COLLECTION DEVELOPMENT METHODS AND POLICIES IN ACADEMIC LIBRARIES

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ABSTRACT:

"Library is a trinity of books, staff and readers and book is the foundation of the library. It becomes the sign and symbol of incentive to become dynamic and regarded the rich springs from which the knowledge flows to irrigate the wide fields of education and culture. The usefulness of a library would depend upon the quality of its collection as determined by its relevance to the library purpose. Collection Building is a very imported function of a library which should be given for the most careful attention . The collection building programme is a plan to carry out the objectives of the university library in relation to the development of library collections. The study of the paper is about the need, purpose, issues and the methods of collection development, and their policies in academic libraries.

Keywords: *Collection building, Collection development methods, academic libraries, libraries*.

Introduction:

Information resources in myriad forms have been collected and preserved for future generations and posterity from ancient times. India has a rich tradition of learning and education was considered as the most important tool for self-realization in ancient India. There is "no country where the love of learning had so early an origin or has exercised so lasting and powerful an influence" (Thomas, 1891). The importance and respect with which a nation views its universities and higher education systems reflect its appreciation of the role of these institutions in nation-building. Higher education in India is witnessing sea changes as the universities and colleges are striving for achieving high standards at the national and international levels. University libraries are playing a major role in the development of higher education. This is reflected in the way libraries are developing their collections, providing facilities and delivering services. Collection available in the library should meet the needs of the user community for which discussions with specialists are necessary to identify and locate the required information. A holistic collection incorporates the characteristics of both traditional collection and the changes brought by technology. Since collections are developed primarily for serving the information needs of the users, how users perceive a collection while seeking information and how the collection can facilitate information seeking are important factors to be considered while developing collections. For a collection to be useful, the items should be selected based on the community's needs (Lee, 2000). Several studies are being conducted at the national and international levels for assessing the user satisfaction level, evaluation of collections and how to update the existing collections to meet the changing requirements (Fombad & Mutula, 2003).

Collection Development in Libraries

The primary function of libraries and information centres is to assist in accessing information and gathering knowledge. Collection development is the central professional function of any library since the very concept of a library is primarily associated with the idea of a collection. Developing library collection is one of the most demanding and challenging professional functions of a library which requires a deeper knowledge and understanding of the service community, institutional priorities and information & publishing industry. According to Evans & Margaret (2004), collection development is "the process of identifying the strengths and weaknesses of a library's materials collection in terms of patron needs and community resources, and attempting to correct existing weaknesses if any". It involves the framing of a systematic plan for creating library collections that will meet the needs of library users and incorporates several activities like determination and co-ordination of relevant policies, fiscal management, assessment of user needs, collection use studies, collection analysis, identification of collection needs, selection of materials, planning for resource sharing, collection maintenance, weeding and user liaison, and outreach activities.

Collection development is a dynamic process that requires the involvement of both library professionals and the service community. The need and value of client input are not given due importance or often neglected which is a drawback since resources in libraries are intended to meet the needs of the community. It should be an inclusive process taking care of not just the most active users but the total community's needs and incorporating all types of formats. It should also have a plan to rectify weaknesses and maintain strengths.

Brief review of literature:

As defined by Evans, it is the process of making certain that the library meets the information needs of its user population in a timely and economic manner, using information resources produced both from inside and outside the organization. This process involves several components that include, the library's mission, assessment of patron's needs, strength and weakness of the existing collection and tools for identifying the relevant and quality material. Collection development in an academic library is a two-way process involving the faculty and the librarian. Thus, informal communication between librarian and faculty is needed to cultivate consciously the relationship to make collection development process efficacious. Ameen, Kanwal (2006) in his article discussed all kinds of managerial and practical issues pertaining to collection development and its acquisitions.. The paper has attempted to explore the relationship between the use of varying collection-related terminologies and ever-emerging forms of scholarly publishing in libraries. Shrivastava (2009) in his article emphasized on need of building of collection development in electronic environment due to large availability of e-resources. The present study also emphasized Intellectual property right issue and challenges regarding building of collection development. In Indian library system though stock verification is done at some intervals, collection analysis/evaluation is hardly done. Effective collection analysis and assessment provide quantitative and qualitative data for evaluating the usefulness and utility of library holdings.

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Objectives:

The aim of academic library in collection building is meeting the changing needs and demands of the present and future. The following are the objectives of collection building:

1. Building up the collection in depth at a comprehensive level in all the necessary areas.
2. Supporting the research by acquiring and issuing the relevant documents to the research scholars.
3. Adopting systematic and judicious spending on document collection, keeping the objectives of collection building in mind.
4. Understanding the user needs and select documents according to their tastes.
5. To have a strong belief for a written development policy.

Meaning and concept of Collection Development:

➢ Collection development is a systematic and essential process of building library collection to fulfil the teaching, learning research need of its target users. It includes the acquisition, selection, evaluation and preservation of resources according to user's requirement.

➢ It is the composition and size of a collection that is a major determinant of the importance, value and quality of a library.

➢ Collection development is the selection of library materials keeping in view user's need and requirements.

Purpose of Collection Development Policy:

To build a balanced and relevant collection, it is necessary to understand the strengths and weaknesses of the existing collection. Collection development policy has many functions like describing current collections, providing a framework for developing and maintaining collections, assisting in budgeting, assisting staff to consider the long term and short term objectives of the organisation, prioritising different activities etc. It helps to develop a realistic and practical acquisition program for procuring resources for the future. It provides clear and specific guidelines for the selection, acquisition, storage, preservation, relegation and discard of stock. These policies can help in improving communication between the library and users and in enhancing understanding of the objectives of the library by administrators whose decisions influence resource allocation. The policies to be effective should be flexible and should be reviewed and revised periodically.

