Design and Development of Online Digital Library in Yogic Science Information Resources in India

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This paper discusses the need for designing a digital library on Yoga and related aspects. The aim of this paper is to indicate how a library similar to other digital libraries in the world on Yoga can be designed. Shows some examples of the institutes which have taken up similar initiatives as the authors plan here. The existing open access repository of SVYASA digital library as the suitable example for designing and developing a Yogic Digital Library, finally resulting in a networked consortium for sharing of resources in yogic sciences as nodal centre for yogic studies and research. As an introduction to some basic concepts relating to Yogic sciences are also discussed.

Keywords: Yoga, Digitization, Digital library

1.   Introduction

The advent of the Internet and World Wide Web (WWW) has caused a dramatic evolution in academic and research & development libraries. No longer are they simple repositories of scholarly research collections but they have become electronic gateways to seemingly infinite amounts of information worldwide. For most of the students, research scholars and faculty members in higher education, the availability, convenience and Boolean powers of Web based information source are a welcome addition to the library. Thus today Internet has taken the responsibility of controlling the problems like collection, organization, storing, retrieval and dissemination created by the information revolution. A modern library possessing wealth of information is dispersed at diverse parts of the world. The networking of computers i.e. the Internet and World Wide Web allow the sharing of information sources among the researchers and scientists.

Digital library and service through electronic documents is the prestigious issue of modern library concepts. Digital libraries play a vital role in the field of Yoga and its allied subjects. The impact of information technology has led to the creation of digital libraries. It may not be wrong to say that everyone associated with the management of knowledge has realized the significance of information resources in digital form. A worldwide network consisting of thousands of networks interconnecting countless computers located worldwide has become a most efficient channel for the dissemination of information, which is based on HTML format. It is required that the materials be delivered directly to user's desktop.

In India, research and academic libraries in the field of Yoga are moving towards digital libraries gradually, but in the near future the Yogic Science fraternity will require access to information resources in digital form. Yogic Science information resources are published in a variety of formats, and in order to

enable the library & information centers to serve the varied needs of their users it is essential that information is shared among the various Yogic Science organizations. This will also help in cutting down the library expenses. No study of this nature has been undertaken so far in the field of Yoga in India; therefore, this study is an attempt to fill the gap.

2. Need for the Study

There are several yoga teaching/practicing/research centers, but very little information is available about their activities and contributions to society. There are several yoga teachers, instructors; spread all over the country and abroad but details of their expertise and wisdom are not well known. On yoga and its application, there are several publications in the form of books, journals, research papers, conference proceedings, dissertations, monographs, audio/video cassettes and CD's. But there is no comprehensive documentation centre. Hence there is a need to bring together all items published. Further, regular up-gradation is very essential to keep continuity, citation of relevant documents on yoga.

In India, there have been no efforts made to develop Yoga- based information system in order to meet the information requirements of yoga scientists, planners and decision makers, by integrating all Yoga-based Institutes. Therefore, there is an urgent need to develop a system for monitoring information on Yoga survey and use aspects in the country. Information on Yoga is a basic resource and organized flow of information enhances better planning and decision making at various levels in order to maximize awareness of the yoga to the modern society.

3. Digitization: An Overview

In this computerized age, information and the medium on which it is recorded can be considered as either digitized or not. There are many other ways of categorizing the research findings, but computer readability is the important criterion here." Digital "can be taken as synonym for "Computer Readable'.

The creation of digital information from conventional is generally a two way format process. The first stage is digitization. This is essentially the conversion of the physical medium into a digital representation of that physical medium. It takes no account of any information content of the original material.

Selection for digitization is a complicated process having much in common with selection of sources of information resources for purchase, microfilming, and their withdrawal, and also with other strategic decision-making that is integral to the work of libraries. The conversion of textual, visual, and numeric information to electronic form encompasses a range of procedures and technologies with widely varying implications and costs. The judgments we must make in defining digital projects involve the following factors.

- ⮂ The intellectual and physical nature of the source materials;
- ⮂ The number and location of current and potential users;

- The current and potential nature of use;
- The format and nature of the proposed digital product and how it will be described, delivered, and archived;
- How the proposed product relates to other digitization efforts;
- And projection of costs in relation to benefits.

