
Library Portal : A Knowledge Management Tool

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Abstract

Describes the pivotal role being played by the Central Library, the Indian Institute of Technology Bombay in supporting its march towards its vision. The library has applied knowledge management practices in organizing and providing the seamless access to the knowledge resources to help users, and in doing so has acquired core competencies in several areas. Discusses the critical factors for success of knowledge management in the library, viz., knowledge resources, knowledge (dissemination) services, human resources, sustained strategic commitment, and technology. The library portal has been described as the most popular form of the technology that provides networked information about library's collections, digital resources, web sites, and services. Explains in detail the salient features of the library portal of IIT Bombay to provide single window shopping for users. Underlines the need for an aggregator to facilitate broadcast searching across databases and search engines. Concludes that the knowledge management technologies have helped the Central Library, IIT Bombay to systematically synchronize all the critical components and to serve its users more effectively and efficiently, and thus to contribute to organizational goals.

Keywords : Portal, Knowledge Management, Digital Library

0. Introduction

Indian Institute of Technology Bombay set up in 1958, is a world class institution of higher learning and research in engineering, technology and science. It has several firsts to its credit in offering programs that are flexible and innovative with a strong focus on research. In tune with its vision, "to be the fountainhead of new ideas and of innovators in technology and science", IIT Bombay recognises that knowledge is a forward as well as backward integration of ideas, experiences, institutions, systems, skills, lessons learnt and the ability to create and add value for all stakeholders. The Central Library - a proud partner in the institute's march towards its vision, plays a pivotal role in generation, assimilation, and dissemination of knowledge by promoting knowledge exchange, strengthening innovation, creating the enthusiasm and abilities for learning, and facilitating the efficient knowledge application. It also promotes relationship in and between libraries, between library and users to strengthen knowledge internetworking and to quicken knowledge flow.

1. Knowledge management in the Central Library

Knowledge management in the Central Library means organizing and providing the seamless access to the knowledge resources to help users, librarians and administrators carry out their tasks more effectively and efficiently. In doing so, the Central Library has acquired core competencies in the following areas:

- ✍ Building comprehensive collections of world-class knowledge resources with strengths in relevant subject areas
- ✍ Sharing of relevant best-practices, case-studies, lessons-learned, etc. from both internal & external sources, forging partnership within and beyond the organization
- ✍ Creation of knowledge bases and warehouses by integrating explicit and tacit knowledge sources.

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- ✍ facilitating seamless, single-point access to all resources irrespective of format, language, subject and location
 - ✍ Implementation of appropriate information-communication technology (ICT) tools and techniques for acquisition, processing, dissemination and sharing of knowledge
 - ✍ reorientation of library personnel to acquire newer skills and develop expertise in ICT-enabled systems and services, and other critical areas.
 - ✍ provide library personnel with opportunities for open communication and participation in decision-making
 - ✍ provide highest level of user-focused services
 - ✍ conduct information literacy programs for users' empowerment, enabling them to do their own things.
 - ✍ creative in finding new solutions and better ways of operating

The Central Library with its strengths in collection building, processing, organization and dissemination accomplished by a pool of trained and experienced professionals imbued with a service-oriented value system and the expertise in knowledge sources, knowledge users and knowledge technology has achieved the knowledge management objectives of improving services and expanding its bases of resources and users.

2. Critical components for Knowledge Management

The factors critical for success of the knowledge management in the central library, IIT Bombay can be broadly categorized into : knowledge resources, knowledge (dissemination) services, human resources, technology and sustained strategic commitment.

2.1 Knowledge Resources

2.1.1 Print resources

The print resources are the biggest and most valuable assets of the library. Its collection include Text books, Reference books, Standards, Patents, Reprint and Pamphlets, Bound volumes of journals, Technical reports, Theses and other material in science, engineering, technology, humanities, social sciences and management. This well organized collection of print resources is highly valued and heavily used by not only our own users but also by the corporate and industrial houses, and educational institutes in the region. The access to this collection is provided though Online Public Access Catalogue (OPAC).

2.1.2 Digital resources

The Central Library is one of the first few libraries in the country to obtain for its users, web-based access to bibliographic databases and full text journals. Our users have access 24 x 7 to over 9000 full text journals and several important bibliographic databases on institute-wide intranet. The digital resources facilitate browsing, searching, downloading and printing of required information without limitation of time and space. In addition to above, the library has several information sources on videocassettes, CDs and DVDs which can be used and accessed in the library premises. Details of all digital sources available can be seen in Annexure- I.

2.1.3 Electronic Theses and Dissertations (<http://etd.library.iitb.ac.in>)

The Central Library maintains a database of all theses and dissertations full-text submitted online by M. Tech. and Ph. D students. All Masters Dissertations from 1999 and Ph. D. Theses from 2000 onwards are available in the database which is hosted on ETD Web server on Intranet can be accessed through our web site. The database contains over 1660 records (1450 Masters and 210 Doctoral).