Need and Purpose of Collection Building:

Need:

1. To enable the libraries to know the best methods of acquisition directly from the publishers or through vendors, by highlighting the merits and demerits of both method.

2. To assist the library professionals in establishing new methods of reviewing materials before purchase.

3. To assist in long range budget planning and identify the areas for which the priority is to be given.

Purpose:

1. To Promote cooperative acquisition.

2. To offer suggestions regarding weeding out of materials.

Collection Development Methods:

Different methods are followed to build the collection. Common methods usually followed in most of the universities libraries are:

1) **Purchase Method:**

The most common method of collection development is through purchase and it is that has been followed with at most care. The well known principle is' best reading for the largest number at the least cost?.. Purchase method is of three types:

1) **ON APPROVAL METHOD:**

One of the common methods is to select and purchase of books out of those brought to the library by book sellers 'ON Approval'. According to this system, book sellers bring books to the library for the personal examination and selection of the librarians. The documents that are found suitable can be selected and ordered and the others can be returned. The main advantage is documents can be evaluated and selected by subject experts.

2) **BOOK SELLERS/ PUBLISHERS CATALOGUES:**

Another common method is buying the documents from the booksellers and selecting the documents from the publishers catalogues. Since documents are procured from the different booksellers, maximum discount can be obtained.

3) **SERVICE BIBLIOGRAPHIES:**

The most important method is the selection of documents on the basis of their reviews appearing on journals, news papers, and other media and bibliographies compiled as a service and by non – profit making agencies. Some examples are:

1. Books in print
2. Cumulative Book Index
3. British National Bibliography
4. Indian National Bibliography
5. Indian Books in print, etc.

The above are non- profit making agencies, rendering best tools for document selection. Following are the service agencies offering best source for document selection.

1. H.W. Wilson
2. R.R. Browker – USA
3. Whittaker – U.K etc.,

2. **GIFT:**

Another way of procuring the documents is in the way of gift. There are individuals and institutions willing to gift books to libraries. The idea, library will pay the attention in identifying and tapping such sources. These are valuable, useful and rare books which can be had in the manner.These are scholars who have their personal collections of valuable books which they have built up over a long period. Many Libraries have enriched their book stock

by acquiring such private collections. The Asuthosh Mukherjee collection of the National Library, Calcutta is a renowned example of how valuable, the donation of private collection can be done,. (Sir Ashutosh Mukherjee CSI, FASB, FRSE, FRAS, MRIA (29 June 1864 – 25 May 1924) was a .... Imperial (now National) Library Council to which he donated his personal collection of 80,000 books which are arranged in a separate section.

3. Exchange:

The library concerned or the parent institution of which it is part, may have its own publications, this is particularly true of research institutions, learned societies and universities. Publications of other institutions, both in India and abroad, can had in exchange of these publications. A prominent method adopted by research libraries for procuring journals is through exchange. The duplicate copies of valuable text books also can be exchanged.

Guiding Principles in Collection Building:

The following are the guiding principles for collection building:

- ✧ The requirement of each library should be brought to the notice of other countries.
- ✧ Updated catalogue is essential for exchange of documents.
- ✧ Definite policy is to be evaluated for resource sharing and networking.
- ✧ Identification of suitable vendors / Book sellers in the another requisites.
- ✧ Piece - for - Piece exchange (ie. Book for Books - Periodical for Periodicals), priced exchange and open exchange etc.. are to be analysed and the system seems to be best and advantageous should be selected.

Purpose of collection assessment and evaluation:

Assessment and evaluation of collection is necessary to find out if the library is collecting materials required by its clients and to gather data which will remedy deficiencies and improve collections. Academic libraries do evaluation for accreditation purposes, to assess the feasibility of new programs, to determine how well the library is implementing policy or how the policy should be revised on the basis of evaluation of data etc. Other reasons include funding purposes, analysing how the service community use the collection, monetary value of the collection, quantity and quality of collection to know weak areas, providing data for de-selection, co-operative efforts etc. Assessment is also done to find out institutional needs like adequacy of budget, whether collection is out dated, cost-benefit ratio is reasonable, providing data for funding agencies, networks, consortia, donors etc. (Kennedy, 2006).

Techniques of collection analysis:

Collection analysis techniques include use and user-centred approach where emphasis is on the individual user as the unit of analysis; collection-centred approach where collection is examined against an external standard or the holdings of other libraries that are comprehensive in the relevant area; quantitative analysis which is measuring collection/ circulation statistics, ILL requests, e-Resources usage, budget information, ratios such as expenditure for print resources in relation to e-Resources, serials in relation to monographs etc.; qualitative analysis which is subjective because it depends on the perception of

Collection-centred methods :

1. Collection profiling: Statistical description or numerical picture of the collection at one point in a time. e.g. Titles within a classification range, imprint years etc. It provides information for cooperative collection development and management and to identify weak areas.

2. Expert opinion: This method depends on personal expertise for making the assessment. It involves reviewing the entire collection using shelf list or a single subject area or shelf examination of various subject areas. Depth of the collection, its usefulness in relation to curriculum or research and deficiencies and strengths in the collection are estimated.

3. List checking: Checking to see whether library has access to a list of expert recommended books or journals. The list also includes general list or specialized bibliography, catalogues, course syllabus, list by professional associations or government authority, recommended reading lists, frequently cited journals list etc.

4. Verification studies: A form of list checking in which collections are checked against a special list of titles which encompass the most important works in a specific area.

5. Shelf scanning or direct collection analysis: The collection is physically examined by a person with subject knowledge and evaluates the breadth, depth, significance and level of collection, physical condition of materials etc.

