An Analytical Study of Web Enabled Information Services through Web Sites in University Libraries of Delhi and NCR

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Abstract

The paper surveys the university libraries of Delhi and NCR to find out web enabled information services facilitated through their websites. The website content analysis along with review of literature was used to find out the various services provided to select the services and their components for the study. The study was designed on the method of direct observation along with content analysis of websites and a checklist which included **five** *information services from the patrons' point of view. National Institution Ranking Framework -2017 was used to select the libraries for study. Top ranking universities of Delhi and NCR were selected and sampled for collection of data. The data was analyzed through mean and percentage analysis using Google spreadsheet. Findings revealed that all are providing quite a number of web enabled information services through their websites, which are interactive and have integrated e-resources and e-databases. Jawaharlal Nehru university library is on the first rank in provision of studied services through their website. This study provides a unique insight of the provision of web enabled information services offered by selected university libraries of Delhi and NCR. Study of usage of web enabled information services by the patrons is also important. There are not many studies available on it. While the literature is replete with information on ways in which academic libraries are using information technology to serve their patrons, this paper offers a synopsis of the developments in university libraries of Delhi and NCR.*

Keywords: *University library information centers, Web enabled information services, Library websites, Information Communication Technology, e-Resources, OPAC, Institutional Repository.*

INTRODUCTION

University libraries publicize and promote their collection, services and products through web 2.0 websites to achieve their objectives of supporting the parent institution. Information communication technologies (ICT) helps in multidirectional information flow and are significantly beneficial for everyone. The interactive version of the World Wide Web is known as Web 2.0 that is the read-write version. It has transformed the way people interact, communicate and share the information. Library information centers (LICs) using web 2.0 technologies and tools are known as library 2.0.

Interactive websites are one of the major tools of ICT which helps in increasing online visibility of LICs. It helps in marketing or publicizing products and services, a fast method to transfer the information around the world. Burke[1] expound that a website of any LIC provides a platform to share its services, collection and products and disseminate the information to its patrons. Website of web 2.0 is interactive website helps in facilitating web enabled information services.

Web enabled Information services

Information services being provided through www 2.0 by the LICs are known as web enabled information services. Library Management Software (LMS) and other web 2.0 tools may be integrated into an interactive website to provide web enabled information services. Some of traditional services, which may be made available through web, are as follows:

- Acquisition and Collection development
- Web OPAC and access to e-resources
- Serials control
- Current awareness service & Selective dissemination of information
- User Orientation & education
- Reference Service
- Interlibrary loan & Document delivery
- Institutional Repository etc.

REVIEW OF LITERATURE

There are a number of studies available in these fields and search was conducted with a combination of various key terms. Tripathi and Kumar[2], Olasina[3], Shalini R. Lihitkar et al.[4], discussed that web 2.0 is a set of essential tools for using the internet. It helps in accumulating knowledge, participation, bilateral collaboration, interaction with researchers, & authors. Developing the university libraries with Web 2.0 will convert them into library 2.0. Web 2.0 provides varied opportunities to LICs to facilitate unlimited access to e-resources, e-databases, theses and dissertations.

The study findings of Lougee[5], Geetha et al.[6], Giddaiah and Sarasvathy 2014[7] revealed that most of the respondents used LIC portal for their research work. The studies identified that the e-database and online database are preferred by a large majority of respondents. Digital environment has an important part due to the implementation of ICT to provide web enabled information services. It was suggested that proper training to the patrons as well as library professionals will improve and increase the usage of library portal service.

Singh and Samyal[8] studied IIT libraries to analyze the web enabled information services and resources. Findings of their study revealed that the majority of the premier institutions of India were not using the technologies of library 2.0 like blogs, facebook and others. Madhusudhan and Nagabhushanam[9] in their study revealed that university libraries are yet to exploit the full potential of web enabled information services. Through literature review, it was observed that a limited number of earlier studies are available on the topic chosen for study. This analytical study is an attempt to bridge this gap and find out the status of web enabled information services in university libraries of Delhi and NCR.

OBJECTIVES OF THE STUDY

The present research aims to study and analyze web enabled information services provided by university libraries of Delhi and NCR. The research aims to answer the following three questions:

RQ1: To find out the websites and URLs of the leading university libraries of Delhi and NCR.

RQ2: To analyze web enabled information services being facilitated in university libraries of Delhi and NCR?

RQ3: To find out the ranking of university libraries of Delhi and NCR Region according to their offered and studied web enabled information services?

