

CONTENT EVALUATION AND THE DESIGN TRENDS OF NATIONAL INSTITUTES OF TECHNOLOGY (NITS) LIBRARY WEBSITES OF INDIA: AN EVALUATIVE STUDY

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In the digital era, ICT (Information Communication Technology) tools have made a tremendous impact in every field. With the help of ICT tools the libraries have brought up a good number of services which can be disseminated easily to their end users. While the websites form the gateway of an institution through online mode, the library website is a beautiful creation through which information and services can be disseminated. The present study is confined to the design and web contents of the library websites/ web page of 27 NITs. On the basis of the previous evaluations of websites with 108 criteria under the 13 headings were enumerated to analyze the contents of the NIT libraries website. The study revealed that NIT Allahabad takes maximum time (422.68 seconds) @ 56K connection rate for downloading their website where NIT Agartala takes the least with 5.48 seconds.

Keywords: Content Analysis; Web Content Analysis; NITs Library Website; Website Content; Library Web Page, Library Website.

INTRODUCTION

A Library forms the backbone of an institution. It plays a vital role in the development of the institution. The collection of the materials (print as well as non-print) has to be rich so as to attract the users and satisfy their needs. The main aim of the library has to build up the best services for the fulfillment of users' satisfaction. Rich collections with the best services equally produce the outstanding product. With the development of Information Communication Technology (ICT) tools, the librarians have brought out the beautiful platform, 'libraries website', through which the information and the services can be disseminated to their end users. The development of library websites was started in the 1990s. ICT has changed the overview of libraries from traditional to digital era. The library websites are the primary source of information for an institution. It helps to communicate with the users who cannot frequently visit the library due to their certain engagement of works. Library website is actually a communication tool between the services of the library and their users in the digital world. It is only due to the impact of ICT and information explosion; the information-seeking behaviour of the users has been changed. Since, the library website is a medium for disseminating the information to their end users, the librarians/developers must keep in mind for the contents which are available in their respective websites. Richness of web content of library websites depends upon the respective library's collection, services, facilities, administrative support and updating policy etc. [1]. The library website must provide all the general information, rules, timings, facilities, collection and services in details. It has to be maintained and updated frequently so that the users can get the latest information at their desk. Content is known as the most critical element of a website [2]. Content available on the website must be authentic and should represent the scenario of the website designed for.

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Overview of National Institutes of Technology (NITs)

In 1955, 8 Regional Engineering Colleges (REC) were set up by the Planning Commission two in each region – east, west, north and south. These institutes were registered as autonomous bodies under the Society Registration Act 1860 and affiliated to the State Universities in their respective regions. Gradually, 17 RECs were established in various states. The main aim of setting up these RECs was to create the required technical manpower by providing undergraduate education and training in different branches of engineering and technology. In 2003, 17 erstwhile RECs were rechristened as National Institute of Technology (NITs) and taken over as fully funded institutes of the Central

Government and granted deemed university status (<http://mhrd.gov.in/technical-education-5>) [3]. There are altogether 31 NITs in the different parts of the country. All 31 NITs are funded by the Government of India. These are among the top ranked engineering colleges in India. These institutions have been declared as institutes of National importance alongside the Indian Institutes of Technology (IITs) by an Act of Parliament of India. The list of NITs along with the library website/webpage links is shown in Table 1. Four NITs (Rourkela, Surathkal, Puducherry, and Andhra Pradesh) have been excluded from the present study because of the inaccessibility of their library website during survey period (i.e. 15th December, 2016- 15th January 2017).

Table 1: List of National Institutes of Technology (NITs) of India

S. No.	Name of the Institute	Library Web page/Website	State
1	Dr. B.R. Ambedkar National Institute of Technology	http://www.nitj.ac.in/index.php/nitj_cinfo/index/66	Punjab
2	Malaviya National Institute of Technology Jaipur	http://online.mnit.ac.in/Library/	Rajasthan
3	Maulana Azad National Institute of Technology	http://www.web.manit.ac.in/index.php?option=com_content&view=article&id=85&Itemid=165	Bhopal
4	Motilal Nehru National Institute of Technology Allahabad	http://mnnit.ac.in/index.php/lib-home	UP
5	National Institute of Technology Mizoram	http://www.nitnz.ac.in/DisplayPage.aspx?page=ck	Aizawl
6	National Institute of Technology Warangal	http://www.nitw.ac.in/department/library/	Andhra Pradesh
7	National Institute of Technology Yupia	http://www.nitap.in/facilities/library.aspx	Arunachal Pradesh
8	National Institute of Technology Silchar	http://www.nits.ac.in/academics/library.php	Assam
9	National Institute of Technology Patna	http://www.nitp.ac.in/php/facilities.php?pp=clib	Bihar
10	National Institute of Technology Calicut	http://www.library.nitc.ac.in/	Kerala
11	National Institute of Technology Raipur	Aboutus">http://www.nitr.ac.in/dept-cl.php?dept>Aboutus	Chhattisgarh
12	National Institute of Technology Delhi	http://www.nitdelhi.ac.in/centralLibrary.php	New Delhi
13	National Institute of Technology Goa	http://www.nitgoa.ac.in/Deptindex.aspx?page=a&ItemID=93&nDeptID=20	Goa
14	National Institute of Technology Hamirpur	http://library.nith.ac.in/library	Himachal Pradesh
15	National Institute of Technology Kurukshetra	http://www.nitkkr.ac.in/pagesUI/homePage.jsf?pageEvent=50	Haryana
16	National Institute of Technology Hazratbal	http://www.nitsri.net/library/index.htm	Jammu & Kashmir
17	National Institute of Technology Jamshedpur	http://www.nitjsr.ac.in/library/	Jharkhand
18	National Institute of Technology Manipur	http://www.nitmanipur.ac.in/DepartmentHome.aspx	Manipur