6. Comparative statistics are used by libraries to determine strengths by comparing collection size and expenditure, expenditure and format, expenditure and preservation, rate of net growth, size of collection in volumes, titles, formats etc., degree of content overlap and unique holdings.

7. Applying collection standards: Collections are compared with standards developed by professional associations, accrediting agencies, library boards etc. They apply qualitative standards rather than quantitative recommendations and emphasize on addressing adequacy, access and availability (Johnson, 2009).

Client-centred methods:

1. Citation studies: Using citations/bibliographic references in articles and other scientific works as indicators of use or influence assuming that more frequently cited publications are more valuable. In academic libraries, receiving bibliographies from faculty and students to find out which books, journals or authors are popular and how many cited resources are available in the library.

2. Circulation studies: Using circulation reports, which resources are mostly used and less used, compare use patterns in select subject areas, type of materials etc.

3. In-House use studies: Mostly used in non-circulating periodical collections or to measure book usage in non-circulating sections. This method relies on cooperation from the users and can focus on materials used or the users of materials, a part of the collection or entire collection.

4. User surveys are conducted to find out whether the collections meet the users' needs and requirements qualitatively and quantitatively. The results identify user groups that require better service, improve public relations, receive feedback on drawbacks and successes and find out changing trends and interests.

5. Focus groups: A small representative group of people of about eight to ten selected from the user community engages in a discussion in an informal setting. Focus groups can identify issues, offer suggestions and detailed comments and provide opportunities to explore topics and issues in depth that cannot be covered in surveys.

6. Document delivery test determines the ability of the library in providing the user with a required item at the time of his need and provides objective measurement of a collection's capacity to satisfy user needs.

7. Inter library loan analysis: Reviewing ILL reports to find out the items patrons are using that are not available in the library, how often patrons resort to ILL vs. using local resources etc. Identify areas of collection not meeting patron needs and represent use of the collection because the deficient item is required by the patron. 8. Quantitative bench-marking: Comparing counts of books and journal holdings between library and peer libraries, comparing size of holdings on a subject to the enrollment in the corresponding department or budget for that department (Kohn, 2015).

Benefits of collection analysis:

Analysis of the collection provides a better understanding of the scope, depth and accuracy of collections, whether the collection meets the goals and mission of the library, aids in the preparation of a collection development policy, provides a measure for the effectiveness of the policy, ascertains the quality and adequacy of collections, rectify the inadequacies and improve the collection, explains decision about expenditures and provide justifications for budget increase (Mosher, 1979).

Collection Development Policies:

Collection development policy is an official document in which all the information regarding collection is written an consulted whenever it is needed Policy is a written planning document for a library for building its collection intended to define objective of parent institution. It defines

- ➢ Written policies to state the purpose of the collection.
- ➢ MISSION OF Library.
- ➢ Library values.
- ➢ Statement of purpose.
- ➢ Covers the general areas of collection, such as selection.
- ➢ Methods of handling items, including gift items or other items.
- ➢ Methods of requesting purchases.
- ➢ Methods of challenging Titles.
- ➢ Act as a rational guide for budget allocation
- ➢ Contribute to operational efficiency in term of routine decision.
- ➢ Helps in determining the best method of acquisition.
- ➢ Forms the basis for planning collection development.
- ➢ Facilitates cooperative programmes like inter library loans, resource sharing network.

Written Collection Development Policy:

The primary task of any library is to collect, select, process and provide access to relevant resources available through libraries. A policy statement is a kind of frame work with certain parameters both for the library collection as well as library staff to work within the framework.This policy statements helps on setting the budget matters helps as a channel of communication both within and outside the libraries , collaborates cooperative collection

development. Preparation and review of a written policy should encourage the library and institution to define or refine their goals and help the library collection to conform the aims and objectives of the institution of the library, by translating those aims and objective into clear and specific guideline , for each stage of materials handling, selection, acquisition,processing etc..The primary reasons for having a written collection development policy can be narrated under four broad headings.

1) Selection
2) Planning
3) Public relations
4) The Wider context.

Key issues in collection building – Bloom Field:

The key issues identified in collection building according to Bloom field are:

❖ Identification of the purpose of the library organisation.
❖ Formulation of library's collection development policy by library committee.
❖ Matching between users requirements and institutions aims and objectives.
❖ Preparation of budgets and allocation of funds.
❖ Working out the strategies for implementing the policies and programmes, maintaining, revising and updating policy statement.

Weeding:

Weeding involves removing material from open access, reassessing its value and discarding or transferring to storage. De-selection or weeding is an important step in collection development without which the collection becomes aged and out-dated and difficult to maintain. The excess copies, rarely used books and materials which cannot be further used may be transferred to a different location in the library or sold and discarded. The funding bodies and administrative agencies may disapprove the disposition of materials for which money has been spent. Space constraint is a main factor motivating weeding and disposal, other reasons include ensuring continuous quality in the collection, to improve access, save money and make room for new materials. The items for de-selection could include unwanted gift materials, duplicates, obsolete and

Preservation:

Preservation involves protecting the materials from damage, deterioration and retaining the intellectual content of materials which can no longer be preserved. These include binding, repairing, using protective enclosures, monitoring environmental conditions, controlling use etc. It is considered as a librarian's responsibility to preserve the human record for future generations. Non print collections also need preservation. Digital resources and digitized files pose problems because of the different types of formats and the speed with which standards, software and hardware changes. Libraries with digital collections migrate the data or emulate obsolete hardware and software to retain the content. Digitization is used as a preservation treatment as it has the advantage of reducing the handling of the original artefact and making accessible to more people.