POPULATION OF THE STUDY

There are approximately 46 universities in Delhi and NCR available on University Grant Commission (UGC) website[10]. The list includes state, deemed, central, and private universities. It is very difficult to study all the university libraries. In order to complete the research in time, the scope of the study is confined to the following limitations:

● Delhi and NCR: The National Capital Region (NCR) encompasses the entire National Capital Territory (NCT) of Delhi and several districts surrounding it from the states of Haryana, Uttar Pradesh and Rajasthan. Prominent cities of NCR are included in study are Delhi, Ghaziabad, Faridabad, Gurgaon, Noida and Meerut.

● National Institution Ranking Framework (NIRF-2017)[11] of the Ministry of Human Resource and Development (MHRD) was used to select the universities to be studied.

● There are only eight universities of Delhi and NCR in NIRF 2017. Only Central, state and Deemed (except private) universities were included in the study. Selected List of Universities of Delhi and NCR with NIRF rank (top 100) under Study are:

Table 1: Selected universities with NIRF 2017 ranking

S. No.	University	NIRF rank	Type of University	Abbreviation
1	Jawaharlal Nehru University, Delhi	2	Central	JNU
2	University of Delhi, Delhi	8	Central	DU
3	Jamia Millia Islamia, Delhi	12	Central	JMI
4	Indian Agricultural Research Institute, Delhi	15	Deemed	IARI
5	Jamia Hamdard Delhi	26	Deemed	JH
6	Jaypee Institute of Information Technology, Noida	81	Deemed	JIIT
7	Guru Gobind Singh Indraprastha University, Delhi	82	State	GGSIP

METHODOLOGY

Earlier studies & content analysis method were used to study websites of university libraries to select variables and collect primary data. The study commenced in January 2018 and was completed by June 2018. Based on the previous studies, the researcher searched the web pages of the websites of each university libraries to identify various web enabled information services. Out of the various web enabled information services, only five user oriented services were selected on the basis of usefulness to the patrons. Literature review helped in the selection of the services. Selected services are:

● Web OPAC and access to e resources;
● Current awareness service (CAS) & Selective dissemination of information (SDI);
● User Orientation & education;
● Reference Service;
● Institutional Repository.

Mean and percentage analysis are the statistical tools used to analyze the data and answer the research objectives. Google spreadsheet was used to collect the primary data and analyze it.

FINDINGS

RQ - 1: The official website of selected universities were searched through Google and studied to answer the research questions. Following (Table - 2) presents the same.

Table 2: Websites and URL of selected university libraries

University	University Website URL	Information centre URL
JNU[12]	http://www.jnu.ac.in/	http://lib.jnu.ac.in/
DU[13]	http://www.du.ac.in/du/	http://crl.du.ac.in/
JMI[14]	http://jmi.ac.in/	http://jmi.ac.in/zhlibrary
IARI[15]	http://www.iari.res.in/	http://www.iari.res.in/index.php?option=com_content&view=article&id=221&Itemid=996
JH[16]	http://jamiahamdard.edu/	http://www.jamiahamdard.ac.in/LibrayInformationSystem/
JIIT[17]	http://www.jiit.ac.in/	http://www.jiit.ac.in/lrcjiit/
GGSIP[18]	http://www.ipu.ac.in/	http://www.ipu.ac.in/library.php

RQ - 2: Only five important services from the point of view of patrons' have been selected for study as stated in the methodology. The following **(Tables 3 to Table 7)** represents the same. Here "1" denotes the presence of the particular component of that web enabled service and "No" denotes its absence.

Web OPAC & access to e-resources service: Four elements studied under this category are presented in **(Table - 3)**