19	National Institute of Technology Meghalaya	http://nitmeghalaya.in/nitm_web/fp/central_library/central_library_about.html	Meghalaya
20	National Institute of Technology Nagaland	http://nitnagaland.ac.in/homenew/facilities/library.y.jsp	Nagaland
21	National Institute of Technology Sikkim	http://kic.nitsikkim.ac.in/	Sikkim
22	National Institute of Technology Tiruchirappalli	http://www.nitt.edu/home/students/facilities/services/library/	Tamil Nadu
23	National Institute of Technology Agartala	http://www.nita.ac.in/NITAmain/institute/facilities.html	Tripura
24	National Institute of Technology Govt. Polytechnic, Srinagar (Garhwal)	http://nituk.ac.in/library.php	Uttarakhand
25	National Institute of Technology Durgapur	http://www.nitdgp.ac.in/library.php	West Bengal
26	Sardar Vallabhbhai National Institute of Technology Ichchhanath	http://www.svnit.ac.in/resources/library	Gujarat
27	Visvesvaraya National Institute of Technology Nagpur	http://www.vnit.ac.in/index.php/centers/academic-service-centers/2014-11-10-11-26-00	Maharashtra

LITERATURE REVIEW

The study is focused on the content analysis of the NITs' library websites /web pages. Many studies have been brought out for the evaluation criteria of the libraries' websites and their usability over the decades, but very few have conducted website content analysis. Literature review covers only similar studies in the following paragraphs.

Clausen [4] has conducted a survey for 12 Danish academic library websites. The author has derived thirty-eight (38) web site evaluation criteria from the previous studies, which have been further sub-divided into six categories, i.e., design and structure, quality of information, links and navigation, aesthetic impression, miscellaneous, and general assessment. It was found from the study that the Danish academic libraries in question are above average compared to that of the websites in general. The author further suggests that there is a need of regular updation of the library websites for its development which can be done with the help of user studies and comparative evaluation. Qutab and Mahmood [5] analysed 52 websites of Pakistan which includes academic, special, public and national libraries. The authors have prepared 77 item checklists for analyzing the library websites taken for the study. The study found that the placement of library functions like OPAC, circulation, reference and other interactive services are not highly observed and further suggested and

emphasized on the importance of user centric studies for developing the interactive websites so as to fulfill the information seeking needs of users. Madhusudhan [6] has evaluated the content features of 12 selected IIT libraries' websites with a combined approach of qualitative and quantitative analyses. For the study, 11 qualitative checklists were designed and 90 items of checklists was designed for the quantitative evaluation of the website. A quantitative five-point rating scale was implemented where the study revealed that the IIT Madras library website scored the highest percentage with 78.88 per cent and the library website of IIT Gandhinagar scored the least percentage with 33.33 per cent. Aharony [7] analyzed the academic libraries websites during the year 2000 and 2010. He has selected 31 academic libraries' homepages from the ACRL accredited LIS schools. The study reveals that the library websites have changed over the ten years (2000-2010) with an immense use of e-journals and Web 2.0 applications, and even the graphics have also been used in the websites for attracting their users. Madhusudhan and Ahmed [8] evaluated the six select IIM libraries' websites with an approach of qualitative and quantitative analyses. 11 qualitative checklists have been prepared and 135 quantitative checklists have been designed for the study. A five-point rating scale was designed for quantitative analyses for rating the IIM library websites and the study reveals that the library website of IIM Lucknow as the best

amongst the six IIMs taken for the study scoring the highest percentage with 65.92 per cent and the library website of IIM Bangalore scored the least with 42.96 percent. Joicy and Rekha [9] analysed 44 central university websites of India. The study revealed that link analysis of the central universities websites is an unexplored area of webometric research. The study finds that all the basic information and details (history, links to contact, copyright, news and events, etc.) are available in the majority of the central university websites whereas few websites provide opportunity for user interaction in the form of feedback.