Challenges, Issues and Problems in Collection Development:

Library collections are becoming increasingly complex and diverse owing to many types of formats and managing and accessing these resources brings its own challenges. The libraries are dealing with print, electronic and digital formats and although technology has immensely enhanced the scope and use of these collections, the electronic formats in addition to the physical materials pose significant challenges in managing these heterogeneous collections. Selecting, acquiring and maintaining different types of e-Resources like e-books, e-journals, reference sources and full text journals which are multidisciplinary in nature is more complex than print resources.

Legal and access issues, technological compatibility and services for training and ease of use have to be taken care of. Continuous content evaluation is also required as the content of the resource may change over time. There can also be duplication of content across databases which results in confusion and wastage of investments. Lack of perpetual access is another issue. Many of the e-Resources may be licensed for a limited period and once the license period expires the subscription is cancelled. Preserving and archiving e-Resources therefore poses its problems.

Impact of Information and Communication Technology (ICT) on Library Collection Development:

Like all other fields, technology has revolutionized academic libraries also. Academic libraries have effectively made use of technology to respond to user demands by bringing changes in the nature of the collection. Though technology has not affected the core activities of collection development, its scope has been altered significantly. Transformative changes are taking place; the possibility of remote access has changed the nature of collections from what it was years back, philosophy has evolved from ownership to access and the implications are felt in all areas of planning, policy making, budgeting, services etc.

As pointed out by (Seetarama, 1997), collection development policies have to be redefined to balance ownership and access and to include cooperative efforts and evaluation. Earlier when collection development was purely print based, selection tools like publisher catalogues and trade bibliographies were used but today all the tools are electronically available. Traditional selection criteria like quality, relevance, cost, usage, etc. were considered and faculty and user suggestions for new titles were forwarded for purchase. With advancements in technology, ICTs are used in all areas of collection development activity like selection, acquisition, evaluation, cooperative efforts, etc. Selection involves making use of online publisher's catalogues, online book reviews, online sites, faculty-librarian communication for providing online suggestions and recommendations and online alert services. Acquisition work of pre-ordering and ordering process and communication with vendors make use of the ICT facilities. ICTs are also used in the evaluation process to measure circulation statistics, provide budget reports, e-Resources usage, online user surveys etc. Transaction log analysis of e-Resources provides information on the use of electronic journals and databases.

The greatest impact of e-Resource is increased access to information resources, speed of access and ease of access. Earlier researchers and faculty depended upon books, reference material, journals and case studies for information. With internet and telecommunication advancements, electronic resources are being profusely used by academicians. Online catalogues, high tech

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information networks, and increased resource sharing have accelerated access to information. Budgets and grants are deployed in different ways that enhance the library's role in providing scholarly information and managing digital content. Collaborative arrangements for acquiring and managing digital resources have considerably reduced the cost. Consortia provide member libraries wider access to digital resources at affordable cost and best-licensing terms.

Conclusion:

Knowledge is power and library is the reservoir of the knowledge. Hence it is necessary to have a good balanced collection in every academic library in order to serve the needs of the reading community. With limited funds, the libraries have to satisfy many more academic libraries in India is to make use of all methods of book selection and purchase in a manner that the pit falls of each are guarded against as far as possible and as sound a collection development programme as possible in the prevailing circumstances. Collection development implies building up collection with quality material through proper acquisition and weeding policies.

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ELECTRONIC RESOURCE MANAGEMENT IN ACADEMIC LIBRARIES

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ABSTRACT

Introduction Electronic resource management (ERM) is the practices and software systems used by libraries to keep track of important information about electronic information resources, especially internet-based resources such as electronic journals, databases, and electronic books. The development of ERM became necessary in the early 2000s as it became clear that traditional library catalogs and integrated library systems were not designed to handle metadata for resources as mutable as many online products are. Electronic Resource Management in Libraries: Research and Practice provides comprehensive coverage of the issues, methods, theories, and challenges connected with the provision of electronic resources in libraries, with emphasis on strategic planning, operational guidelines, and practices. This paper primarily focuses on management practices of the life-cycle of commercially acquired electronic resources from selection and ordering to cataloging, Web presentation, user support, usage evaluation, and more.

01.INTRODUCTION :

Electronic Resource Management (ERM) is the practices and techniques used by librarians and library staff to track the selection, acquisition, licensing, access, maintenance, usage, evaluation, retention, and de-selection of a library's electronic information resources. These resources include, but are not limited to, electronic journals, electronic books, streaming media, databases, datasets, CD-ROMs, and computer software. As they attempt to maintain some control over their e-resources, librarians find themselves lost in a mire of spreadsheets and e-mail messages, and responsible for dealing with a variety of independent systems and data containers that are not integrated with each other. Too often, librarian rely on their memory alone to coordinate systems such as the acquisition module of their integrated library system, their alphabetic list for electronic journals and databases, their meta search tool, and their local link server. In addition to the initial effort of setting up information in multiple places and the potential lack of consistency between systems, considerable duplication of effort is likely to occur. Much of a librarian's success at carrying out necessary tasks is based on personal experience; however, because the knowledge and experience gained from dealing with e-resources is often vested in too few people-Sometimes only one –libraries are left at risk.