The second stage is to have the computer extract information from the digitized image. The Scanner and digital camera can be used for capturing of text and images. The scanned data can be stored in the form of CD, DVD, Tape and Hard Disk. For text, this is scanned by using of Optical Character Recognition (OCR) software, which recognizes the shapes of the letter of the alphabet and produces a file exactly the same as one produced by a word processor used to type in the same text.

OCR can be defined as "a high speed process of recognizing and translating machine printed or hand printed words, letters, symbols, and numbers into computer processed information. The data is directly machine readable while still bring readable by people." OCR software is the system developed to scan a document, read and recognize the scanned image of the printed document and save the output on text files or any other digital format that can be saved, printed, edited and reused. It is generally designed for features like speed, word accuracy and for producing a document that leads as close to the original as possible. OCR comprises of two steps in translating characters on a page into a digitized form :

1. Optical scanning
2. Recognition system

OCR software is used for building bibliographic databases and full text retrieval systems in the libraries and information centers. It is a method of direct entry of VCDs from hard copy. This software consists of scanning the page into a bitmap image, recognizing the content within it and translating it into a file that can be edited.

It is very much clear that no OCR software program is hundred percent accurate. Accuracy, formatting, ability to handle columns and tables, image quality, Fonts and Type sizes, Preprocessing, templates, Software Compatibility are the main features of OCR software.

3.1 Criteria for Selecting an OCR Software
The following criteria for selection of OCR software can be used:
1. The OCR system requires installation into a PC.
2. It should have ability to recognize a wide variety of typewritten and typed documents including books, magazines, reports and newspapers etc.
3. It should be able to maintain the layout of the original text.

4.   It recognizes columns of text with a minimum of user intervention.

5.   It provides on-line help while using the system.

6.   It should come with engaging technical support from the manufacturer.

7.   It should have ability to support different types of scanners like flat-bed, sheet-fed, hand-held etc.

8.   It should scan material at an efficient speed.

3.2   Digital Scenario in India

The electronic digital revolution of the past over 30 years has transformed scores of conventional libraries into digital libraries in the world, but India has yet to make a start in a systematic manner.

The fast evolution and development of Information and Communication Technology (ICT) has lead to more applications in recent years. ICT has lead to more and more applications not only in managing the existing libraries but also to create, distribute and access information resources in digital format through computer network in India. The major initiatives, India has undertaken to network the existing institutions and libraries in order to start digitizing the existing resources include:

- ➲   National Informatics Center (NIC)
- ➲   National Round table workshops
- ➲   International Conference on Digital Libraries 2004 organized by TERI and Dept. of Culture, Govt. of India in association with Commonwealth of Learning (COL)- Commonwealth Educational Media Center for Asia
- ➲   Networking of libraries
- ➲   Digitization of Govt. Publications at Central Secretariat Library
- ➲   Digital Library of India- a Universal Library project. Etc.

The following sector has developed the digital library

1.   Indian Institute of Science and Ministry of Communications & Information Technology, Digital Library of India. "Thirty thousand books so far, in various languages," including many rare and specialized titles, with an ultimate goal of one million books freely available through this one site.

2.   Traditional Knowledge Digital Library Project (TKDL) , TKDL is a collaborative project taken by NISCAIR and Dept. of AYUSH (Ayurveda, Yoga & Naturopathy, Unani , Sidha and Yoga) , Ministry of Health & Family Welfare in 1999. A team of interdisciplinary was constituted in which 25 Ayurveda experts , 1 patent examiner, 5 IT experts , 3 NISCAIR Scientists and 4 technical officers have been included.This project aimed to document the traditional knowledge from existing lit-

erature covering Ayurveda, in digitized format in five international languages (i.e. English, Deutsch, French, Japanese and Spanish). This is an innovative structured dissemination and retrieval has been evolved for about 5000 subgroups against one grouping International Patent Classification related to medicinal plants.

3. National Institute of Technology (Calicut), Nalanda Digital Library. Nalanda is an acronym for network for Automated Library and Archives.
On September 8, 2003 , Digital Library of India (DLI) Initiative was launched by the President of India at Bangalore. Four (4) Regional Mega Centres and Twenty (20) Scanning Centres will develop requisite access technologies such as Cross-Lingual Information Access, Multilingual Crawler, OCR with workflow, Multimedia interface for physically challenged, automatic search indexing tools, Multilingual and Multi-model authoring tools, Text summarization with focus on nine languages to begin with. DLI project is to be implemented in close co-operation with the Universal Digital Library(UDL) project at Carnegie Mellon University.