OBJECTIVE OF THE STUDY

The specific objectives of the study are:

- To examine the National Institutes of Technology library web pages/websites.
- To determine the library services and facilities offered by their respective library web pages/websites.
- To suggest measures for the improvement of the NIT libraries web pages/websites.

METHODOLOGY

For the present study survey method and observation techniques have been used for data collection from the respective libraries website of NITs. A checklist was designed for the data collection. Based on the previous evaluations of websites, 108 criteria under the 13 headings were brought out to analyze the contents of the NIT libraries websites. The data of webpage size and download speed have been collected after the analysis of the NIT libraries website URL respectively in the WebSiteOptimization.com [http://www.websiteoptimization.com/services/analyze/\[10\]](http://www.websiteoptimization.com/services/analyze/[10]).

The present study focuses the evaluation of the web contents of 27NITs listed in Table 1. The select libraries' websites were analyzed at various times and the data were presented in tabular form using Microsoft Excel software.

DATA ANALYSIS

Availability of NIT Library Websites/Webpages

Table 2 shows the availability of the NIT Library websites/webpages, under which three criteria has been listed. It is observed from the study that the four NITs, i.e., NIT Rajasthan, Calicut, Hamirpur, and Sikkim, have their separate library websites each, providing the information related to the library and the four other NITs, i.e., NIT Bhopal, Patna, Agartala, and Nagpur has a library page dedicated to their institution's website where 19 other NITs have their library webpages.

Table 2: Availability of NIT Library Website/Webpage

S. No.	Availability of NIT Library Websites/Webpages	No. Of NITs (N=27)
1.	Library has Website	4 (14.8%)
2.	A Page Dedicated	4 (14.8%)
3.	Library has Webpage	19 (70.4%)

Accessibility of Library Webpage/Website

Accessibility plays a pivotal role in the world of digital and the paper-less era. It is necessary to have the direct link of the important contents on the homepage of their respective institutes. It helps the users to avail the accessibility of the contents easily at one search. Table 3 gives a brief idea about the accessibility of the NIT library webpages/websites. It has been brought out from the study, that only 4 NITs, i.e., NIT Jamshedpur, Tiruchirappalli, Uttarakhand, and Surat, have direct link on their respective homepage. The other 23 NITs have the library link under facilities, quick links, academic infrastructure, etc, which made the users to browse and find the library link under each contents.

Table 3: Accessibility of Library Webpage/Website

S. No.	Accessibility of Library Webpage/Website	No. Of NITs (N=27)
1.	Direct Link on Parent's Home Page	4 (14.8%)
2.	Link under facilities, Quick Links, Academics Infrastructure, etc.	23 (85.2%)

Classification of Websites by URL

URL stands for Uniform Resource Locator which gives an exact location of a particular website/webpage on the web. Table 4 provides information about the URL of the NITs. It is observed from the study that majority of the institutes (23) have their URL as ‘.ac.in’ where NIT Tiruchirappalli has ‘.edu’ as their URL and NIT Hazaratbal has ‘.net’ as their URL. It is observed that NIT Arunachal Pradesh and NIT Meghalaya have their URL as ‘.in’ respectively.

Table 4: Classification of Websites by URL

S. No.	URL	Frequency (N=27)
1.	.ac.in	23 (85.2%)
2.	.edu	1 (3.7%)
3.	.in	2 (7.4%)
4.	.net	1 (3.7%)

Website Classification by Webpage Size

The data for the web page size and the download speed of the respective library website is collected with the help of WebSiteOptimization.com (Web Page Analyzer Tool <http://www.websiteoptimization.com/services/analyze/>). Table 5 depicts the total size of the website in bytes. The site of any institute/organization should be constructed in such a way that it should be accessed within per second [11]. 56K connection rate (download speed) has been taken to represent the other connection rates. NIT Rajasthan, Arunachal, Hamirpur, and Surat have exceeded the maximum size (3000000 bytes) of the bytes so the data cannot be retrieved from the Web Page Analyzer Tool. Table 5 clearly shows that the download speed @ 56K is highest in NIT Allahabad (422.68 seconds) due to the total size of the website and the total size of the images available on the site. It is a well known fact that if the size of the image is large the download time of the page will be more. Out of all the 27 NITs taken for the study, NIT Agartala takes the minimum time (5.48 seconds) for downloading the page.