02. ERM HISTORY AND INITIATIVE

Following the advent of the Digital Revolution, libraries began incorporating electronic information resources into their collections and services for electronic technologies made access to information more direct, convenient, and timely. In January 2000, the Digital Library Federation (DLF) conducted an informal survey aimed at identifying the major challenges facing research libraries regarding their use of information technologies. The survey revealed that digital collection development was considered the greatest source of anxiety and uncertainty among librarians, and that knowledge regarding the handling of electronic resources was rarely shared outside individual libraries. As a result, the Digital

Library Federation created the Collection Practices Initiative and commissioned three reports with the goal of documenting effective practices in electronic resource management. In his 2001 report entitled 'Selection and Presentation of Commercially Available Electronic Resources', Timothy Jewell of the University of Washington discussed the home-grown and ad hoc management techniques academic libraries were employing to handle the acquisition, licensing, and activation of electronic resources.

Through the efforts of Adam Chandler of Cornell University, a web site was created to host the information emanating from that study. Furthermore, a meeting held at the annual ALA conference in June 2001 led to establishment of an informal steering group that presented a workshop on ERM standards at a may 2002 meeting sponsored by the DLF and NISO (NISO-DLF workshop, 2002). The participants, who included not only librarians but also library system vendors and serial publishers, agreed that standards are a key element for ensuring the successful development of ERM systems and that to achieve this end, a more formal and collaborate organization should be formed. As a result, the Digital Library Federation Electronic Resource management Initiative, or DLF ERMI, was established soon after as well as two reactor panels to provide expert advice.

More than 16 ERMS products were available during early stage:

1. Innovative ERM by Innovative Interface
2. TDNet ERM by TDNet Inc.
3. Web-Share License Manager by OCLC
4. SMDB by Semper Tool
5. CORAL by University of Notre Dame's Hesburgh Libraries
6. Vera by MIT
7. 360 Resource Manager by Serial Solutions
8. HERMIS by Harrassowitz
9. Hermies by Johns Hopkins University Libraries
10. Gold Rush by Colorado Alliance
11. Journal Finder by WT Cox
12. EBSCONET ERM Essential by EBSCO
13. CUFTS by Simon Fraser University Library
14. E-Resource Central by SIRSI Corp.

Integrated ERMS

1. The Semper Tool Digital Library Suit formally known as SMDB (from Sempertool)
2. Alma (from ExLibris) formally known as 360 Management Services
3. TDNet Discover (from TDNet)
4. BLUEcloud eRM (from SirsiDynix) – Powered by CORAL

03. Features of ERM

• Supporting the acquisition and management of licensed e-resources

• May be integrated into other library system modules or may be a objective system

• May have a public interface, either separate or integrated into the OPAC

Providing descriptions of resources at the package (database) level and relate package contents (e.g. e-journals) to the package record

• Encoding and perhaps publicly displaying licensed, rights such as e-reserves, course packs, and interlibrary loan

• Tracking electronic resources from point of order through licensing and final access

• Providing information about the data providers, consortia arrangements, access platform

• Providing contact information for all content providers

• Logging problems with resources and providers

• Providing customizable e-mail alerting systems (e.g. Notices to managers when actions are expected or required)

• Linking license documents to resource records

• Supports retrieval of SUSHI usage statistics.

04. Examples of ERM :

AMSL: Electronic Resource Management for Heterogeneous Data in Libraries, within the focus of the project is the development of methods and tools for the integration of library data and information from the Internet in the Linked Open Data Cloud. The goal is a scalable and usable, intelligent data management platform, normalize the diverse data from different provinces, networking and high demantified in RDF format and any other representation formats can gather. The focus kept on aligning a system complementary and data interoperability architecture concept, which is operated by system librarians. As part of the project a use case is to be realized, that provides resource management functions to ensure the efficient licensing, budgeting and management of electronic resources to the level of the smallest unit of publication.

CORAL: It is an Electronic Resources Management System consisting of interoperable modules designed around the core components of managing electronic resources. It is made available as a free, open source program.

ERAMS: (e-resource access and management services) are a way of thinking about library management to help libraries optimize the access, usage, data, and workflows of electronic library collections in the physical and digital library data as an area that still needs to be addressed in commercial ERM systems.

05. BEST PRACTICES IN ERM

Now-a-days, speedy access to e-resources is crucial for users in any libraries. Library requires good tools beyond what ILMS offer for managing the diversity of e-resource collections. Librarians require details usages data as they attempt to manage escalating demands in an environment of decreasing budgets. Thus many libraries are implementing ERMS to manage and administer the e-resource products. Some of the institutions/university

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libraries who have already implemented ERMS are as follows: John Hopkins University – HERMSE Massachusetts Institute of technology – VERA North Carolina State University – E-Matrix Penn State University, Cornell – ERLIC Simon Fraser University and University of Prince Edward Island – CUFTS viii. University of Wisconsin – ERMes ix. University of Notre Dame Hesburgh – CORAL University of California, Los Angeles – ERDb University of Pittsburgh – Innovative Interfaces' electronic resource management system

06. Features and Benefits of Implementing ERMS

i. Effectively and efficiently manage digital collections workflow (life cycle) i.e. from evaluation, selection, and acquisition, renewal/review/ cancellation, access to troubleshooting.

ii. To keep track licenses agreement, and manage online subscription, coverage data and A-Z holdings etc.

iii. One-stop solution – facilitates to view all information related to particular e-resources without having to consult multiple files / spreadsheets.

iv. Analyze the cost per use, usage statistics, and licensing information. It can also examine cost benefit analysis of the Library.

v. Allows users to search the multiple databases simultaneously and get the combined results in a uniform format.

vi. A central system of monitoring the management of link resolution with vendor, negotiation license with content provider, evaluation of trial subscriptions, subscription management, centralized acquisition, budgeting and ordering etc.

vii. Evaluation and monitoring module provides usage statistics, users' feedback, and downtime analysis which support for renewal/review/cancellation of e-resources.

