

Content Analysis of Indian Institutes of Technology Libraries Web Portals: A Study

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ABSTRACT

Indian Institutes of Technology are identified as premier institutes of higher education and research in Technology in India. Having common goal, there is a need for cooperation among the libraries of the IITs. To achieve this kind of co-operation, there is need to design and develop a unique type of library portals containing resources and services of their individual libraries and also providing links to other IIT libraries. Further, there is also need to form an educational network specialized among the IIT libraries.

Keywords: Content analysis, Web portals, Indian Institute of Technology, library, network

1. INTRODUCTION

Library portals have offered great opportunities for the library and information professionals in higher education sector to give their services to the users a real boost. Semantic web has allowed users to search any kind of information from a single library portal. Library portals not only provide a gateway to an institution's resources by listing them for the users but also create direct links to the native interface of each resource. Such listings are available on most library websites today and provide resources from the library as well as web. A typical library portal acts as a single access point combining the library catalogues, subscription databases, subject gateways, electronic journals etc.¹ The main benefits of the portal are easier access to users, simplified authentication, unified presentation of quality resources, personalization, and the portal may be a mechanism by which to offer services to an institutional portal or VLE, so keeping the library in the forefront in larger initiatives in presenting resources². Many portals are selective and provide information novices with a manageable plateful. Librarians, on the other hand, have no problem dealing

with information overload, and want the most complete set of links possible on every library-related topic or subtopic³. An attempt has been made to analyse the library web portals of the Indian Institutes of Technology (IITs) libraries. These Portals are different in information content, library services, collection, etc.

2. NEED FOR THE STUDY

Indian Institutes of Technology are premier institutions in higher education and research oriented activities in technology in India. Libraries play an important role in supporting their activities by performing various functions and providing different services. Further, as IIT's are located at different cities of India, it is not possible for the people residing in other places to get information from IIT libraries.

3. OBJECTIVES OF THE STUDY

The study aims to determine the information content on the library web portals of IIT's in India for better accessibility. The specific objectives are:

- (i) To know about the organisation of library information in web portals
- (ii) To identify, whether the library web portals provide links to other web resources of interest to the librarians and users all over the world
- (iii) To determine, whether the library web portals makes provision for searching information including web OPAC and feedback form
- (iv) To determine the library services offered through library web portals
- (v) To suggest the information content of library web portals in an academic environment

4. RESEARCH METHODOLOGY

The study starts with the literature search from the *Library and Information Science Abstracts* (LISA) and collection of the different full-text articles that are published about library web portals. Further, the different library web portals of the IITs were analysed with their content, organisation of the information, links to their information resources, services provided, etc.

5. ANALYSIS OF THE PRIMARY DATA

5.1 Basic Information about the IITs Libraries

The library portal of any institution has to provide basic information regarding the library news, library hours, staff, organisation, floor plan, IT infrastructure, etc. Table 1 shows the information content of the portals about the libraries of different IITs.

From the Table 1 it is clear that the library portals of the IITs provided information about the library, which comprises the history of the library and their contribution to the respective IITs. It is noted that only IIT of Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee provided information about the news and events of the library and IITs. While four portals, namely, IIT libraries of Delhi, Kanpur, Madras and Roorkee have shown their working hours, the library portals of IIT Bombay, Guwahati, Kharagpur and Madras have provided information regarding library staff, designation, sections and their contact details. Library organisation and floor plan have been depicted in the library portals of IIT Bombay, Delhi, Kanpur, Kharagpur and Madras.

The library portals of IIT Bombay and Kanpur only show information about the IT infrastructure of the library. Library brochure in Printed Document Format (pdf) has been provided by the library portals of IIT, Bombay Delhi. Membership details of the library have been disclosed by all the library portals of IITs except IIT Kanpur. The library portals of IIT Kanpur and Madras have provided links to contact the authorities of the library for any information. Frequently Asked Questions with clarifications have been provided by the library portals of IIT Delhi and Bombay only. It is worth to note that none of the library portals covered under the study provided information about travel to library and IIT.