2.2 Knowledge (dissemination) services

An important component of knowledge management in the library is provision of the services satisfying users requirements. The use and quality of resources and the technology application will greatly improve if appropriate user focused services are offered by the competent and service oriented staff. In the process of helping users locate relevant information, staff has amassed enormous amount of tacit knowledge about print and digital resources, users' specializations and requirements, and resources most appropriate to satisfy their needs. This knowledge has been of immense help in targeting user services. Library services are also available to the IITB Alumni, Corporate houses and engineering educational institutions. The Central Library offers following services :

- ✍ Reference and consultation
- ✍ Membership and circulation
- ✍ Document delivery service
- ✍ Information Alert Service
- ✍ Resource sharing and Partnerships

2.3 Human Resources

The library has a strong team of about 60 personnel including professional librarians and support staff who are encouraged to think independently and work collectively. A key to success is an all-round improvement of library staff's quality and positioning of the human values. To ensure the participation of staff in the knowledge sharing, collaboration and re-use, they are given visibility, recognition and credit as experts in their respective areas of specialization - while leveraging their expertise for success. Library personnel are encouraged to participate in various programs for improvement of the skills and knowledge so that they are able to implement and use newer tools and techniques of ICT as well as become more productive, effective and service-oriented. An environment of openness and free communication is maintained where staff can directly meet their seniors and discuss the issues concerning them. Application of flexible management methods facilitate giving due attention to diversity and variation of library staffs' requirements, encouraging them to participate in decision-making and consultation, and undertake more jobs so as to bring their management abilities into full play and realize organizational and personal objectives.

Library users are an important component of KM who greatly influence the policies, procedures, resources and services of the library. They are the *raison d'être* for the library to innovate and improve. A regular dialogue between users and library is maintained through various mailing lists, bulletin boards and personal interaction. An orientation program is organized every year for new entrants to the IIT Bombay wherein they are given in depth knowledge of library's resources, services and other facilities available for them. The library also organizes short term training sessions for users when ever a new product or service is introduced. Several vendors or producers also conduct similar training for users. Our website also functions as an important user education tool.

2.4 Sustained strategic commitment

Strategic management has a key role to play in promoting the desired behaviour both through example and by constant communication across the organization of the importance it attaches to KM. The Central Library is the nucleus of all academic activities in IIT Bombay. It is the knowledge hub around which all teaching, learning and research activities revolve. The library receives support from the management and administrators, Senate Members, faculty and the Library Committee in all its endeavors. It receives full support in policy planning, decision making, strengthening of infrastructure, modernization and introduction of new technologies and services. The Director of the institute takes keen interest in library's affairs and is always available for the help. The library also receives generous support from the Alumni Association.

2.5 Technology

The application of ICT today is indispensable as it enlarges the scope of knowledge acquisition, processing, organization and dissemination, rises speed, reduces cost and over comes space, time, language and media barriers. It links knowledge sources with knowledge workers and creates knowledge networks. It also supports knowledge sharing, collaboration, workflow, document-management, etc. across geographical boundaries.

The Central library has adequate ICT infrastructure to streamline its operations, improve efficiency, integrate its resources and provide fast access mechanisms for dissemination and sharing of knowledge. It has 8 servers, 55 PCs and other hardware to cater to the needs of library. All PCs and servers are connected to the campus-wide network that is built around a Fiber-Optic, ATM backbone comprising of an ATM switch and 5 Powerhubs. One of the powerhubs (CC Powerhub) connects the Library to the ATM switch and the backbone. The Institute's ATM backbone, in turn is connected to 2 Mbps radio link for faster access to the Internet through VSNL gateway. An additional 512K Internet link is also available from an ISP called Software Bandwidth. This network provides 10 Mbps bandwidth to the library.

The Library has computerized all its operations using a software developed in-house, uses bar coded technology for circulation of books and has installed a 3M's electromagnetic security system. It supports electronic submission of theses and dissertations, and is planning to develop an open access repository of all institutional publications.