Table 5: Website Classification by Webpage Size

NITs	Total Size of the Website in bytes	Total size of the images in bytes	Percentage of Images in Total Size	Download time @ 56K seconds
NIT Punjab	1235155	248884	20.15%	250.36 seconds
NIT Rajasthan	-	-	-	-
NIT Bhopal	999133	141658	14.18%	216.53 seconds
NIT Allahabad	2064659	1356165	65.68%	422.68 seconds
NIT Mizoram	2026460	1865894	92.07%	418.07 seconds
NIT Warangal	319740	116458	36.42%	80.12 seconds
NIT Arunachal Pradesh	-	-	-	-
NIT Silchar	1114736	500400	44.89%	226.17 seconds
NIT Patna	218058	53726	24.64%	47.26 seconds
NIT Calicut	386472	44004	11.39%	82.22 seconds
NIT Raipur	36636	318	0.87%	10.50 seconds
NIT Delhi	685378	441298	64.39%	139.39 seconds
NIT Goa	784415	98961	12.61%	162.53 seconds
NIT Hamirpur	-	-	-	-
NIT Kurukshetra	168704	80868	47.93%	47.02 seconds
NIT Hazaratbal	74819	47707	63.76%	17.91 seconds
NIT Jamshedpur	2031816	1915651	94.28%	410.74 seconds
NIT Manipur	250552	82076	37.76%	59.93 seconds
NIT Meghalaya	170199	165516	97.25%	37.52 seconds
NIT Nagaland	302700	254478	84.07%	62.13 seconds
NIT Sikkim	1285342	1249103	97.18%	260.17 seconds
NIT Tiruchirapalli	1674700	1621387	96.81%	338.97 seconds

NIT Agartala	15431	3996	25.89%	5.48 seconds
NIT Uttarkhand	1624165	1203319	74.09%	328.69 seconds
NIT Durgapur	808527	189856	23.48%	162.94 seconds
NIT Surat	-	-	-	-
NIT Nagpur	1087217	434045	39.92%	233.68 seconds

Website Aids and Tools

Four criteria have been listed under the heading website aids and tools in Table 6, where 3 NITs', i.e., Arunachal, Jamshedpur and Agartala have all the four criteria in their respective websites. It is observed from the study that only NIT Punjab has not given any information about RTI in their website, whereas search options is the only one which is available among the four listed under the heading. Seven more NITs have provided only one same criteria (RTI) among the four listed above i.e., NIT Bhopal, Raipur, Delhi, Hazaratbal, Meghalaya, Nagaland, and Uttarakhand have the information about RTI in their website. Feedback is one of the important features of any website. It helps to reach the users' view point to the authority of the website with the help of which the website can be made more efficient and effective. It is observed from the study that there are only 8 NITs which provide feedback in their websites, namely NIT Rajasthan, Mizoram, Arunachal, Silchar, Goa, Jamshedpur, Sikkim, and Agartala. Nine NITs which have given the information about the sitemap in their website are: NIT Warangal, Arunachal, Patna, Calicut, Goa, Jamshedpur, Manipur, Tiruchirappalli, and Agartala.

Table 6: Website Aids and Tools

S. No.	URL	Frequency (N=27)
1.	Search Option	14 (51.8%)
2.	Feedback	8 (29.6%)
3.	RTI (Right to Information)	26 (96.3%)
4.	Sitemap	9 (33.3%)

Navigation of the Website

Table 7 shows the classification of library websites/WebPages with respect to the

navigation. This can be achieved by the proper titles, home links available in all the web pages of a particular website. Three criteria have been listed under the heading. It is observed from the study that all the 27 NIT libraries' web pages/websites taken for the study have made available the home link respectively. And only NIT Agartala library web page title does not describe the content or location in site structure. 6 NITs, namely NIT Calicut, Goa, Hamirpur, Manipur, Meghalaya, and Sikkim, fulfil the first criterion of navigation.

Table 7: Criteria for the Navigation of the Library Website/Webpage

S. No.	Criteria	Frequency (N=27)
1.	Page Title Appears in the Top Window Bar	6 (22.2%)
2.	Home Link Available on Library Webpage	27 (100%)
3.	Page Title Describe Content or Location in Site Structure	26 (96.3%)

Webpage Classification by Design Factor

Designing a web is the first step of creating the website. Different aspect like layout, languages, graphic design is required for designing a web. Table8 depicts the design factor of website where only four criteria have been selected. It is observed from the study that all the 27 NITs followed the same website page format in all the web pages. View resolution is suggested only in NIT Arunachal and Uttarakhand whereas browser compatibility is suggested by NIT Bhopal, Arunachal and Uttarakhand. Number of visitors/ counter is given in only 5 NITs viz, NIT Raipur, Hamirpur, Hazaratbal, Manipur, and Agartala.

