SPACE PLANNING IN THE UNIVERSITY LIBRARIES OF MAHARASHTRA IN THE CHANGING INFORMATION TECHNOLOGY SCENARIO: A Case Study

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CHAPTER 1

Introduction

Information technologies and library facilities affect one another in both design and physical space: (I) the introduction of information technologies into a library influences the design of existing space, and the characteristics of available space may constrain the use of the technology; and (II) the technologies themselves can affect the overall space requirement for a library, reducing requirement in some cases, increasing it in others.

This thesis discusses a variety of information technologies, focusing on mature applications those which have demonstrated their utility and reliability, and require neither leaps of faith nor suspension of disbelief by funding/administrative authorities. Reflecting the researcher's belief and his experiences working with the libraries, this thesis also acknowledges resource sharing as a significant and growing factor in space planning, technology utilization, and collection development.

While significant percentage of core reference materials will be accessed electronically in future years, libraries will likely continue to have substantial collections of print materials. Laser-used monographs will increase by stored compactly in movable aisle compact shelving or in automated storage and retrieval systems. Statistical directories and bibliographical works will become more widely available in machine-readable form, the format in which they are most effectively used. Electronic publications, both in full-text and image formats which need to be revised only a few times a year is available on CD-ROM or other optical media with updates sent by mail. Publications needing to be revised more frequently are distributed on rewritable optical media, which can be updated either by downloading information from a remote resource database or by loading new data from diskettes, sent by the supplier.

Backfiles of journals, patents, and other types of materials now often maintained on microform are increasingly available on electronic version and stored as images or full-text on optical media for rapid retrieval both from within the library and remotely from elsewhere in the organization, but
libraries are not likely to convert their extensive existing microform holding to other formats. A majority of journals will continue to be published only in print format; thus there will continue to be a need for telefascimile (or related technology) to scan and transmit the document images.

Far more terminals and PCs will be deployed within a library, not only for staff use and patron access to the local online catalogue, but also for access to a wide range of information resources both within and outside of the library. The resources will encompass both bibliographic records and full-text and image files.

Libraries will significantly increase the provision of access to users at remote locations, supporting dial-in ports, Local Area Networks (LANs), Wide Area Networks (WANs), and the electronic exchange of bibliographic information, full-text, and image data with other libraries and institutions.

"Although the relationship between human behaviors and space has been documented" (1), little attention has been focused on space needs and utilization in University libraries. With introduction of different information retrieval technologies and consideration of different learning styles, space may be inadequate in many University libraries for storage, reading areas, offices, as well as other activities frequently associated with university libraries. “Constant rearrangement, moving, and installation of ... equipment require(s) space management. The end result should be an efficient, flexible working environment” (2).

Space is a resource just as the collection and the budget are resources; and “because space is a resource, it requires at least as much management attention as finances and personnel” (3). University libraries may provide little flexibility to expand space resources. Rooms made for growing collections and the furnishing that go with media and other technologies, require space previously used elsewhere. The result is a reduction of room for readers. “Library facilities are still dedicated primarily to housing paper collections. New technologies that support ... electronic resources have been incorporated into libraries as additional resources, not as replacements of paper products” (4).

Space is frequently a problem in University libraries due to introduction of new technologies into the libraries due to the size of the equipment and the space required for students to use that equipment to access information. Lushington and Mills (1979) predicted a change in the way librarians

and patrons access information when they stated that “The [online catalogs] may eventually replace the card catalog. It is easier for the public to use. It can be placed in many convenient locations throughout the library; … it saves both user and staff time” (s).

The way technology dependent media affects space utilization is subject of debate. Fraley and Anderson (s) stated that, “an online catalog allows the space planner to use the area committed to a card catalog in a different manner and provides a net gain in square footage for the library space”. In direct contrast, another library planner said that “although online … catalogs certainly look smaller [than traditional card catalogs], an argument can be made that card catalogs take up less space” (r). Storage for information has been miniaturized and compressed. CD-ROMs, microforms and laser discs conserve space, but the equipment and workspace to make the machine-dependent media accessible consume considerable amounts of floor and wall space. Michaels (1987) said, “Banks of public access catalog terminals … may ultimately consume more space than the card catalog” (s).