Table 3: Web enabled OPAC & access to e-resources

S. No.	e- information Service/ Activity	DU	GGSIP	IARI	JH	JIIT	JMI	JNU	Total Check Points
1	Web OPAC	1	1	1	1	1	1	1	**7**
2	Federated Search	1	1	1	1	N	1	1	**6**
3	Access to e-journals & online databases	1	1	1	1	1	1	1	**7**
4	Access to other Digital Collections	1	1	1	1	1	1	1	**7**
	Total components	**4**	**4**	**4**	**4**	**3**	**4**	**4**	**27**
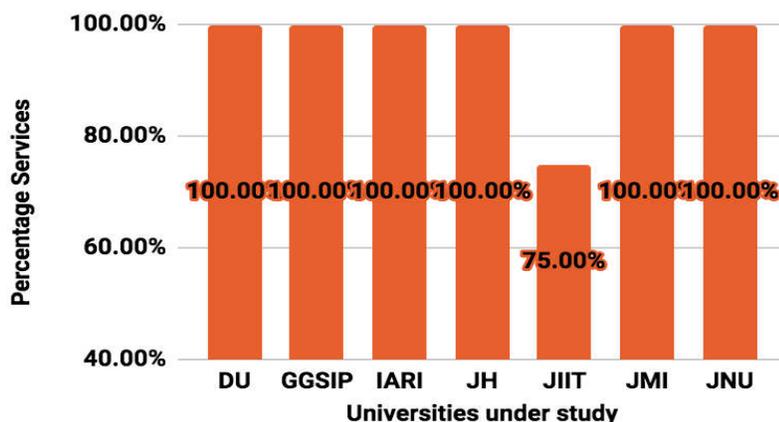
Figure 1: Percentage analysis

Analysis of **(Table 3 & Figure 1)** shows that six university libraries (**except JIIT**) are at the **top** with 100% (4 out of 4) services under study. **JIIT** is on **second** rank with 75% (3 out of 4) service components, as it does not facilitate federated search. Web OPAC is available on the www through the internet or on intranet in university premises. **Overall 96.43% (27 out of 28) services are web enabled of university libraries**

CAS & SDI: Six elements studied under this category are presented in **(Table - 4)**

Table 4: Web enabled CAS and SDI

| S. No.	e- information Service/ Activity	DU	GGSIP	IARI	JH	JIIT	JMI	JNU	Total Check Points
1	Provision of alert services for new additions (SDI)	1	1	1	1	N	1	1	**6**
2	Library news and Events	1	1	N	N	1	1	1	**5**
3	Announcements about workshops, exhibitions and training programs.	1	1	N	N	1	1	1	**5**
4	Subject gateways	1	N	N	N	N	N	1	**2**
5	Information about special exhibits	N	N	N	1	N	1	1	**3**
6	Proactive Web based Table of Contents	N	N	N	N	N	N	1	**1**
	Total components	**4**	**3**	**1**	**2**	**2**	**4**	**6**	**22**
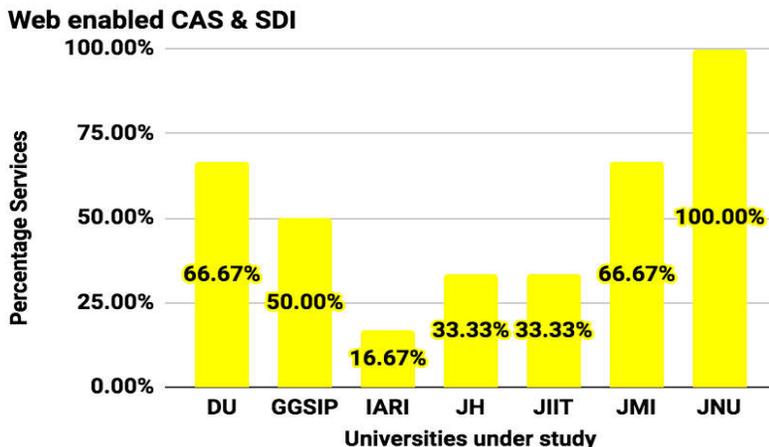
Figure 2: Percentage analysis

Analysis of **(Table 4 & Figure 2)** shows that **JNU** is at the **top** with 100% (6 out of 6) services under study. It is followed by **DU** and **JMI** at **second** position with 66.67% (4 out of 6) services. **GGSIP** is on **third** with 50% (3 out of 6) services, **JH** & **JIIT** at **fourth** with 33.33% (2 out of 6) services. **IARI** is **fifth** & **lowest** in rank with 16.67% (only 1 out of 6) service components understudy. Alert service of new arrival and e-SDI are through federated search engines. **Overall 52.38% (22 out of 42) CAS & SDI services of selected university libraries are web enabled.**

User Orientation & education: Five elements studied under this category are presented in **(Table - 5).**