From the Table 1, it is observed that while the library portals of IIT, Madras and Bombay provided more basic information about their libraries, the library portals of IIT, Guwahati and Roorkee provided less basic information about their libraries.

Table 1. Basic information of the IITs libraries

S. No.	Portal contents	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee
1	About the Library	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Library news and events	-	Yes	Yes	Yes	Yes	Yes	Yes
3	Library Hours	-	Yes	-	Yes	-	Yes	Yes
4	Library Staff	Yes	-	Yes	-	Yes	Yes	-
5	Library Organisation & Floor Plan	Yes	Yes	-	Yes	Yes	Yes	-
6	IT Infrastructure	Yes	-	-	Yes	-	-	-
7	Library Brochure	Yes	Yes	-	-	-	-	-
8	Travel Information	-	-	-	-	-	-	-
9	Membership Details	Yes	Yes	Yes	-	Yes	Yes	Yes
10	Users List	Yes	-	-	-	-	Yes	-
11	Contact	-	-	-	Yes	-	Yes	-
12	FAQs	Yes	Yes	-	-	-	-	-

5.2 Organisation of the IITs Libraries

Basically library organisation consists of different sections such as Acquisition, Technical Processing, Maintenance, Digital Library, Virtual Library, Video Library, Circulation, etc. Portal of any library should provide information about their respective sections with details of staff, functions of the sections of the library, work, etc. The library portals of the IITs provided their organisational information as given in Table 2.

Table 2 shows that only the library portals of the IIT Kharagpur and Madras provide information about the Acquisition Section and Technical Processing. Only one portal, IIT Madras, provides information about Book Maintenance and Video Library. Further, the library portal of IIT Kanpur provides information about Digital Library, and that of IIT Kharagpur provides information about Virtual Library. The library portals of IIT Kharagpur and Madras provide information about Circulation section of the library. It is worth to note that none of the library portals provide information about Back Volumes section of their libraries, separately.

5.3 Collections of IITs Libraries

Library collection forms an important part in library. Hence it is necessary that every library portal must include information regarding their collection including different kinds of materials such as books, audio-visual materials, CDs, DVDs and listing of new arrivals in the library. Table 3 shows the information about the collection of the libraries of IITs as disclosed in their portals.

Table 3 depicts that the library portals of IIT Kanpur and Madras have information about their book collection in the main part of the portal. Audio-visual collections have been listed by the library portals of IIT Bombay, Delhi and Madras. The collection of the CDs and DVDs has been disclosed by the library portals of IIT Kanpur and Madras. New arrivals to the libraries have been listed by the library portals of the IIT Delhi and Madras. Majority of the portals have not given much emphasis to the listing of their collection and online services.

5.4 Information on Periodicals, Databases and Electronic Resources

To be effective, the library portals must include electronic resources including electronic books, databases, journals, links to consortium like INDEST, back volumes of the journals, etc., because the users may access these resources online in Intranet and through Internet. Table 4 shows the information provided about the periodicals, databases and electronic resources with their links for online access.

Table 4 depicts that the library portals of IIT Delhi, Guwahati and Kharagpur provided information and links to the current journals subscribed by them. The library portals of IIT Delhi, Guwahati, Kanpur and Kharagpur have included link to the back volumes of the journals in their libraries. Electronic journals are subscribed by all of the IIT libraries. The links to these electronic journals have been provided by the IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur and Madras. All the IIT libraries are

Table 2. Information on sections of the IITs libraries

S. No.	Portal Contents	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee
1	Acquisition Section	-	-	-	-	Yes	Yes	-
2	Technical Processing	-	-	-	-	Yes	Yes	-
3	Book Maintenance	-	-	-	-	-	Yes	-
4	Digital Library	-	-	-	Yes	-	-	-
5	Virtual Library	-	-	-	-	Yes	-	-
6	Video Library	-	-	-	-	-	Yes	-
7	Circulation Section	-	-	-	-	Yes	Yes	-
8	Back Volumes Section	-	-	-	-	-	-	-