The use of computer in libraries adds another dimension to the many roles of the librarians. The library media center sometimes becomes a storage center for computers. “Not only do librarians get the computers, they also get a computer coordinator… or computer classes” (s). The implementation of an electronic catalogue system may require the librarian to be a computer expert. This expectation of computer expertise frequently results in the administration of the computer laboratory becoming an added skill area for the librarian.

Beckman (1983) stated, “The computer has been used primarily to convert manual card catalog records to machine-readable form, allowing the creation of new types of access to library collections” (r). The conversion of printed bibliographic records to electronic formats also raises questions of what will happen to the card catalogue? The card catalog will either disappear completely or will cease to grow and provision for its eventual replacement should be made” (r).

The operational facilities and physical setting of information and library services have a significant effect on the quality of service delivery, and they also represent an important part of the resource management responsibilities of all information professionals. Irrespective of the scope for a new building or

11. Ibid. p. 283
extension, all managers need to consider remodeling, adapting or otherwise improving their existing accommodation to match changing demands. The following paragraph is concerned with the physical environment of service provision. It covers forward planning, day-to-day management and emergency situations, and includes assumptions about future needs, advice on planning and design and example drawn from operational practice.

The Service as a 'place

In order to inform either long-term or short-term decisions on space matters, a need to form a view of the library (or information center) as a physical place. There has been much discussion about the 'virtual library', the 'logical library', the 'electronic library' and the 'library without walls' in recent decades, and different opinions expressed on how library services will be affected by information technology and whether libraries will continue to exist as physical entities in anything resembling their current form. In his seminal article published in 1986, John Sack offered a radical view,

The library might disappear simply because it blended so successfully into the background of a scholar's activity that the scholar never needed to regard it explicitly as a place to go ...Thus, libraries disappear because they become invisible and because their location is wherever you are: 'without walls' ... More than a physical location, the library becomes a medium or ubiquitous utility, a service always ready at hand. (12)

Professional debate and speculation have continued during the intervening period, with some consensus emerging that at least for the foreseeable future “the library will have walls”. Indeed, in the academic sector, where many leading-edge electronic library developments are taking place, the last five years have been a time of phenomenal physical growth, with around 100 building projects in the U.K. higher education sector (largely as a result of the Follett report). The term 'hybrid library' is gaining currency as way of conveying the message that new modes of service delivery will co-exist with traditional print-based collection, and communicating the notion that services are in transitional phase, which will continue for some time. Many professionals believe library buildings will be just as important in the electronic environment, with continuing and expanded functions as a place for instruction and interaction, reflection and refreshment. The Standing Conference of National and University Libraries (SCONUL) representing 135 library and information services in higher education institutions, national libraries and museums in the U. K. and Ireland, endorses this view in its published vision of the academic library in the year 2002:

Many resources and services will be available electronically via the network, but student will choose to use the library as a place to work, both for quite private study and for group project work. They will see the library as one of the places where they can get help with using IT, as well as information and advice on the availability and use of learning materials. (13)

Indian University Libraries in Post Independence Years:

As a result of the programmes and policies of development envisaged under the Five-Year Plans, India has made significant progress in almost all walks of national life since independence. For example, the number of universities prior to 1947 was only 18 whereas it is more than 250 today. In addition, there are 15 institutions deemed to be universities and 10 institutions of national importance (14).

1.1 GROWTH OF UNIVERSITIES AND STUDENT ENROLMENT IN INDIA

The student enrolment, which was 3,556 in 1870-71, has increased to 2,430,000 in 1975-76. The growth curve of the Universities and the student enrolment makes an interesting reading of the sharp rise in the establishment of new universities and heavy student enrolment during 1960s and 1970s (15).

1.1.1 University Library Buildings:

The University Grants Commission (UGC), established in December 1953, was given statutory status in 1956. Its impact began to be felt from its very inception in the field of higher education in general and university libraries in particular. "By this time, all the universities without any exception were complaining about lack of adequate space to organize their libraries in a meaningful way" (16).

