also can include CD-ROM or video-conferencing through satellite transmission. The definition of E-learning is broader than, but includes, “online learning,” “Web-based training,” and “computer-based training.” Most importantly, it signals the paradigm shift in education and training that is in progress.
The following are some of the modalities that are being currently in use of E-learning:

1. Use of ICT to enrich classroom/workplace learning e.g. Internet, CD-ROM, interactive multimedia, games/simulations, social networks
2. Online instruction for distance learning cost savings as no face-to-face meetings
3. Blended instruction like combining online and face-to-face learning events
4. Synchronous: real-time, multiple students online, instructor-led
5. Asynchronous: students and instructor in intermittent interaction
6. Instructor-led group work e.g. combining both synchronous and asynchronous events
7. Self-study like online tutorials, research and discovery learning events
8. Self-study with subject matter expert like tutoring, mentoring, coaching
9. Web-based tutorials like individual or group using self-paced online resources
10. Computer-based tutorials like individual or group using CD-ROM resources
11. Video and audio resources like distributed by tape, CD, DVD, online streaming, download, or podcast, etc.

The most important characteristic of an E-learning that it simply does not hinge on multimedia environment collaboratively on a stand-alone desktop, even though it is the integrated power of a worldwide network of such computers that integrates authors, instructors, and learners globally with the legacy of text, graphics, audio and video as well as interactivity and collaboration through sharing.

E-learning has got very powerful strength more than technology as it is the social dynamics of networking. If we talk about the technology-based instruction, it manipulates to make both the system like planning/development process and the delivery/learning process more effective. The tools enhance the instructional capacity of teachers and learning activity of students. The key idea in the parlance of E-learning system is that “instruction” that may be understood as not just information present ation, but interactivity, guidance, reinforcement, demonstration and practice that strengthen learning. This may be quite in this way:

1. Instructors and curriculum developers can now share resources more easily and together build learning-object repositories.
2. Multimedia and associated resources from the network can enhance the traditional classroom experience dramatically.
3. Online synchronous tools create a new kind of cyber-classroom, connecting distance learners from many locations (“anywhere”) in peer-to-peer engagement.
4. Online self-paced tutorials create enriched interactive and exploratory learning experiences that are accessible on-demand (“anytime”) when a learner is ready.

There are four goals where E-learning may be achieved at its apex. It maps these four learning goals using the following criteria:

1. Process and Goal: “information vs. instruction” (broadcast, transfer, develop & certify)
2. Content: “scope & depth” (awareness, understanding, use and mastery)
3. Learning Tasks: “simple vs. complex” (degree of required practice and interaction)
4. Development Time: “rapid vs. robust” (amount of time /effort required for product development).
Based on existing archive, software engineering has got E-Learning Maturity Model (eMM) that mainly emphasizes to assess the capabilities of e-learning processes. The key idea underlying the dimension concept is holistic capability. Rather than the eMM measuring progressive levels, it describes the capability of a process from these five synergistic perspectives. An organization that has developed capability on all dimensions for all processes will be more capable than one that has not. Capability at the higher dimensions that is not supported by capability at the lower dimensions will not deliver the desired outcomes; capability at the lower dimensions that is not supported by capability in the higher dimensions will be ad-hoc, unsustainable and unresponsive to changing organizational and learner needs.

Capability in each process is described by a set of practices organized by dimension. The eMM supplements the CMM concept of maturity levels, which describe the evolution of the organisation as a whole, with dimensions. The five dimensions of the eMM are:

1. Deliver y
2. Planning
3. Definition
4. Management
5. Optimisation

Apart from the above, there are some free source e-learning software platform e.g. MOODL (abbr eviation for Modular Object-Oriented Dynamic Learning Environment), also known as a Course Management System, Learning Management System, or Virtual Learning Environment (VLE). MOODL was originally developed by Martin Dougiamas to help educators create online courses with a focus on interaction and collaborative construction of content, and is in continual evolution.

Methodology

The most common misconception with the E-learning is to collate it only with “online learning” or “web-based training” (WBT). Actually, online learning and WBT are key subsets of E-learning, but E-learning is a broader umbrella category: it includes various tools of person-to-person contact, including ways of making traditional classroom teaching more effective.

E-learning is the ability to provide all kind of archives to learner more efficiently in anytime anywhere mode.

Models of E-learning that exclude any face-to-face contact may have limited prospects, but blended learning offers significant potential on and off campus and should be pursued if benefits of E-learning are to be fully realized good.

The major objectives of the proposed study are as follows:

1. To study primary goals of E-learning environment.
2. To study available technology that to access the existing E-learning environment for a learner.
3. To evaluate performance of the existing E-learning system in terms of learner with the available technology.
4. To analyse E-learning system vis-a-vis traditional learning system.
5. To provide some suggestive guidelines to improve the existing E-learning system for a learner and educator.
6. To develop a simulator, based on recent technology to access e-content on the web through E-learning environment in a crystal clear format.
7. To study the holistic.

Conclusion

It can be concluded that the challenges of traditional face-to-face education vis-à-vis E-learning in India are enlisted and suggestions for management of the E-learning process by institutions which intend to venture into E-learning are enumerated. The advocates of the urgency for the traditional institutions to put on impetus on investment in ICT for providing E-instruction for delivery of knowledge by riding the information super highway. It is heartily felt that there must be a simulator kind of device that manages all the e-content and makes disseminate to a common people with ease of use.

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