Table 3. Information about collections of IITs Libraries

S. No.	Portal Contents	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee
1	Book Collection	-	-	-	Yes	-	Yes	-
2	Audio-visual Material	Yes	Yes	-	-	-	Yes	-
3	CDs/DVDs	-	-	-	Yes	-	Yes	-
4	New Arrivals	-	Yes	-	-	-	Yes	-

the members of the Indian National Digital Library in Engineering Science & Technology (INDEST) Consortium of the All India Council of Technical Education (AICTE). But only the library portals of the IIT Bombay, Delhi, Kanpur and Madras have online link to access the INDEST Consortium. Further, it was observed that the IIT Kanpur subscribed journals from J-Gate India and also provided online link to access these journals in its library portal. Most of the IIT libraries have subscribed the electronic databases, but only the library portals of IIT Bombay, Guwahati, and Madras provided links to access these databases. The library portals of the IIT Bombay and Madras have information and link to access the electronic books online. Library portal of IIT Madras has also provided information and links to the electronic theses and dissertations online. It is worth to note that the library portal of IIT, Roorkee has not provided any information and links to these electronic resources.

5.5 Information Search

Any library portal must contain the Search box, so as to search the resources of the library at a limited time. Search box is a short cut to view and search the resources of the library and information from external web sources. Table 5 contains information about searching options of the various resources located in the IIT libraries and the web.

Table 5 shows that the library portals of IIT Bombay, Kanpur and Madras have searching options for the theses and dissertations. The library portals of IIT Guwahati and Kanpur have information and access to fee (payment)-based online databases. The library portal of IIT Guwahati provides option to search free web databases. There is option to search information from the free open archives and electronic resources in the library portals of the IIT Bombay, Guwahati, and Madras. The catalogue of the libraries is accessible online through Web OPAC. The

library portals of IIT Bombay, Guwahati, Kanpur, and Kharagpur have links to search their Web OPAC. The library portals of IIT Guwahati and IIT Madras are provided search option by using search engine. For searching techno-portals and faculty publications of the IIT, only the library portal of IIT Delhi has provided the link.

5.6 Library Services

The library plays an important role in providing information by ways of different services. The services include circulation, CD-ROM search, xerox, book bank, reference, SDI, CAS, inter-ibrary loan, etc. The IITs are engaged in technological and industrial research and their library portals must disclose their achievements so that the concerned industrial users can access and get the services online. Table 6 shows various kinds of services, which are available online, through the library portal. They are stated as under:

As disclosed in their library portals, library membership details have been provided by the IIT Bombay, Delhi, Guwahati, Kharagpur, and Madras. Circulation details have been specified only in the library portals of IIT Bombay and Guwahati. Access to CD-ROM has been provided by the library portals of IIT Guwahati and Kanpur. The reprography and xerox service have been specified by the library portals of IIT Bombay and Delhi. Book bank facility is stated only in the library portals of IIT Bombay and Delhi. Link to reference service has been provided in the library portals of IIT Bombay, Delhi, Kanpur, and Madras. As depicted in Table 6, inter-Library loan service has been provided by IIT Bombay and Delhi. The electronic document supply service has been provided by the libraries of IIT Kharagpur and Madras. Access to the digital library services is stated in the library portals of IIT Kanpur and Kharagpur. It is noted that only the library portals of IIT Kharagpur and Madras have services of virtual library. As stated in Table 6, IIT Madras