Table 5: Web enabled User orientation & education

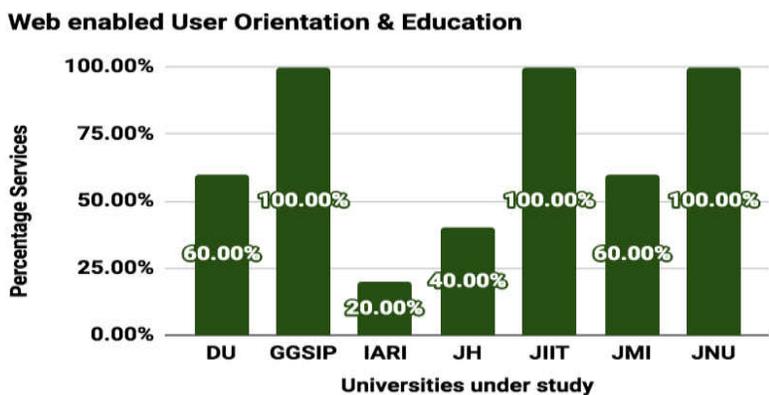| S. No.	e- information Service/ Activity	DU	GGSIP	IARI	JH	JIIT	JMI	JNU	Total Check Points
1	Map of the library	N	1	N	1	1	1	1	5
2	Search skills for Library Catalogue	1	1	N	N	1	1	1	5
3	Information literacy	1	1	N	N	1	N	1	4
4	Web-based FAQ	N	1	N	N	1	N	1	3
5	Guidance to access e-Resources	1	1	1	1	1	1	1	7
	Total components	**3**	**5**	**1**	**2**	**5**	**3**	**5**	**24**

Figure 3: Percentage analysis

Analysis of **(Table 5 & Figure 3)** shows that **GGSIP, JNU** and **JIIT** are at the **top** with 100% (5 out of 5) services under study. It is followed by **DU and JMI** at **second** position with 60% (3 out of 5) services, **JH** at **third** with 40% (2 out of 5) services. **IARI** is lowest at **fourth** rank with 20% (only 1 out of 5) service components understudy. **Overall 68.57% (24 of 35) user education & orientation services of selected university libraries are web enabled.**

Reference service: Four elements studied under this category are presented in **(Table - 6).**

Table 6: Web enabled Reference service

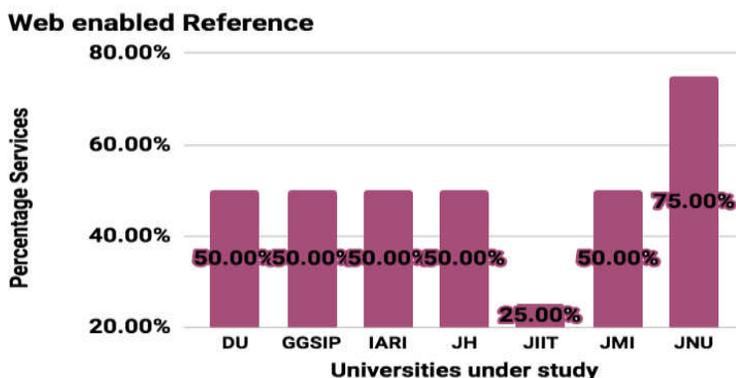| S. No.	e- information Service/ Activity	DU	GGSIP	IARI	JH	JIIT	JMI	JNU	Total Check Points
1	Web-based reference tools	1	1	1	1	N	1	1	**6**
2	Electronic research guides	N	N	N	N	N	N	1	**1**
3	Online helpdesk services/Virtual reference desk/Ask-a-librarian	1	1	1	1	1	1	1	**7**
4	Online library chat	N	N	N	N	N	N	N	**0**
	Total components	**2**	**2**	**2**	**2**	**1**	**2**	**3**	**14**

Figure 4: Percentage analysis

Analysis of **(Table 6 & Figure 4)** shows that **JNU** is at top with 75% (3 out of 4) services. Rests of five centres (except JIIT) are at rank **two** with 50% (2 out of 4) services. **JIIT** is at rank **three** with 25% **(**only 1 out of 4) service components under study**. Overall 50% (14 out of 28) user education & orientation services of selected university libraries are web enabled.**

Institutional Repository: Four elements studied under this category are presented in **(Table - 7).**