Table 8: Webpage Classification by Design Factor

S. No.	Criteria	Frequency (N=27)
1.	View Resolution is Suggested	2 (7.4%)
2.	Browser Compatibility is Suggested	3 (11.1%)
3.	Site's Page Format is Followed in all the Webpages	27 (100%)
4.	No. of Visitor is given	5 (18.5%)

Site Description

Site description is another important feature of website design. The designer must keep in mind the user and develop the website accordingly. Three criteria have been listed under this category in Table 9. It is observed from the study that there are 2 NIT library websites/webpages which use graphics along with the text in communicating and providing the information with their users. They are NIT Silchar, and Tiruchirappalli. The other 25 NITs are using only text version in their websites/webpages for providing the information. It is further observed that 18 NITs offer their information in more than one language, i.e., English. Out of which 12 NITs, namely NIT Bhopal, Allahabad, Mizoram, Arunachal, Patna, Calicut, Goa, Kurukshetra, Jamshedpur, Uttarakhand, Surat, and Nagpur offer Hindi as the second language. NIT Punjab offers information in three language, English, Hindi, and Punabi. NIT Hazaratbal offers information in 8 languages. Four other NITs, i.e., NIT Warangal, Silchar, Sikkim, and Tiruchirappalli offer information in 104 languages.

Table 9: Site Description

S. No.	Criteria	Frequency (N=27)
1.	Use of Graphics	2 (7.4%)
2.	Text only Version	25 (92.6%)
3.	Site Offers Information in more than one Language	18 (66.7%)

Authority Details

Table 10 presents the authority details of the NIT websites. The authority plays a vital role in the creation of any website. The authority has all the legal power to include or exclude the required information and at times update the information on the website. They take the whole responsibility provided in the website. Under this heading two criteria have been listed. It is observed from the study that other than NIT Bhopal and Allahabad, all NITs have provided information about the copyright statement and no. information is given about the maintenance of the websites by any of the institutions, under the purview.

Table 10: Authority Details

S. No.	Criteria	Frequency (N=27)
1.	Copyright Statement	25 (92.6%)
2.	Maintenance Details	0

General Information about the Library

Table 11 gives the details of the general information available on the NIT library page. It is indeed important to provide a brief detail of the library of the particular institution. It is observed from the study that 24 NITs have provided information about the library whereas 3 NITs don't. They are NIT Agartala, Bhopal, and Calicut.

Aims & objectives are the important part of any institution or organization. Only 5 NITs namely NIT Silchar, Nagaland, Delhi, Hamirpur, and Tiruchirappalli have provided information on that. The library's webpage/website must provide the 'news and events', as it keeps the users updated. 8 NITs have provided information on that. 21NITs have provided the library timings on the webpage where 6 NITs, viz NIT Agartala, Meghalaya, Arunachal, Patna, Goa, and Hamirpur do not. 17 NITs (those of Silchar, Manipur, Nagaland, Sikkim, Punjab, Rajasthan, Bhopal, Allahabad, Calicut, Raipur, Goa, Hamirpur, Kurukshetra, Jamshedpur, Tiruchirappalli, Uttarakhand, and Nagpur) have given the list of library staff in their respective websites. Floor plan/location guide have been given by NIT Delhi, Jamshedpur, and Nagpur only. IT infrastructure has been provided by NIT Silchar and Durgapur.10 NITs have provided the information

about the membership details in their respective website/webpage. They are: NITs of Silchar, Mizoram, Nagaland, Warangal, Delhi, Goa, Kurukshetra, Uttarakhand, Surat and Nagpur. Seven NITs, those of Nagaland, Allahabad, Calicut, Goa, Hamirpur, Jamshedpur, and Surat have provided the list of library advisory committee on their website. Ask a librarian facility has been given by NIT Silchar and Goa.

Table 11: General Information about the Library

S. No.	Criteria	Frequency (N=27)
1	About the Library	24 (88.9%)
2	Aims/Mission Statement	5 (18.5%)
3	Library news and events	8(29.6%)
4	Library Hour	21 (77.8%)
5	Library Staff	17 (62.9%)
6	Library Rules	13 (48.1%)
7	Membership Details	10 (37%)
8	Floor plan/Location guide	3 (11.1%)
9	IT Infrastructure	2 (7.4%)
10	Library Advisory Committee	7 (25.9%)
11	Library Sections	6 (22.2%)
12	Ask a librarian	2 (7.4%)

Library Collection

The library must have the huge number of collection either physical or in electronic form so as to make all the information available to the needy users. The detail information about the collection of the library should be given in the library webpages/websites. Table 12 provides information about the library collection available in the respective library web pages/websites of NITs. Information about Book collection is not available only in NIT Hazaratbal whereas as many as nine NITs' websites, those of NIT Manipur, Meghalaya, Mizoram, Nagaland, Allahabad, Delhi, Jamshedpur, Uttarakhand, and Nagpur, have not provided any information about the Journals. Information about the reference sources is available on the websites of NIT Manipur, Meghalaya, Mizoram, Rajasthan, Raipur, Delhi, Kurukshetra, Jamshedpur, Uttarakhand, and Durgapur, whereas Theses/ Dissertations' information is given on the sites of NIT Silchar, Punjab, Delhi, Hamirpur, Kurukshetra, Tiruchirappalli, and Surat. Seven NITs didn't provide any information about their collection of