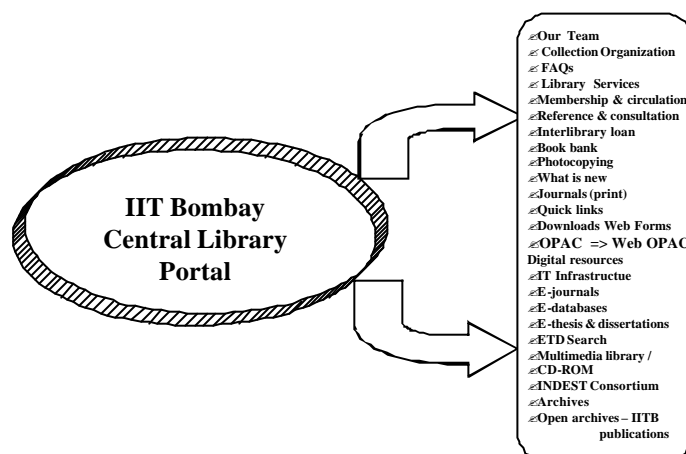
3. The Library Portal (<http://www.library.iitb.ac.in>)

The most popular form of KM technology that provides a secure central space where staff, users, administrators, partners and suppliers can exchange information, share knowledge and guide each other and the library to better decisions is the library portal. It is networked information space that presents the Library's collections, digital assets, Web sites, and services to its users. It allows libraries to rapidly innovate and select, organize and successfully deliver high quality Web-based content, served up through easy-to-use information discovery and management systems.

Strauss defines a portal as a special kind of gateway to Web resources—"a hub from which users can locate all the Web content they commonly need." "A portal is user-centric, while a home page is owner-centric"—in other words, the site design is built around some target community of users, rather than around the organization that hosts or "owns" the site. Elements that might appear on portals include access to various kinds of data, a search box, links, calendars or schedules, e-mail or address books, discussion groups or chat, and support for collaborative activities.

The library portal is the gateway to the Central Library providing information about its activities, functions, resources and services. The purpose of an information gateway of this type is to help our users discover high quality, relevant Web-based information quickly and effectively. The library portal has three main

components (a) it provides factual information about the staff (“Our Team”), “Collection Organization” and “Library Services”, (b) it allows access to the entire collection of books, reports, theses etc available in the library through the Online Public Access Catalogue (OPAC) “Search Library Catalogue” and (c) provides direct link to full text journals, e.g. Science Direct, and bibliographic databases, e.g. COMPENDEX on publishers’ site. “Multimedia library” links to CD-ROM collection available in the library. Users can download library guide (“Know Your Library”), proforma to request for book purchase, and library memberships forms from the web site. The portal provides access to list of print journals being currently subscribed to, list of all bound journals held in the library, and union catalogue of journals available in libraries of 5 IITs and BARC. M. Tech and Ph. D Students can submit their theses electronically through an intranet link provided from the website. All the theses thus received can be searched under “ETD Search” from web portal. Announcements of new activities and services are made on “What is New” which also displays recently added books and reports. Users can go to “FAQs” and find out for themselves the information about the library. “Quick links” also facilitates direct access to the desired page of the portal. User interaction is encouraged through a number of e-mail links. The schematic diagram given below illustrates all the links from the library portal:



The Library portal of IIT Bombay is one of the best examples of knowledge management which brings together all its resources and services on a single platform for convenience of its users. However, the library continues to work towards improving the portal, making it more user-oriented, interactive and customizable. It is planned to put in place an interface - an aggregator that will facilitate searching across databases and search engines – broadcast search facility, to save the users switching from one source to another. It is also being contemplated to allow users to develop their own sub portal where they receive information related only to their work.

4. Conclusion

Knowledge management has the potential to assist libraries in capturing, collecting, organizing, disseminating and sharing the knowledge and collective memory of the organization with the help of information and communication technologies. It also helps libraries streamline their day-to-day operations, improve their visibility and involvement in the organizational affairs and assume a leadership

role in helping to capture the institutional memory. The Central Library, IIT Bombay has been one of the pioneering libraries in India to adopt knowledge management technologies for serving its users more effectively and efficiently and thus contributing to institute's mission. It started adopting technology during mid 80s' and has continued to march in this direction. The current web-based technologies have been of immense help to systematically synchronize all the critical components, viz. knowledge resources, knowledge services, technology, human resources and support of the management to achieve the organizational goals. The support and inputs from our management and users have been of great value and our motivation. The success of knowledge management initiatives depends upon us if we function as learning community, have a knowledge sharing culture, versatility to accept new challenges and the ability to harness power of ICT. The Central Library, IIT Bombay has all these in abundance.

5. References

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About Author



Mr. Daulat Jotwani, presently he is working as Librarian at IIT, Mumbai, He holds B.Sc., M.Lib.Sc & Doc, M.A., Cert. French Lang. He has professional experience of over 25 years during which he has served in National Medical Library (NML) and ICRISAT. Prior to joining the IIT Bombay in March 2004, he worked as Deputy Director & Head (1998- Feb.2004), National Medical Library, New Delhi. The main contribution of Mr Jotwani to NML include computerization of all its activities, organization of continuing education programmes for medical librarians in India & Southeast Asia. He is the recipient of the WHO Fellowship in 1997. He has visited National Library of Medicine, USA and British Medical Association Library, UK. Besides, he has also visited number of other countries Botswana, Malawi, Tanzania, Zambia and Zimbabwe. He has presented number of papers in seminar, conferences and journals. He is also a member of many professional bodies.

