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Barriers of bibliographic database creation in Indian university libraries: the INFLIBNET experience

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Keywords

Databases, India, Library automation, University libraries

Abstract

On the one hand the world has reached the last stages of library automation, while, on the other, the Internet has revolutionized it with different concepts such as the electronic, digital, virtual and library without walls. Now, professionals are researching knowledge management, Internet cataloguing, copy cataloguing, metadata, Z39.50 retrieval protocol, and resource sharing in the context of inter-library loan, document delivery services, Internet services through Net etc. Unfortunately in an Indian context, libraries are still in the process of the automation and digitization of their resources. This paper discusses some of the barriers to progress in these areas in university libraries in India.

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Introduction

The Information and Library Network (INFLIBNET) Centre is an inter-university centre of the Indian University Grants Commission (UGC) working in the area of automation and standardization in Indian university libraries including R&D institutes, national institutes, college libraries etc. (www.inflibnet.ac.in). Since its inception some ten years ago, in order to implement the automation work at funded universities, the Centre has adopted its own standard formalized on the basis of the Common Communication Format (CCF) "Guidelines for data capturing: a user manual" – specifically for books, serials, and theses library resources including Anglo American Cataloguing Rules 2 (AACR2) and Library of Congress Subject Headings (LCSH) for rendering the information in database and providing subject headings to the records, respectively.

To be able to digitize their library resources, various institutes have introduced different bibliographic standards out of the more than 20 standards worldwide such as ISBD, AACR2R, MARC, USMARC, UNIMARC, CANMARC, UKMARC, MARC21 and the like. Others are still being issued, even though all of them have the same objectives, namely: pursuing universal bibliographic control; exchange of information among union databases for the purpose of global resource sharing; and cooperation at the local level, transferring data from one system to another (Chandrakar, 2001).

Up to now, using such common standards European and US libraries have not only reached the top level of automation and networking and dealing with electronic, digital and virtual libraries, but many other countries have succeeded in implementing digital libraries. Now, they are busy looking into other topics such as Internet cataloguing, copy cataloguing, metadata, Z39.50 retrieval protocol, and inter-library loan (ILL), document delivery services (DDS) through the World Wide Web, as well as knowledge management and content management issues.

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Conversely in India, librarians are still labouring to automate their libraries and digitize their resources. This paper discusses the reasons for this and the barriers that Indian libraries encounter to effect digitization of their library resources.

Barriers in the Indian context

When we look at the issue of library automation and digital libraries in an Indian context, there are many unwanted problems appearing everywhere. Some of the more important barriers are discussed below.

Uniformity

Any database, either bibliographic or numerical, works as the backbone of any application. Without proper guidance for database creation, inputting accurate and the right information into the database is a tedious and challenging job, even though the database itself may be well designed. One has to have perfect knowledge of the particular system. When we are talking about the standardization and quality of library databases, the person who is working on it must have an adequate knowledge of the standards being used with the particular system. In an Indian context, when large numbers of different standards have been introduced into libraries since the beginning, then it is extremely difficult to choose which one should be finalized. In addition after finalizing which standard should be employed, there is still the problem of implementation. Uniformity among standards is important and some of the problems of uniformity are discussed below.

Classification

In an Indian context, it is difficult to find uniformity in the class numbers of the documents since the universities are using various classification schemes. Many universities are using the Dewey Decimal Classification (DDC); however some are using the Colon Classification (CC) and Expensive Scheme (ES), and still others are using the Universal Decimal Classification (UDC) scheme, or even others.

According to a survey report made for the INFLIBNET Programme by the Inter-Agency Working Group of UGC, about 65 per cent of university libraries follow the

DDC scheme, and 24 per cent of libraries use the CC scheme. The remaining libraries use UDC, Library of Congress Classification (LC), a special scheme, a thesaurus or some other scheme (UGC, 1998).

In addition to the variety of the schemes being used, different versions of each are being applied for classifying the documents in libraries. Due to lack of budget and manpower, universities cannot afford the effort of re-classifying entire libraries or even whole documents with new schemes. This is one of the prime factors working as a barrier for their library automation plans (Ramesh, 1998).

Cataloguing

It was noted earlier that the database of any application is the backbone of software, and the quality of the database depends on the information being rendered with its fields and subfields. When librarians are using different cataloguing schemes for cataloguing the documents in their libraries because various cataloguing schemes have been introduced into the library along the way then there is a problem. Thus, taking into account the quality and uniformity of the database, re-engineering the entire cataloguing system is a big headache for the librarians. As per the survey report of the INFLIBNET Programme, 40 per cent of university libraries are using AACR II, 23 per cent CCC and the remaining libraries use either American Library Association (ALA) Catalogue code or other schemes. Now INFLIBNET Centre has made AACRII – introduced with the SOUL software (see below) – as a common standard for cataloguing the documents in participating libraries.

Subject headings

In bibliographical records, subject headings/descriptors are one of the field elements just like language, ISBN, title, author, place and publisher, year of publication, part statement, series, note, class number, accession number, etc. The field subject heading has an important role in retrieving the desired documents from the database. The field helps in the data mining process: one can do the searches intelligently by using this field and dig out the desired documents from the database. Therefore, it works as an important element for information seekers.