newspaper/magazines; they are, NIT Agartala, Manipur, Meghalaya, Warangal, Kurukshetra, Tiruchirappalli, and Durgapur. Information about reports is given on the sites of NIT Silchar, Mizoram, Hamirpur, and Tiruchirappalli. Information about conference proceedings is available on the websites of NIT Manipur, Arunachal, and Hamirpur. Similarly, Information about the collection of the audio-visual material is available on the sites of NIT Silchar, Manipur, Nagaland, Punjab, Rajasthan, Bhopal, Warangal, Kurukshetra, Hazaratbal, Tiruchirappalli, Uttarakhand, Surat, and Nagpur. The information about the collection of CD ROMs is available on the websites of NIT Silchar, Manipur, Mizoram, Nagaland, Sikkim, Punjab, Rajasthan, Bhopal, Warangal, Delhi, Goa, Kurukshetra, Hazaratbal, Tiruchirappalli, Surat, and Nagpur, whereas the information about the collection of standards is given on the library webpages/websites of NIT Silchar, Punjab, Hamirpur, Kurukshetra, Tiruchirappalli, Durgapur, Surat, and Nagpur. The information about the collection of reprints, photographs and pamphlets is available on the sites of NIT Surat; NIT Sikkim and NIT Patna respectively.

Table 12: Library Collection

S. No.	Criteria	Frequency (N=27)
1	Books	26 (96.3%)
2	Journals	18 (66.7%)
3	Reference Sources	10 (37%)
4	Theses/Dissertations	7 (25.9%)
5	Newspaper/Magazines	20 (74.1%)
6	Reports	4 (14.8%)
7	Conference Proceedings	3 (11.1%)
8	Audio-visual material	13 (48.1%)
9	CD ROM	16 (59.2%)
10	Standards	8 (29.6%)
11	Reprints	1 (3.7%)
12	Photographs	1 (3.7%)
13	Pamphlets	1 (3.7%)

Information about the Library Services

The back bone of any library is its services. The library service may include reference service, CAS, SDI, ILL, book bank, etc. Table 13 provides information about the library services available on

the websites/webpages of NIT libraries. 16 different criteria have been listed under this category. It is observed from the study that 21 NITs websites/webpages have provided information about the OPAC (Online Public Access Catalog) whereas NIT Agartala, Manipur, Meghalaya, Sikkim, and Bhopal have not given any information about the OPAC services on their library webpages. Information about the research and reference service is given on the sites of NIT Silchar, Manipur, Rajasthan, Warangal, Goa, Kurukshetra, Hazaratbal, Jamshedpur, Surat, and Nagpur library web page/website. Information about the referral service is available only on the site of NIT Nagpur. Information about the reprographic service is available in NIT Silchar, Agartala, Nagaland, Sikkim, Punjab, Rajasthan, Allahabad, Warangal, Raipur, Kurukshetra, Hazaratbal, Jamshedpur, Tiruchirappalli, Durgapur, Surat, and Nagpur. Information about the CAS (Current Awareness Service) is available in NIT Silchar, Goa, Tiruchirappalli, and Nagpur. And SDI (Selective

Dissemination of Information) service is available only in NIT Silchar and Nagpur. Newspaper clipping service is given in NIT Silchar, Manipur, and Goa. DDS (Document Delivery Service) is available in NIT Silchar, Manipur, Punjab, Raipur, and Tiruchirappalli. Information alert service is given in NIT Uttarakhand. 9 NITs, i.e., NIT Silchar, Manipur, Rajasthan, Warangal, Hamirpur, Tiruchirappalli, Uttarakhand, Durgapur, and Nagpur, have provided information about the ILL (Inter-library loan) service in their respective library weppage/website. User education service is available only in NIT Raipur and Durgapur. Information about the extension service is given only in NIT Uttarakhand; bibliographic service in NIT Warangal, and Nagpur; information about the video viewing facility is given in NIT Allahabad and Jamshedpur. Information about the book bank service is available in 14 NITs; NIT Silchar, Rajasthan, Bhopal, Allahabad, Raipur, Delhi, Hamirpur, Kurukshetra, Hazaratbal, Jamshedpur, Tiruchirappalli, Uttarakhand, Surat, and Nagpur.