3.3   Why Digital Library is required?

Digital Library is an increasingly popular research area that takes off from research in traditional information retrieval or database techniques and progresses into more complex systems for online information services. The major boost to the development of the digital libraries comes from the web technologies that enable instantaneous online access to Consortium. Digital libraries encompass a whole range of information services related work such as organization of digital information, information retrieval, user interfaces, archiving and preservation, services and social issues, evaluation and applications to particular areas and a set of standards for interoperability and value-added services.

4.   SVYASA or Swami Vivekananda Yoga Anusandhana Samsthana

The Swami Vivekananda Yoga Anusandhana Samsthana (SVYASA) is the name, since 2000 February, of the yoga research foundation, located in Jigani, 35 km from Bangaluru. From 1986 to 2000 January the name was Vivekananda Kendra Yoga Anusandhana Samsthana (VK YOGAS), and earlier from 1981 to 1986 it was Vivekananda Kendra Cikitsa Tatha Anusandhana Samiti (VK YOCTAS).

4.1   Objectives

The main objectives of SVYASA are:
- ⮞ To examine the efficacy of yoga practices and to develop yoga courses to solve the basic problems of the high-tech era;
- ⮞ To bring the benefits of yoga to everyone in the society; and
- ⮞ To make yoga a socially relevant science by using modern tools of scientific research.

Thus, SVYASA is committed to study and support research for the promotion and propagation of yoga. The approach is scientific research for social transformation in such areas as:

- Yoga for modern society,
- Medical applications of yoga,
- Application of yoga in stress management,
- Educational applications, and
- Other applications of yoga.

SVYASA has, over the years, standardized such Advanced Yoga techniques as CM (Cyclic Meditation), PET (Pranic Energisation Technique), MSRT (Mind Sound Resonance Technique), MEMT (Mastering the Emotions Technique), MIRT (Mind Imagery Technique), VISAK (Vignana Sadhana Kausalya) and ANAMS (Anandamrita Sinchana)

Arogyadhama is the Yoga Research Health Home at Prasanti Kutiram on the SVYASA campus. Here well-trained yoga teachers conduct daily routines designed to provide glimpses of a tension-free life of no excesses in a serene, tranquil and homely atmosphere. It has a departmental library, yoga equipment, and medical facilities. Regular lectures on yoga, audio-visual presentations, yoga therapy and other applications; discussion and clarification sessions on various techniques and principles of yoga; devotional session and educative yoga entertainments; yoga counseling are some of the activities of the unit.

4.2 SVYASA Saraswati Library

4.2.1 Objectives

The SARASWATI LIBRARY of SVYASA started in 1986 was upgraded to a University Library in 2002 with the up gradation of VYASA to a deemed university status. Its objective is to provide document and information support to the research, studies, counseling and other activities of SVYASA mentioned above. More specifically it is to provide adequate information resources, services and facilities to satisfy the information needs of the different categories of users. In supporting the academic teaching, study and research functions of SVYASA, the library aims:

- To fulfill the university's information needs in facilitating learning, teaching, research and consultancy.
- To optimize usage of various information resources and facilities.
- To reinforce users' learning programmes towards lifelong learning.
- To establish links with centres of study and research in yoga and
- allied sciences in India and aboard.
  To keep users abreast of current developments in yoga and related subjects

⊃ through appropriate services.

To assemble, preserve and circulate books and other information resources.

The different sections of the library are: Reference section, Reading section, Journal section, Digital Library, SVYP publications section, Dissertations and Theses section, and a section for CD-ROM, audio cassettes, etc.

Services

In fulfilling the above objectives the library's services include the following:

⊃ Open access to the resources of the library.

⊃ Enable access to free online journals.

⊃ Internet service to students and faculty.

⊃ Reprographic services.

⊃ CAS (Current Awareness Service) for the library users

⊃ SDI (Selective Dissemination of Information) for selected research scholars and staff.

5. Digital Library

5.1 Mission
The mission is to make the SVYASA Digital Library contents accessible worldwide through World Wide Web(WWW). SVYASA Digital Library has already initiated steps towards achieving its mission by providing the open access to the following

5.2 Yoga Research Papers

This is a collection of papers on research in yoga and allied fields carried out by SVYASA faculty and students for the past 25 years. The papers have been published in important journals in medicine, psychology, etc.