viii. Information alerts through e-mail, login popup windows remind the librarian for renewal of resources before termination of license agreement. Notification from content provider to librarian and vice versa if there is a change of eresource URL and/or IP address. Through this alert service is a different kind of notification that have also been made to users like new addition of resources to the library, downtime notification, if any etc.

ix. Enable search of A-to-Z list available in the library. Search by title, author and subject etc direct the full text article via OpenURL resolving standard. This makes a single interface for all of the different units of information of eresources life cycle. For example, Librarians, will be able to know the purchase details such as coverage, cost, subscription period and usage statistics of e-resources. Library staffs dealing with acquisitions and periodicals could know license agreement, pricing, discounts and payment terms. Cataloging staff could know the date of subscription and access methods. Reference and other public services staff can be acquaint of new e-resources and usage restrictions and rights. With the availability of contact information, staff could contact the content provider/technical support for any technical problems and users for any information alerting service. Thus, ERMS streamlines workflows

and disseminate the information, hence eradicate the necessity of reentering data once more. As defined by (Sadeh and Ellingsen 2005) ERMS is a "central control tower".

x. ERMS administration control restrict the library staff to read, update, create or delete the authorization of eresources workflow. Staff cannot do anything beyond security restriction as defined by administrator.

xi. Library staff will get opportunity to learn new tools, technology and standards by implementing ERMS in the library. xii. Implementing ERMS require staffs from different department to work together closely. Thus, the inter relationships between staff among various library departments improve. It provides opportunities for all to have all pieces related to e-resource management fit together.

07. Use of the Electronic Information Resource:

The license should permit fair use (fair dealing, etc.) of all information for educational, instructional non-commercial and research purposes. The following considerations regarding fair use, user statistics and liability for unauthorized use should be addressed in any licensing agreement which a library, its governing institution, or its consortium signs Interlibrary loan (ILL) - Interlibrary loan should always be permitted. At a minimum, FAX or postal dispatch of photocopies of printed electronic articles should be allowed. Use of secure ILL, document transmission systems, such as Ariel or other similar protocols, for lending to other libraries should be allowed. Pay-per-view – Service to access articles which are not available in the library's print or online collections.

It should be possible for the library to purchase the article and send it to the patron via email. Pay-per-view is not a replacement for ILL. Viewing, downloading and printing - Authorized users should be allowed to view and print copies and to download electronic copies of single articles from the e-resource for private use, in line with "fair use" (fair dealing, etc.) provision in the applicable governing copyright law. Course packages - Use of the information content from the e-resource should be permitted in course packs and other material of an educational nature, as compiled for a restricted set of authorized users. Course reserves - Electronic copies of articles or a discrete portion of the information content from the e-resource should be permitted to be included in a library's course reserves (print or digital), as requested by an instructor for a restricted set of authorized users in conjunction with specific courses. User statistics - The information provider should provide statistics for each library's use directly to the library participating individually or as a member of a consortium. In the case of a consortium, aggregated statistics for the consortium should be delivered to the consortium's administrative. Liability for unauthorized use – The license should reflect realistic expectations regarding the library's ability to monitor and trace unauthorized use

08. CONCLUSION

The primary goals of e- resource management are to organize and share information. Many libraries have purchased commercial ERM systems to assist them in meeting these goals, while many others have not taken this step yet, because they found these systems either costly

or wanting. Librarians have demonstrated that they are able to adapt all kinds of systems, from database software to a simple paper calendar, to better manage their e- resources. The solution does not necessarily need to be expensive or technologically advanced to be effective. Depending on the needs assessment, a well- organized filing

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THE IMPACT OF DIGITAL TECHNOLOGY IN THE ACADEMIC LIBRARIES

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Abstract

Libraries have long been endless sources of information for students - for centuries this involved row after row of books. However, the face of libraries is changing as content is moving toward a digital platform and Internet access is becoming more of a human necessity than a privilege. This article presents an evaluation of the impact of digital technologies in the transformation of academic library services. It begins with a brief overview of the historical development of academic libraries followed by a discussion of current challenges and opportunities for academic libraries. It also discusses innovative technological developments for learning, data management and the impact of these on the academic library sector, including the need for library staff to develop new skills and roles such as "embedded" librarian roles. The article concludes with reflections on future developments and the impact of digital technological utilities. It's clear that the library has been a valuable institution for academic purposes as long as pen has been put to paper. However, the library and its role in academic research are no doubt going through a clear transformation in the 21st century.

Key Words: *Information Society, ICT, Web Technologies, Dissemination of Information, Social Media.*

Introduction

The recent developments in technology have paved way for establishing a digitally advanced society. Information boom and easy access to it has a definite impact on the users of today. New technologies have changed the behavior and expectations of users. There is a paradigm shift in the communication and dissemination of information in view of the impact of ICT and Web technologies leading to digital transformation of the libraries of 21st century.

ICT have totally revolutionized the landscape of higher education so that sustainable development can be achieved in the global context. It can be said that education is not complete without good libraries and libraries enrich the learning process of learners. The aim of education is more or less the same-that is to achieve holistic development of mind and personality. Character building can be achieved by facilitating best teaching and learning conditions. Advancements in technology and communication skills have made this more precise and conducive to disseminate information instantly and inexpensively. Libraries too have to compete in the changing scenario. The challenges posed by the emerging technologies and their effects on the libraries are going to be very decisive in future.

Earlier libraries had physical parameters having shelved collection, brick and mortar walls and traditional mind set but they are now paving the way for new age libraries of 21st century which are an effective means for disseminating as well as creating and cultivating

information.   This unequivocally requires harnessing of the recent trends and upgradation of ICT and its related technologies.