Table 13: Library Services

S. No.	Criteria	Frequency (N=27)
1	OPAC	21 (77.8%)
2	Research and Reference	10 (37%)
3	Referral Service	1 (3.7%)
4	Reprographic Service	16 (59.2%)
5	CAS	4 (14.8%)
6	SDI	2 (7.4%)
7	Newspaper Clippings	3 (11.1%)
8	DDS	5 (18.5%)
9	Information alerts	1 (3.7%)
10	User education service (orientation)	2 (7.4%)
11	Inter-library loan	9 (33.3%)
12	Extension service	1 (3.7%)
13	Bibliographic service	2 (7.4%)
14	Book Bank	14 (51.8%)
15	Video viewing facility	2 (7.4%)

Information about E-Resources

In the age of ICT, e-resources are the collection mostly preferred by the users. Libraries try to disseminate the services through e-resources which may be easily accessed by the users at his/her own desk at 24X7. Table 14 provides the information on e-resources available on the library web pages/websites of

NITs. 16 different criteria have been listed under this category. Information about the e-books is not available on the library's web page/website of NIT Agartala, Meghalaya, Punjab, Patna, Hamirpur, Hazaratbal, Surat, and Nagpur. Similarly, information regarding E-Journals is not available in NIT Manipur, Meghalaya, Nagaland, and Hazaratbal, whereas information about the e-theses & dissertations is

available only in NIT Calicut and Hamirpur. Information about the institutional repository is given on the web pages/websites of NIT Warangal, Calicut, Goa, and Hazaratbal, in addition to information about digital library on the sites of NIT Warangal, Calicut, Hamirpur, Kurukshetra, Tiruchirappalli, and Surat. Information pertaining to E-databases is available on the web pages/websites of 14 NITs, whereas NIT Silchar, Agartala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Arunachal, Warangal, Patna, Calicut, Kurukshetra, and Jamshedpur do not provide any information about it. E-question papers are given only in NIT Goa and Surat library web pages respectively. Online newspaper link is available on the sites of NIT Delhi, Hamirpur, and Uttarakhand. Details regarding NIT consortium is given only on the site of NIT

Warangal. 16 NITs provide information about library consortium, whereas NIT Agartala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Arunachal, Punjab, Raipur, Goa, and Uttarakhand do not. Links of ACM, IEEE, ASME, etc., have been given on 17 NIT library web pages/websites, where NIT Silchar, Agartala, Nagaland, Arunachal, Allahabad, Calicut, Raipur, Delhi, Tiruchirappalli, and Uttarakhand do not. EDUSAT is provided on the site of NIT Warangal; kNimbus on NIT Calicut, Delhi, and Goa; ASTM standards on NIT Calicut; J-Gate portal on NIT Jamshedpur library web page. NPTEL video lecture is provided in NIT Allahabad, Delhi, Goa, Kurukshetra, Jamshedpur, Tiruchirappalli, Uttarakhand, and Durgapur library web page/website.

Table 14: E-Resources

S. No.	Criteria	Frequency (N=27)
1	e-books	19 (70.4%)
2	e-journals	23 (85.2%)
3	e-theses & dissertations	2 (7.4%)
4	Institutional repository	4 (14.8%)
5	Digital Library	5 (18.5%)
6	e-databases	14 (51.8%)
7	e-question papers	2 (7.4%)
8	Online Newspaper	3 (11.1%)
9	NIT Consortium	1 (3.7%)
10	Library Consortium	16 (59.2%)
11	ACM, IEEE, ASME, etc	17 (62.9%)
12	EDUSAT	1 (3.7%)
13	kNimbus	3 (11.1%)
14	ASTM Standards	1 (3.7%)
15	NPTEL Video Lecture	8 (29.6%)
16	J-Gate Portal	1 (3.7%)

Value-Added Service

Each and every institution must try to provide the value added services to their users. This will be a great help for attracting the users towards the library. Under Table 15 value added services, provided on the library web pages of NITs, using 21 criteria have been listed. It is observed from the study that the list of new arrival is offered by NIT Rajasthan, Bhopal, Goa, Hamirpur, and Hazaratbal. Mobile OPAC service is offered by NIT

Mizoram, Delhi, and Hamirpur, where it is mentioned on the library web page of NIT Goa that Mobile OPAC is coming soon. Service of e-book reader is available only in NIT Sikkim; sms based notification in NIT Hamirpur; online courses offered in NIT Hamirpur; details about the projects in progress is available in NIT Nagpur; shelf-guide in NIT Kurukshetra; book recommendation and virtual classroom in NIT Jamshedpur; purchase recommendation, Moodle, demo/training/workshop

and anti-plagiarism support in NIT Goa; untraceable publication register in NIT Punjab; BIS and IRC Codes, attending users queries, services to fee based visitors, and links to other IITs, IIMs, and NITs are available only in NIT Rajasthan; circulation to

library bulletin in NIT Warangal. External membership details are available in NIT Silchar, Manipur, Sikkim, Punjab, Hazaratbal, Tiruchirappalli, and Surat.