Table 4. Journals, databases, and electronic resources

S. No.	Portal contents	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee
1	Current Journals Subscribed	-	Yes	Yes	-	Yes	-	-
2	Back Volumes of Journals	-	Yes	Yes	Yes	Yes	-	-
3	Electronic Journals subscribed	Yes	Yes	Yes	Yes	Yes	Yes	-
4	Links to INDEST & other Consortium/Publishers	Yes	Yes	-	Yes	-	Yes	-
5	Links to electronic databases	Yes	-	Yes	-	-	Yes	-
6	Electronic books	Yes	-	-	-	-	Yes	-
7	Electronic Theses & Dissertations	-	-	-	-	-	Yes	-

Table 5. Information search in portals

S. No.	Portal contents	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee
1	Access to Local Network databases	-	-	-	-	-	-	-
2	Access to Theses & Dissertations	Yes	-	-	Yes	-	Yes	-
3	Fee based Online Databases	-	-	Yes	Yes	-	-	-
4	Free Web databases	-	-	Yes	-	-	-	-
5	Free Open Archives & e-resources	Yes	-	Yes	-	-	Yes	-
6	Web OPAC	Yes	-	Yes	Yes	Yes	-	-
7	Search Engines	-	-	Yes	-	-	Yes	-
8	Techno-Portals	-	Yes	-	-	-	-	-
9	Faculty Publications	-	Yes	-	-	-	-	-

Table 6. Information on library services

S. No.	Portal contents	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee
1	Library Membership	Yes	Yes	Yes	-	Yes	Yes	-
2	Circulation Services	Yes	-	Yes	-	-	-	-
3	CD-ROM Search	-	-	Yes	Yes	-	-	-
4	Xerox Facility	Yes	Yes	-	-	-	-	-
5	Book Bank	Yes	Yes	-	-	-	-	-
6	Reference Service	Yes	Yes	-	Yes	-	Yes	-
7	Inter-Library Loan	Yes	Yes	-	-	-	-	-
8	Electronic Document Supply	-	-	-	-	Yes	Yes	-
9	Digital Library	-	-	-	Yes	Yes	-	-
10	Virtual Library	-	-	-	-	Yes	Yes	-
11	Services to Industries	-	-	-	-	-	Yes	Yes

and Roorkee are providing services to industrial users. IIT libraries are providing varied kinds of services, but there is a need to provide all the services to different kinds of users by all the IITs through their library co-operation.

5.7 Special Collection of the IITs Libraries

The Indian Institutes of Technology are premier institutions engaged in providing higher education as well as R&D simultaneously. To serve their purpose, the library of IITs need to acquire and maintain varied types and forms of collection and the collection must be accessible online through their library portals. Table 7 depicts the information on special collection of the IITs libraries.

Table 7 shows that the special collections of the IIT libraries include standards, patents, IIT projects, children's collections, and video collections. Of which,

the library portals of IIT Delhi, Kharagpur, Madras, and Roorkee are providing the information about accessibility of the standards and patents. Library portals of IIT Delhi and Kharagpur have provided link to access their projects. Recently, IIT Madras has included the collection for children and portal included the link and information. Information about video collection of the library has been shown in the library portals of the IIT Bombay, Delhi, and Kharagpur.

7. DISCUSSIONS

The study revealed that the library portals of IITs provided detailed information with links and menus to access information from different information resources. Portals also contain basic information such as information about the library and news and events of the library. About 57.14 per cent of the library portals are

Table 7. Information on special collections of the IITs libraries

S. No.	Portal contents	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee
1	Standards	-	Yes	-	-	Yes	Yes	Yes
2	Patents	-	Yes	-	-	Yes	Yes	Yes
3	IIT Projects	-	Yes	-	-	Yes	-	-
4	Children Collections	-		-	-	-	Yes	-
5	Video Collections	Yes	Yes	-	-	Yes	-	-

providing information about library hours and library staff. Whereas about 71.42 per cent provided information about library organisation, floor plan and details of membership of their libraries. Only 28.75 per cent of the library portals stated about IT infrastructure, library brochure, user lists, contact details and frequently asked questions. It is surprising that none of the portals covered under the study have given travel information in their portals.