Unfortunately its systematic use is not widely practised by many of the libraries. Some

libraries, however, do make use of the field – either by locally made standards, thesaurus or by locally developed keywords.

According to the project report of the INFLIBNET Programme, 48 per cent of university libraries are using a locally evolved subject heading system or some other special scheme. About 33 per cent of libraries are using Sears list of subject headings and 9 per cent of libraries are using LCSH lists. Now it has been made compulsory with the participating libraries to use LCSH for providing subject headings to the documents.

Software

India is contributing a significant role in the software market for industrial, business, stock market, supermarket and other applications. In spite of these successes, software packages for library applications are not well developed so far. Some commercial software packages such as LIBRIS, LibSys, TechLib Plus, DELMARC, SLIM, MAITRAYEE, LIBRARIAN, Nirmal, TLMS, Libra, DELISIS etc. are available on the Indian market with different configurations. Thus it has become a major problem for the librarian to select the best one or the one most suitable for his library's requirements. Each library software package has its own unique features and limitations. Different bibliographic standards and cataloguing schemes have been used for creating databases and rendering information respectively. Because of the many different bibliographic standards being used with each software package, the sharing of information emerges as another problem for Indian librarians – hence uniformity of the records has become a global problem.

Fortunately, after a long time waiting, INFLIBNET Centre has come out with a library housekeeping software called SOUL (Software for University Libraries) which is based on common bibliographic standards with proper guidelines for data capturing (<http://web.inflibnet.ac.in/info/soulInfo.jsp>). As of Autumn 2002 around 80 university libraries are using this software and many more are in the process of acquiring it.

SOUL is a state-of-the-art library automation software designed and developed to work under a client-server environment. When designing this software, the international standards, bibliographic formats, networking protocols, and typical functions of all types and sizes of libraries,

particularly at university level, have all been taken into account. In addition, SOUL has been fully tested at a number of university libraries and critically evaluated by a team of experts and practising libraries.

The functions have been grouped into six different categories taking into account the functional divisions of university libraries. Several of the notable features of the SOUL software include:

- Windows-based user-friendly software, well-designed screens, logically arranged functions with extensive help messages make the software user friendly.
- It uses RDBMS to organize and query the data.
- SOUL does not need an extensive training.
- It is specially designed to work in large academic libraries and is capable of handling large numbers of records.
- It is a multi-user software and there is no limit on simultaneous accesses.
- Supports internationally known standards such as CCF, MARC21 and AACRII etc.
- Provides export and import facility and adheres to ISO-2709 format.
- OPAC is accessible over the Web (Web OPAC) using any GUI-based browsers.
- Provides comprehensive list of reports, master databases and authority files.
- Provides facility to create, view and print records in regional languages.
- Functionally it covers every conceivable operation of university libraries.
- Available at affordable cost (just Rs. 50,000.00 (c. €1,027) for multi-user and Rs. 15,000.00 (c. €309) for single user).

Problems in rendering of records

Because of different software being used and because of the unavailability of proper guidelines with the software packages, the rendering of bibliographic information with items in their respective fields such as author, publisher, series, edition etc. is being carried out in various fashions.

In any given database, one will find a variety of single authors and publishers. Take as an example from the Books Union Database the author **Satya Prakash Roy**. As per the AACRIIR, **Roy** should be the entry element and **Satya Prakash** the other part of name. It can be found in the ways shown in Table I.

Table I Example from the Books Union Database

Entry element	Other part of name
Roy	S.P.
Prakash Roy	Satya
Prakash Roy	S.
Roy	Satya P.

Taking an example of place and publisher of **New Delhi: Prentice-Hall of India** we get different ways of rendering it in the database shown in Table II.

According to AACR II, place must be **New Delhi** and publisher must be **Prentice-Hall of India**.

These problems occur due to lack of proper guidelines and effective implementation of standards. These are the kinds of thing that one may get in an Indian library context. Basically this is due to a lack of implementation of suitable authority databases – but with the assistance of the authority database included in the SOUL software, this problem is slowly being solved.

Lack of training

Before introducing automation within a library, it is necessary to set up a training programme on computer applications for the staff involved with the automation work. It is also necessary to have a training programme on the software being used for the automation.

Bearing in mind these factors, INFLIBNET Centre organizes various training courses from time to time for their participating libraries on different topics such as library automation, network management, bibliographic standards, Internet access and so on. It goes without saying that continuous training is needed to keep abreast with the latest technologies and developments.

With its various training programmes, workshops and conferences, INFLIBNET Centre is creating awareness of the latest

Table II Renderings of place and publisher

Place	Name of publisher
N. Delhi	Prentice-Hall of India
N.D.	PHI
New Delhi	Prentice-Hall
New Delhi	Prentice Hall of India
New Delhi	PHI
Delhi	Prentice Hall

technologies available to librarians. Within the last two years around 750 professionals have been trained with the help of some 30 IRTPLA (INFLIBNET Regional Training Programme on Library Automation) programmes conducted throughout the country under a human resource development activity. Around 400 professionals have already been acquainted with the latest technology during the different training programmes conducted for the funded universities every year (Chandrakar *et al.*, 2002). Other than these, collaborative training programmes with All India Radio and NASSDOC (National Social Sciences Documentation Centre) are being conducted in different subject areas.