5.3 Yoga Dissertations
These dissertations record the results of research by yoga students at SVYASA mainly on scientific validation of yoga, combining the best of the East with the best of the West.

5.4 Yoga Theses
These theses collections represent the results research by doctoral (PhD) students at SVYASA, covering scientific study and validation of yoga.

5.5   Digital Library

The Digital Yoga Library is an online collection of links to web sites around the world on the Internet, especially selected for the benefit of yoga students.

5.6   International Journal of Yoga

International Journal of Yoga is a peer-reviewed open access scholarly publication of SVYASA.

5.7   Yogasudha

Yogasudha.com is a monthly magazine from the Swami Vivekananda Yoga Prakashan, to propagate the message of Yoga.

5.8   INFLIBNET IndCat

Inflibnet IndCat is a Union Catalogue of Indian Universities. A Web-bases Interface Designed to Provide Easy Access to Bibliographic Databases of Resources available at Major Indian University Libraries

6.   Networking and International Exchanges

Yoga is practiced, experimented with and taught in many centres of the world, and many papers generated. SVYASA has already initiated networking and exchange of information with many of these centres in India and abroad. The vision to make SVYSA a nodal centre for all study and research in yoga and allied sciences, even as early as 1999, Director had constituted a committee to prepare a plan for the development of the centre as a node. The group has submitted a plan. SVYAS has also taken steps to introduce computer applications in the library. SVYASA researchers have published more than 100 papers which are indexed in MEDLINE and/or Psychlit/Psychinfo. SVYASA has carried itself as a Centre of Advanced Research (CAR) in Yoga and Neurophysiology accredited by the Indian Council of Medical Research (ICMR).International Yoga Conferences at SVYASA have been very popular in attracting some of the best Academia IJOY or International Journal of Yoga has been officially launched by SVYASA. On the IJOY website http://www.ijoy.org.in/, one can read entire research papers published freely. This journal is acting as a platform to bring together researches by all Schools of Yoga.

SVYASA has memorandum of understanding (MOU) with a number of organizations within and outside India, for information exchange, research collaboration, students and faculty exchanges, joint conferences, etc.

7.   Conclusion

The accessibility of different information resources by a person sitting in a remote and isolated corner of the World through internet is going to reduce the burden of establishing duplication of institutions in different parts of the world in different countries which is going to benefit the poor and underdeveloped nations in a big way by reducing the burden of investing huge amount in designing such Yogic Science Digital Library. Duplication of work especially in surveys, collection of books and materials and in re

search field is definitely going to be minimized because of easy accessibility of information and materials from different institutions of the World in a fraction of time through latest information technology and communication facilities. Designing online Digital library of Yogic Science Information Resources in India is not only going to serve India but also to the users all over the World.

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References

1. Kumar IR. Building of digital libraries. National Workshop of Building Digital Libraries;2005 Jun 17-18; JIIT, Noida, India;2005.
2. Noerr P. The digital library toolkit. Palo Alto, CA; Sun Microsystems;2000
3. Iyengar,B.K.S. Light on Yoga, 2007, p-20.
4. Department of Ayurveda,Yoga & Naturopathy, Unani,Siddha & Homeopathy(AYUSH),Govt. of India. Yoga. Available at http://indianmedicine.nic.in/yoga.asp. Accessed on 29/11/2009
5. Gopal, Chandra and Shroff Sunil, Medindia Health Network Pvt Ltd, 2009; Available at http:// www.medindia.net/yoga-lifestyle/yoga-origin.htm. Accessed on 29/11/2009.
6. Morarji Desai National Institute of Yoga,New delhi ; Available at http://www.yogamdniy.com. Accessed on 29/11/2009.
7. Verma,O.P.Design & Development of Digital Database in Homoeopathic information resources in India: A plan proposal; Available at www.icml9.org/program/track7/public/documents/0-13204.doc. Accessed on 29/11/2009.
8. Jean-claude Guedon: Digital Library: an Oxymoron. Bulletin of Medical Library Association. 87(01), Jan 1999.
9. Kumar*, B.L. Vinod; Neelameghan, A., Svyasa University Yoga Digital Library, Information Studies, vol. 15, no. 1, Jan 2009, pp. 27-40.
10. Neelameghan A and Rajashekar,T.B, Project Proposal; Creation of National Information Centre for Yoga and Allied Sciences (NICYAS) at Prashanti kuteeram,1999.

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