The study revealed that only 28.75 per cent of the library portals provided information about acquisition section, technical processing and circulation section, and only 14.28 per cent about book maintenance, digital library, virtual library, video library and back volumes section.

Majority of the library portals covered under the study provided statistical information about book collection, audio-visual materials, CDs, DVDs, and new arrivals. But only a few provided links to these collections. About 42.86 per cent of the library portals covered under the study provided links to access audio-visual materials and 28.75 per cent of the library portals provided links to book collection, CDs/DVDs and new arrivals. But majority of these links were accessible only through Intranet of the particular IIT and for the members of the library only.

The study revealed that about 85.71 per cent of the library portals covered under the study provided access to links electronic journals subscribed by the library, about 57.14 per cent of the portals provided links to access to back volumes of electronic journals and links to INDEST consortium, only 42.86 per cent of the library portals provided access to electronic books and only one portal constituting 14.28 per cent provided access to electronic theses and dissertations. But most of these resources are accessible only through intranet of the respective IITs and for the library members only.

Of the library portals covered under the study, only 57 per cent are providing access to their OPAC online, about 42.86 per cent are providing search access to theses and dissertations, open archives and free electronic resources, only 28.75 per cent portals are providing search access to fee-based online databases and search

engines and only 14.28 per cent portals are providing access to search free web databases, techno-portals, and faculty publications. It is interesting to note that none of the portals covered under the study are providing access to local network databases.

Services play an important role in measuring the performance of the library. Invention and application of the library networks increased the importance of library and information services. The library portals will be more effective, if the different services provided by the libraries are clearly stated. Among the library portals covered under the study, about 71.43 per cent of the portals provided the information about library membership and also privileges to the library members. About 57.14 per cent of the library portals provide reference service. Information about other services such as circulation, CD-ROM search, digital library services, virtual library services and services to the industrial users are stated only in 28.75 per cent of library portals covered under the study.

It is worth to note that all the IIT libraries have special collections comprising of patents, standards and projects and only a few libraries have children collections and video. The study revealed that 57.14 per cent of the IIT library portals covered the information about the standards and patents, about 42.86 per cent provided information about video library, 28.75 per cent about IIT projects and only 14.28 per cent of the library portals provided information about children collection.

The library portal of Indian Institutes of Technology Madras provided detailed information by providing many menus links and on other hand, the library portal of IIT Roorkee provide lesser information compared to other portals.

8. CONCLUSION

It is observed from the present study that all the library portals of Indian Institutes of Technology are different from one another in many respects. IITs are identified as premier institutes of higher education and research in Technology in India. Having common goal,

there is need for library cooperation among the libraries of the IITs. To achieve this kind of cooperation, there is need to design and develop a unique type of library portals containing resources and services of their individual libraries and also providing links libraries of other IITs. Further, there is also need to form an educational network specialised among the IIT libraries. At present most of the IIT libraries are ERNET members, but ERNET include many member libraries.

It was noted that a few library portals such as the library portal of IIT, Roorkee, are not providing detailed information about the library. There is necessity that these portals must display detailed information, so as to know about the collection and services of these libraries online.

The effective library portal must be concise in the sense; users do not like to scroll the screen of the portal. There is need to provide more and more links to secondary pages, which provide detailed information about the sections and services of the library. It was observed from the library portals of IITs that a few are providing basic information about the collection, services, special collection, library hours etc in the main page. But there is necessary to include the information in the library brochure, rather than main page of the portal.

Most of the library users want information regardless of where they find it. They don't want to limit themselves

to their library's collection. A portal offers them one-stop shopping that takes them from the initial need for information through its delivery without having to use several different tools. If well designed, a portal also provides effective navigation of complex, multiple collections. As library portals reflect the mirror of its image, existing guidelines and standards should be considered. Further, there is need to include only limited graphics so as to load the web page through network at least possible time.

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