Lack of skilled manpower

Because of the lack of skilled manpower in India, the automation process for libraries is very slow. Even after getting trained, it is very difficult to implement one's acquired knowledge at the library where one works, either due to the personnel or individuals there, or due to the university's problems (e.g. lack of equipment or funds). As a result, there is sometimes a discord between staff because of a lack of knowledge of computers and the digitization process cannot be implemented without other staff having an adequate knowledge of standards and rules.

Lack of manuals

One of the factors behind the failure of any system is lack of proper manuals or documentation. Well-defined instructions about the system should be available either as a published document, online or in CD-ROM, if possible. It should be defined in a manner such that there are proper guidelines with sufficient examples so that it could be referred to whenever a problem occurs either during the rendering of records or implementation of the technology.

There are so many library housekeeping software packages available on the market in India that do not have single guidelines for their users and this clearly constitutes a barrier to the efficient implementation and operation of systems.

Lack of advisory services

Librarians need assistance when trying to solve automation, rendering and other related

problems. There needs to be a medium or forum for the libraries undertaking automation providing excellent advice and services to the libraries whenever required. In the absence of manuals and advisory services, libraries often use either absolute or inappropriate information.

'... The Internet has changed the entire scenario of the library and produced different new names for it such as the electronic, digital, virtual and library without walls etc. In the process, library resources have moved ahead from simply being bibliographic to e-documents, e-resources, e-books and e-journals etc...'

Gradually this problem is being sorted out by using the user forums available on different subject areas on the Net. For example, the SOUL software has its own user forum available on its Web site. In addition to such initiatives the INFLIBNET Centre is providing consultancy service to libraries throughout the country.

Technology changes

Due to rapidly advancing technology revolution in the field of electronics and computers all purchased equipment for the automation of libraries is becoming outdated. After embracing information technology, the library field has been flooded with nascent thoughts, ideas and applications. In other ways, the Internet has changed the entire scenario of the library and produced different new names for it such as the electronic, digital, virtual and library without walls etc. In the process, library resources have moved ahead from simply being bibliographic to e-documents, e-resources, e-books and e-journals etc. In addition, it is true that 100 per cent accuracy is not possible in a database even though it might have been created with so much sincerity.

Mistakes are part of human nature, and doubtless they might appear during the keying of information. Some intelligent systems are available which are able to sort out this kind of problem – they can identify the problems and inform the user. Along with changes such as these, many new services have been introduced into the library world that the

whole role of the librarian is evolving into something new.

Because of these recent changes in the library field, re-engineering of the entire system has become the key issue for librarians. To be frank though, what can they do when their library has not even been automated? Ultimately the library fails to compete with the technology.

Conclusion

When we compare the digitization process in Indian libraries with other European countries or the USA, it is unfortunate to say that we are very slow at this level, although automation of the libraries is on its way. The INFLIBNET Centre has so far funded 142 university libraries to automate their libraries with initial grants to the tune of Rs. 6.5 lakh (c. €13,350). More than 65 universities were provided with core facilities grants of Rs. 1 lakh (c. €2,054) in 1996-1997 to facilitate the purchase of the necessary infrastructure to access resources.

Despite this progress, there are nevertheless still problem areas and this paper has touched on several major barriers which are holding back Indian libraries in their quest for automation. They are not the only ones: in addition, managerial and technical problems are also found in some institutes and lack of cooperation between the university staff are also one of the problems inherent in Indian universities.

Regrettably, it is too difficult in the current Indian environment to cope with all these barriers at once. In order to provide continuous and effective services to their patrons, and keeping in view the changes occurring with the library and information field, Indian librarians have to think things over and need to accept the challenges created by this new era of the information super highway.

Happily, the situation is changing and an improved future for Indian libraries is gradually taking shape. Moderate success has been seen in this area during the last couple of years. For its part, INFLIBNET Centre is also playing a role in changing the scenario and is working as a catalyst for Indian university libraries.

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About the author

Rajesh Chandrakar is currently Scientific and Technical Officer at INFLIBNET (Information and Library Network) Centre, Ahmedabad, where he has been working on developing union databases on different core library resources such as books, serials, theses etc. for nearly six years. Besides this, he is handling the Retrospective Conversion Project running under five major Indian universities. In addition, he is involved in the software development team working with SOUL (Software for University Libraries) software. Currently, he is Convenor of the MARC21 Core Group of INFLIBNET Centre. Rajesh holds a Bachelor's degree in Science from Government Model College of Science, Raipur, Chhattisgarh, India, and a Masters degree in Library and Information Science from Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India. He also holds the Postgraduate diploma in Computer Applications from Pt. Ravishankar Shukla University.