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Annexure - I
Digital sources – full text (web based)

Source	Publisher	Scope	No of Titles
ABI INFORM	ProQuest Information & Learning Co (formerly UMI Company)300 North Zeeb Road Ann Arbor , MI 48103	Dateline Global Trade & Industry	171 2608 1068
PROQUEST SCIENCE	"	Journals	409
ACM DIGITAL LIBRARY	Association for Computing Machinery, 1515 Broadway New York, NY, 10036	Journals Magazines Transactions News Letters Affiliated Inst Pub SIG Proceedings	5 10 21 50 17 40 206
ACS	American Chemical Society Columbus Ohio, OH 43202 USA	Journals	18
AMS	American mathematical Society P O Box 6248 Providence RI 02940, U S A	Journals Databases	9 2
ASCE	American Society of Civil Engineers 1801, Alexander Bell Drive Reston, VA 20191	Journals	30
ASME	American Society of Mechanical Engineers International, 3 Park Avenue, New York, NY 10016, USA	Transactions + AMR	21
CRIS-INFAC	CRISIL Ltd Andheri, Mumbai 400093	Business Management Database	
EBSCO Databases	EBSCO Information Services P.O. Box 1943Birmingham, AL USA 35201	Business Source Premier Academic Search Elite	1100+ 2050+
Elsevier's Science-Direct	Elsevier Science B V Amsterdam, The Netherlands	Journals	1800 +
Emerald Full Text	Emerald Group Pub 60/62 Toller Lane Bradford England BD8 9BY	Journals	100+
Euromonitor GMID	Euromonitor Plc 60-61 Britton Street London EC1M 5UX UK	Global Market Information Digest	3500+ Companies 200+ Countries
IEL Online (IEEE + IEE)	IEEE Information Handling Services (IHS Englewood, Colorado, USA	Journals Standards Conferences /Proceedings	121 + 900 + 400 +

INSIGHT	Asian CERC Inf Tech Ltd Koramangala Layout Bangalore 560095	Company Database	8000+
IOP	Institute of Physics Publishing Dirac House, Temple Back Bristol BS1	Journals (all years) NCO Option (latest 2 years) Back Files (upto 1992)	3 all titles all titles
NATURE	Macmillan Journals UK	Journal	1
SIAM	Society for Industrial & Applied Mathematics, Univ City Sci Centre, Philadelphia PA 19104	Journals	13
Taylor & Francis	Taylor and Francis 4 Park sq., Milton Park, Abingdon Oxfordshire, OX14 4RN, UK	Journals	12
RSC	Royal Society of Chemistry Science Park, Milton Road, Cambridge, UK	Journals	18
Wiley's Polymer Science Collection	John Wiley & Sons West Sussex PO19 1UD UK	Journals	10
OUP	Oxford University Press London, UK	Journals	10
IchemE	Institute of Chemical Engineers 165-189 Railway Terrace, Rugby CV21 3HQ UK	Journals	1
ImechE	Institute of Mechanical Engineers London, UK	Journals	5
AIP	American Institute Physics New York, NY 11747	Journals	17
AIAA	American Institute of Aeronautics and Astronautics, 1801 Alexander Bell Drive Suite 500, Reston, VA 20191	Journals	5

Bibliographic databases (Web-based)

Database	Producer	Coverage	Titles
Compendex	Elsevier Engg Information Inc Hoboken, New Jersey, U S A	Journals, Conferences Reports	5000+
INSPEC	Elsevier Engg Information Inc Hoboken, New Jersey, U S A	Journals, Conferences Books, Reports, Dissertations	4200+
MathSciNet	American Mathematical Society P O Box 6248, Providence, RI 02940 U S A	Journals, Reviews	1800+
Scifinder Scholar	Chemical Abstracts Services American Chemical Society Columbus, Ohio, OH 43202 USA	Journals, Patents Conference Proceedings	8000+
Web of Science	Thomson Scientific Corp Philadelphia, PA, USA	Journals, Conferences	5000+
J-Gate	Informatics India, Bangalore	Journals	10000+
JCCC	Informatics India, Bangalore	Journals	4000+

Multimedia Library (intranet, CD-net)

COMPENDEX (1991-2001)	Indian Standards
Chemical Abstracts - 12th & 13th Collective Index	Index to Scientific & Technical Proceedings (1990-2000)
Chemical Abstracts on CD (2003-04)	INSPEC (1991-2001)
Current Contents on Disc (1999-2001)	Powder Diffraction Files
Dissertation Abstracts	Videocassettes 337

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