Understanding Digital Technology

Digital Technology is an umbrella term for computer-based products and solutions. The word 'digital' comes from Latin—digitus, finger—and refers to one of the oldest tools for counting. When information is stored, transmitted or forwarded in digital format, it is converted into numbers at the most basic machine-level as 'zeroes and ones.', the term represents technology that relies on the use of microprocessors, computers and its applications and is dependent on the Internet. Anything that function through a binary computational code such as mobile phones, tablets, laptops, computers, etc are digital devices which comprise of Information and Communication Technology, Web Technology and the like.

According to Oxford English Dictionary, IT is the study or use of systems (especially computers, telecommunications, etc.,) for storing, retrieving and sending information. Definition of information technology according to Merriam Webster Dictionary is 'the technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data'. The ALA Glossary defines information technology as the application of the computer and other telecommunication technologies to the acquisition, organization, storage, retrieval and dissemination of information.

The term ICT refers to computer and telecommunications technology combined together for collecting, storing, processing and communicating information.   ICT includes any communication device or application encompassing radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning. ICTs are often spoken of in a particular context such as ICTs in education, health care, or libraries (1). ICT refers to technologies that provide access to information through telecommunications.   It is similar to IT but focuses primarily on communication technologies. This includes the Internet, wireless network, cell phone and other communication mediums (2). Networks include fixed, wireless or satellite telecommunication and broadcasting networks. On the other hand, its well-known applications are the Internet, DBMS, Information Storage and Retrieval Systems and multimedia tools (3).

The method by which computers communicate with each other through the use of markup languages and multimedia packages is known as web technology, they are used in conjunction with one another, to produce dynamic web sites. Web technology is the establishment and use of mechanisms that make it possible for different computers and devices to communicate and share resources. Web technologies are infrastructural building blocks of any effective computer network.

Objectives of the study

. To explore how librarians and library users interact with digital material, electronic resources, and online services and review their perceptions towards their benefits and challenges in academic libraries.

. To explore the use and impact of digital technology in Academic Libraries services and operations in India.

To study the different areas of library operations and services those are performed through Digital technology in academic libraries of India and operations in digital environment in academic libraries

To reflect and critically discuss the impact of these on the role and professional practices of academic library staff and, Finally, to consider what the future of academic• libraries and academic librarianship will be.

Impact in Academic Libraries

Academic Libraries are an important component of academic institution be it school, college or university. They are regarded as the heart or nerve-centre of academic set-up and play an important role in providing information service to the students, scholars and faculty. As Tikekar, A. C. has put in libraries in their entirety serve as an extension of class rooms and teacher rooms and for researchers they are their invisible guide, friend and philosopher (4).

Today the libraries are equipped with broadband access, computers, printers, scanners, and bar code readers, videos, compact discs, hard discs, RFID (radio frequency Identification Device) and in house and commercially available databases to provide information to the readers through the net.   The Online Public Access Catalogue (OPAC) has changed the shape of the traditional card catalogue (5). There is no need for readers to check the catalogue physically; instead they can enjoy remote access to the catalogue with click of the mouse from any part of the world. Libraries are providing information not passively through books and printed material but have taken an active role as knowledge providers through every conceivable format such as Institutional Repositories, Open Access Initiatives, Open Educational Resources, Social Media Platforms and Value-added Services which include state-of-the-art websites.

The convergence of IT, digital and web technologies form the basis for an advanced information society.   The main influence of information technology which has a direct impact on information society is- increased computer power leading to faster and cheaper computer processing which paved way for digitization of all libraries even with low budget, with the latest telecommunication technologies like ISDN (Integrated Service Digital Network) the data transmission capacity can be increased and facilitated with introduction of varied new services such as e-collection, e-journals, e-mail teleconferencing, e-clippings and e-publishing and networks.   The optical storage media, which is the cheapest data storage device, has increased the storage capacity of the libraries (6).

The Internet has given rise to the development of electronic versions of printed library reading materials like books, journals, reports, conference proceedings, monographs, etc., which have brought changes in the collection development policies of academic libraries and the role of librarians is vital in the selection and procurement of relevant electronic resources judiciously within limited available finance. Electronic resources include e-journals, e-books, CD-ROM/DVD Databases, On-Line Databases, etc. There has been a trend in academic libraries for adopting consortia model for accessing to electronic resources over Internet. The consortia approach for subscribing to e-journals and databases has been gaining momentum and different models are coming up and some are running successfully (7). Internet resources are at the service of all but it is said that librarians use them as tools in a better way to serve their users (8).

Availability of digital information through laptops and cell phones has provided the students an alternative means of study and research. Web 2.0 tools such as facebook, twitter, blogs, online groups which are also known as social media have made it possible for people to actually connect to one another through the internet (9). Librarians have to maintain their traditional core values of the profession and at the same time manifest library services in new ways addressing the constantly changing needs of user communities. (10).

Knowledge construction in electronic format is made convenient by using digital technology which can be used 24/7. Learning, sharing information is made easy, OPAC search, reserving library resources through apps like IOL, Android is possible, and RFID protects resources from thefts. Archives of e-journals serve the purpose of bound volumes of journals which can be accessed from anywhere. E-books, ETDs are an effective source of information – all these can be accessed through digital technology comprising of cell phones, smart cards, social networking, etc. (11)

Need for the Study: In the present ever changing information environment, libraries are encountering both opportunities and challenges. Information technology has introduced many changes in the way information is identified, procured, processed and disseminated to library clientele. Furthermore, digital technologies have created a sense of urgency among library users and librarians themselves. Academic Libraries are witnessing new paradigm shifts. These shifts include:
Transition of information sources and systems from paper to electronic media. Complexity in information needs of highly demanding clientele. Increase in the cost and quality of information. It is an accepted fact that the Digital technology has influenced all the components of a library system: information sources, services, human resources and users.