Table 15: Value-Added Services

S. No.	Criteria	Frequency (N=27)
1	New arrival list	5 (18.5%)
2	Mobile OPAC	3 (11.1%)
3	e-book reader	1 (3.7%)
4	SMS based notification	1 (3.7%)
5	Online Courses	1 (3.7%)
6	Projects in progress	1 (3.7%)
7	Shelf guide	1 (3.7%)
8	Book recommendation	1 (3.7%)
9	Purchase recommendation	1 (3.7%)
10	Moodle	1 (3.7%)
11	Virtual Classroom	1 (3.7%)
12	External Membership	7 (25.9%)
13	Untraceable publication register	1 (3.7%)
14	BIS and IRC Codes	1 (3.7%)
15	Attending users queries	1 (3.7%)
16	Library Notices	4 (14.8%)
17	Services to fee based visitors	1 (3.7%)
18	Links to other IITs, IIMs, NITs	1 (3.7%)
19	Circulation of Library Bulletin	1 (3.7%)
20	Demo/Training/Workshop	1 (3.7%)
21	Anti-Plagiarism Support	1 (3.7%)

Statement of Responsibility

Table 16 provides information about the statement of responsibility of the respective libraries of NIT. Under this category, 5 criteria have been listed where only 8 NITs, i.e., NIT Allahabad, Calicut, Raipur, Goa, Hamirpur, Jamshedpur, Meghalaya, and Sikkim, have provided the postal address of their respective library in their library website/webpage. Only

two NITs, i.e., NIT Warangal and Hamirpur have given the fax number. And 5 NITs, i.e., NIT Punjab, Bhopal, Allahabad, Kurukshetra, and Jamshedpur have provided separate contact links on their respective websites. It is observed from the study that no single NITs have provided the information about all the five criteria listed in the Table 15.

Table 16: Statement of Responsibility

S. No.	Criteria	Frequency (N=27)
1	Postal Address	8 (29.6%)
2	Phone	18 (66.7%)
3	Fax	2 (7.4%)
4	Email	22 (81.5%)
5	Separate Contact Link	5 (18.5%)

Web 2.0 Tools

Web 2.0 tools are most frequently used by the people. With it, the dissemination of information gets easier to a great number of audiences. Table 17 depicts some of the Web 2.0 tools which are available in the respective NIT websites. It is observed that only 3 NITs, i.e., NIT Patna, Hamirpur, and Jamshedpur have given their Facebook page link in their website. Likewise NIT Patna, Hamirpur, and Hazaratbal provides Google+ link on their website. NIT Calicut and Jamshedpur provides their official YouTube link in their respective website. NIT Hamirpur provides Twitter link as well as Instagram page, where NIT Jamshedpur provides the page of ResearchGate and Pinterest. NIT Hazaratbal and Jamshedpur provides LinkedIn page respectively.

Table 17: Web 2.0 Tools

S. No.	Criteria	Frequency (N=27)
1	Facebook	3 (11.1%)
2	YouTube	2 (7.4%)
3	Twitter	1 (3.7%)
4	LinkedIn	2 (7.4%)
5	Google+	3 (11.1%)
6	Instagram	1 (3.7%)
7	ResearchGate	1 (3.7%)
8	Pinterest	1 (3.7%)

SUGGESTIONS

The following are some of the suggestions brought out from the present study:

- The NITs are the premier engineering institutes alongside the IITs (Indian Institutes of Technology) in India. Each one of them must prepare their separate library websites providing all the information and services offered by their respective libraries. This will help in attracting the users towards the library and making most of library services.
- The library websites must use graphics as well as text for communication of information which helps in attracting the users towards the information provided.
- The library website must avail all the contacts so that the users can easily reach to the concerned person if needed.

- The dead link should be removed from the website as it does not create any good impact towards the users and it has to be updated frequently.
- All the NITs must provide in-link facilities with the other NITs so that it can share the resources with one another and work collaboratively which will further help the students in enjoying the services.
- They must create their own institutional repositories which will help in disseminating the scholarly communication globally.

CONCLUSION

It is observed that the NIT library web page/website is different in many respects. It is revealed from the present study that the majority (23) of the NIT libraries do not have their separate library websites. The librarians and the library professionals must try to create a separate library website of the respective institutions where they can provide all the information related to the library and their services offered for their users. This will help in attracting the users towards the library. The library website must be effective and efficient for their end users in terms of information and services as well. The library website must provide the contact list of the concerned person (phone Nos., email ID, etc.) where the user can get in touch if they had a query or faced any problem. It has to be noted that the direct link of the library website must be placed on the homepage of the respective institution so that the user can easily retrieve the information with ease and will not create a chaos for finding the library link on the homepage. The study revealed that NIT Allahabad takes maximum time (422.68 seconds) @ 56K connection rate for downloading their website whereas NIT Agartala takes the least with 5.48 seconds. The study revealed that only 5 NITs, i.e., NIT Patna, Calicut, Hamirpur, Hazaratbal, and Jamshedpur offer Web 2.0 tools in their respective websites. It may be noted that Web 2.0 tools have made a great impact on library users, as it can easily disseminate the latest information to a great number of community. The authority must keep in mind to update the websites frequently and delete the dead links to create a good impression before the users.

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