Table 7: Web enabled institutional repository service

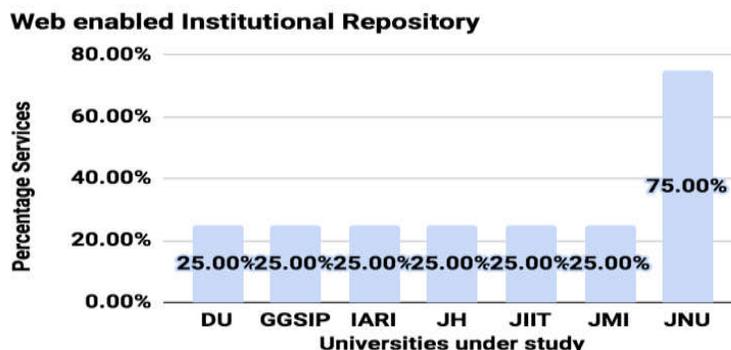| S. No.	e- information Service/ Activity	DU	GGSIP	IARI	JH	JIIT	JMI	JNU	Total Check Points
1	Question papers	N	N	1	N	N	N	N	**1**
2	In-House Research papers	N	N	N	N	N	N	1	**1**
3	Thesis-Dissertations	1	1	N	1	1	1	1	**6**
4	Faculty Publication	N	N	N	N	N	N	1	**1**
	Total components	**1**	**1**	**1**	**1**	**1**	**1**	**3**	**9**

Figure 5: Percentage analysis

Analysis of **(Table 7 & Figure 5)** shows that **JNU** is at **top** with 75% (3 out of 4) services. Rests of six centres are at number **two** with 25% (only 1 out of 4) service components under study. Access to Thesis & Dissertations is directly through the website of university libraries or indirectly facilitated through Shodhganga of Inflibnet. **Overall only 32.14% (only 9 out of 28) components of Institutional repository are web enabled of university libraries.**

RQ - 3: (Table 8) reveals the mean percentage of all elements of web enabled information services under study. It shows that **JNU** is on the **first** rank with 91.30% (21 checkpoints out of 23) services via their website. It is leading in all five services under study. Many of its services like electronic research guide, proactive table of contents, in-house research papers and faculty publications are offered via its web site. It is self archiving its institutional publications also.

GGSIP is at **second** rank with 65.22% (15 out of 23 checkpoints), while **DU** and **JMI** with 60.87% (14 out of 23) are at rank **three**. **JIIT** is at fourth rank with 52.17% (12 out of 23 checkpoints). **JH** is at **fifth** rank with 47.83% (11 out of 23) services. **IARI** is at the last **sixth** rank with 39.13% (9 out of 29 checkpoints).

Overall Mean percentage of selected and studied web enabled information services is 59.63%. JIIT, JH and **IARI** are providing less than the overall mean percentage of web enabled information services considered in the study.

Table 8: Ranks of university libraries

University libraries	Rank	Frequency/ check point out of 23	Percentage (%)
JNU	1	21	91.30
GGSIP	2	15	65.22
DU	3	14	60.87
JMI	3	14	60.87
JIIT	4	12	52.17
JH	5	11	47.83
IARI	6	9	39.13
Mean			**59.63**

DISCUSSION, RECOMMENDATIONS AND CONCLUSION

The most important role of a university library is to collect, maintain and preserve resources for forthcoming generations as well as make them accessible for use and to facilitate education and research. They need to be aware of the www and use its varied tools to achieve their goals and provide information services in the best possible way. Presence of web 2.0 tools were also studied by the researcher but no web 2.0 tool (like facebook, twitter, RSS etc.) except interactive websites is being used by selected and sampled university libraries, which is a very shocking fact, looking into the availability of good quality infrastructure available to use advanced ICTs and facilitate web enabled

information services. There is shortage of manpower in the libraries, and many posts are lying vacant. That means limited skilled manpower to support the web services. There is also no IT support to the libraries.

The library ecosystem is changing, so do the patron worlds and expectations. The library professionals need to cultivate the habit of interaction, lead the change in scholarly communication, designing information products, and developing information marketing programmes. They need to attend capacity building workshops to update themselves and fine tune their ICT skills. In the light of this it is recommended that librarians endeavour to make provision of more web enabled information service through their websites as well as integrate varied web 2.0 tools to provide ease of access to their patrons. The authorities need to fill up the vacant posts of university libraries need with skilled staff and IT support need to be given to libraries.

Overall, the performance of online or web enabled library services is far from satisfactory (except JNU) and can be rescaled in many institutions. Library professionals have to be techno savvy to understand net generation patrons, use quality infrastructure available to them and provide varied web enabled information services to attract patrons and make them more comfortable. It is also suggested that web enabled information services provided by other information centers be studied by sampled university libraries, evaluate the quality of these services taking the viewpoint of patrons into consideration and implement them to provide more and better web enabled information services to the patrons. The implementation of web technology could be realized only when the library personnel are skilled, and passionate to use ICT and web 2.0 tools.

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