Academic Libraries in Digital Era: In the 21st century, academic libraries have a new role in sharing information. Libraries are not piles of books anymore; the general library environment has been changed from analogue to digital. Library automation systems have helped libraries to provide easy access to their collections through the use of computerized library catalogues (On-line Public Access Catalog – OPAC) which more recently led to

digital libraries (IFLA,2013). Dissemination of knowledge has always been one of academic libraries primary goals as long as they have served as learning institutions, cultural repositories and research centers but in this digital age of knowledge, they have to expand these roles and stop being passive repositories for printed material. To the contrary, academic libraries should upgrade their services and providing education of high quality by storing resources in various forms and maintaining easily accessible for online use among academic community. This would be possible by implementing a digitization project. Hughes (2004) reported to concept of digitization as "the process by which analogue content is converted into sequence of 1s and 0s (these ones and zeros are called bits) and put into a binary code to be readable by a computer" (p.4). So, we could generally say that the digital material is every computer readable material.

Academic libraries have gradually been completed many criteria for their development of better products and services which are the follows: a. Effectiveness: to well operate the digital library system. b. Efficiency: at what cost does it operate? (costs can be either financial, temporal or related to effort) c. Usability: services & products utilization d. Accessibility: characteristics of the digital system (technology performance, speed, time, error rate) e. Quality: qualitative material f. User's satisfaction: users interact with the digital library system. The methodology for digitization in academic libraries changes according to policies of each educational institution. Different institutions have different views of the material to be digitized depending upon the mission and vision of the parent institution. Brindley (2009) pointed out that academic libraries serving digital duties should position their role as strategic guides upon formal learning settings, academic programmes and research by providing teachers and learners with broader, faster and better information as they noted the heart of the entire educational institution and the only root of knowledge. She also emphasizes the need for planning, vision, and strategy. Librarians in the Digital Era: Academic librarians are supposed to have various technological skills in order to provide services to students. We will present the most important skills that librarians need to have according to us. But in the new digital era when we talk about information literacy we mean teaching skills that include computer skills. According to Kulkarni "there is a need for the library professionals to play significant role in promoting information literacy in digital environment." (2014, p. 199) Information literacy in the digital environment means: "The ability to use digital technology,• communication tools or networks to locate, evaluate, use and create information. The ability to understand and use information in• multiple formats from a wide range of sources when it is presented via computers. (Kulkarni, 2014, p. 198)

Challenges for Academic libraries in Digital Era The following are the Challenges for Academic libraries in Digital Era
1. Making services engaging to researchers and students: Google is not the answer to everything. As a result, the librarian fully absorbs the needs and wants of students and researchers to make a substantial and engaging difference in their work moving forward. 2. Handling research data management tools: Libraries should be the place on campus for data curation and research management. Librarians need the support of their faculty and

administrators to make this happen, but librarians also have to keep themselves well-versed in the advancements of data management so research doesn't become stale.

3. Demonstrating the value of Librarian: Academic libraries are always on a budget. This means that month after month, year after year, libraries have to come up with compelling examples of how valuable their work is - often with a looming bottom line. However, according to the American Library Association, research has proven a connection between student grade point averages and library material usage. Staff needs to communicate this connection and demonstrate why libraries require more attention and public engagement.

4. Preserving material on a digital scale: Not only are there excellent products available that can help libraries achieve this - even with the biggest of collections - it's becoming the norm.

5. A growing and diverse spectrum of customers: The 20th century underwent a massive shift in technological innovation that impacted people of all ages. On any given day, a librarian might have to help customers from six different generations, from baby boomers to millennial, according to 21st Century Library.

6. Nailing down library policies: With the increased usage of online tools, there are many questions that might need to address to the administration. For instance, if the university should be purchasing ebooks alongside traditional print sources. Or, as many modern academic research centers are discovering, there may not be a need for purchasing textbooks at all. These are just some examples of library policies that staff and the administration need to pinpoint moving forward.

7. Role development: Open Access has required librarians to become knowledgeable in a growing number of subjects on an astounding scale. While no institution is going to process information at the pace of a computer, it might feel that way sometimes. Adding budgeting and resource constraints can contribute to this problem as well.

8. Digital licensing: Although every academic research facility is different, College and 1 which means that digital licensing agreements should become more sustainable and easier to understand.

9. Subject-matter expertise: With so much information pouring into libraries at a fast pace, academic institutions need to take an active role the management of libraries. There have already been great strides taken on a national scale, such as National digital Library of India.

10. Becoming familiar with a wide range of digital content: By clearly seeing what kinds of articles, published works and e-books are being used the most by students and researchers, librarians can fully digest what types of content they need to become familiar with in a global, digital world while still providing high quality sources. With academic libraries, the challenges of role development, digital licensing and research tools are shaping the way that librarians provide quality content to students and researchers

Conclusion

Students as well as faculty members are using ICT more prominently to acquire, enhance and update their knowledge and skills so that they remain connected with their contemporaries. They do not want to miss out on the opportunities provided through the digital media. The impact of new developments in ICT and digital technologies is seen in all walks of life. It has changed and revolutionized services and resources of libraries too. Information collection, preservation and dissemination are done with the help of ICTs

making the libraries more accessible and user-friendly. Librarians should aim for continuous education and update their skills according to the changing requirements. Libraries should reach out to the new-gen users who are savvier with the digital technology by packaging their resources in an electronic format, provide easy access and retrieval and notify the same through institutional websites. This will no doubt strengthen the libraries and help to respond to global challenges more strongly than ever before.

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