UGC seized the problem and came forward to provide funds for the housing of the university libraries. With this assistance, more than 60 university libraries have been able to put up new structures. Although the situation has much improved yet the desired results have not yet been achieved. The buildings have been planned without keeping in view various aspects such as the type of university. Hence, quite a few of them have become very much crowded and unserviceable while others have enough of unused space which will be quite sufficient for decades to come. The reason for this imbalance, perhaps, is that in most of the cases library experts have not been associated in the planning of the library buildings and wherever they have been, the architects have interpreted the expert's advice in such a manner that even the experts get surprised after looking at the finished structure. Space allocation for various library operations and floor allocations for various purposes do not

15. Ibid, P. 48
16. Ibid P. 49
conform to accepted standards. There are examples of wasteful lobby spaces, unexceptionally high ceiling for stacks, and too low ceiling for reading rooms. We can well imagine the plight of readers who have to sit there for long hours in summer and that too in the absence of any cooling gadgets, and with quite frequent power breakdowns. The provision of the seats is also very inadequate. There are only 16 universities, which have 500 or more seats in their library (17).

Even the newer universities have started the lack adequate seating accommodation in their libraries. The stage of shrinking reading rooms and galloping stacks is not too far.

There seems to be an urgent need to develop models of library buildings for different types of universities and UGC should look into this aspect without further loss of time as the money so far deployed for the construction/expansion of library-buildings, has, not produced the desired results. The provision of seats for students and research scholars is far less than minimum. Even in unitary, teaching and residential type of universities, the position of seating accommodation is not very encouraging.

1.2 Problem Statement:

Library space planning and utilization have become crucial today, given the factors such as information explosion, library automation, shrinking budget, increasing user needs, etc. Older buildings are constantly re-designed effecting all round change.

This calls for an assessment, and suggesting re-allocation of priorities for all resources - human, documentary and materials. A need therefore arises to study how libraries are meeting these challenges and preparing for integrating traditional and virtual libraries with a system approach. The present study aims at analyzing University Library Buildings in the region of Maharashtra with following hypothesis.

The present study ‘Space Planning in the University Libraries of Maharashtra in the Changing Information Technology Scenario’ involves the analysis of architecture, physical environment with proper and systematic planning of University Libraries as it is the art and science of buildings which serves varied and complexed needs of mankind. The Academic libraries are one such very complexed and varied creation of modern architecture. This study was undertaken to determine whether the digitization of information (and other new technological process) would provide any future space savings
for the University Libraries. While the researcher found evidence that the rate of growth for shelving space in some areas such as reference and periodicals may decline, he found just as much evidence that technology itself is increasing space requirements for the modern library.

1.3 Objectives of the Study:

The objectives of the study are:

1. To study the development of art and architecture with respect to University Library Buildings in Maharashtra.

2. To bring together modern planning and building designs concepts and examine the role of Librarian in the space planning team.

3. To assess space provisions recommended for various kinds of materials and users groups in the light of ergonomical considerations.

4. To include specialized aesthetic demands in the modern university library buildings for space provision and

5. To give system approach to architectural design of academic libraries with special reference to automation and online services and the Internet.

1.4 Scope of the study:

This study was intended to survey University Library Buildings with reference to Maharashtra State, and target population is 22 university library buildings and five institutes, which has university status. The list is as follows:

1. Amravati University, Amravati-444604
2. Bharti Vidyapeeth, Lal Bahadur Shastri Marg, Pune-411030
3. Bhabha Atomic Research Centre Library, Trombay, Bombay-85
4. Central Institute of Fisheries Education, Jaiprakash Road, Post Box 7392, Kakri Camp, Seven Bungalows, Yari Road, Versos, Mumbai-400 061
5. Dr. Babasaheb Ambedkar Technological University, P. O. Goregaon, Lonere-402103, Dist: Raigarh
6. Indian Institute of Technology, Powai, Mumbai-400 076
7. Indira Gandhi Institute of Development Research, Gen. A. K. Vaidya Marg, Goregaon (East), Mumbai-400 065
8. Indira Gandhi Open University, Mulund, Mumbai
9. International Institute for Population Sciences, Govandi Station Road, Mumbai-400 088
10. Kavikulguru Kalidas Sanskrit Vishvavidyalaya,  
    Waghele Banglow, Mouza Road Turn, Ramtek Road, Ramtek-411106  
11. Kokan Agricultural University, Dapoli-415712, Ratnagiri  
12. Maharashtra University of Health Sciences, Nashik-422013  
13. Mahatma Phule Krishi Vidyapeeth, Rahuri-413722, Ahmednagar  
14. Marathwada Agricultural University, Parbhani-431402  
15. Marathwada University, Aurangabad-431004  
16. North Maharashtra University, Post Box No.80, Umavinagar,  
    Jalgaon-425001  
17. Punjabrao Agricultural University, Akola  
18. Shivaji University, Kolapur-416004  
19. Shreemati Nathibai Damodar Thakersey Women’s University (SNDT),  
    Mumbai-400020  
20. SNDT, Juhu, Mumbai-400054  
21. Swami Tirth University, Nanded  
22. Tilak Maharashtra Vidyapeeth, Gultekdi, Pune-411037  
23. University of Mumbai, Fort, M. G. Road, Mumbai-400 032  
24. University of Mumbai, Jawaharlal Nehru Library (JNL)  
    Kalina Vidyanagri, Mumbai-400 098  
25. University of Nagpur, Ravindra Nath Tagore Marg, Nagpur-440001  
26. University of Pune, Ganeshkhind, Pune-411007  
27. Yashwantrao Chavan Maharashtra Open University,  
    Dnyangangotri, Near Gangapur Dam, Nashik-422005

1.5 Methodology:

The Researcher used Survey Method to collect the required information. Questionnaire/Checklist (see Appendix A) was used as a tool to collect the data regarding the library profiles, past, present and future plans (if any). The target population is University Library Buildings in the Maharashtra State (as mentioned above).

1.6 Purpose of the Study:

The purpose of this study was to investigate “SPACE PLANNING IN THE UNIVERSITY LIBRARIES OF MAHARASHTRA IN THE CHANGING INFORMATION TECHNOLOGY SCENARIO” and how much space is utilized in adopting information technologies in university libraries. The study explored the number of square feet of floor space used for electronic catalogues in relation to selected physical characteristics of university libraries.

Space planning is similar to other types of planning in many respects, but has some special features: it combines strategic planning and project planning, it requires close liaison with another set of professional, and it works
with multiple timeframes. Planning horizons will vary for different aspects of a building project. The use of strategic visioning in planning new facilities is becoming more widespread as a means of helping decision-makers and other stakeholders to form a clearer view of the kind of library envisaged and the role it will fulfill in the future. Scenario writing is a variant of this approach, which involves developing alternative visions of the future, and is thus a useful technique for illustrating the difference a new building could make to the local learning environment.

There are three widely accepted principles of planning and designing library buildings:

1. Fitness for purpose
2. Ease of use
3. Economy in operation

Beyond these fundamental principles there are several qualities that have been identified as important for the library buildings. The list in the figure below dates from the 1960s and is attributed to Harry Faulkner-Brown; a British architect who designed many award-winning library buildings around the world. (18)

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<thead>
<tr>
<th>A library should be ...</th>
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<tr>
<td>1. Flexible</td>
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<td>2. Organized</td>
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<td>3. Compact</td>
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<td>4. Comfortable</td>
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<td>7. Extendable</td>
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<td>8. Secure</td>
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<td>9. Varied</td>
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<td>10. Economic</td>
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While these concepts are still relevant today, changes in the way these terms are used, together with changes in the wider service environment (including the use of information technology) indicate the need for revision. Andrew McDonald has provided a revised list, suggesting that academic library space should be:

1. **Adaptable** - for example, floor loading sufficient for books stacks throughout the building and wiring provision for connecting all readers places of networks.

2. **Inviting and accessible** - including compliance with requirements for disabled access, and consideration of 24-hour access to meet user demand and reduce overcrowding.

3. **Varied** - to fill a range of library and related functions (including training and teaching) and to satisfy the different needs and preferences of individuals and groups.

4. **Interactive and well organized** - to optimize use of space and to promote interaction.

5. **Conducive** - facilitating access to information and reflective work over long period.

6. **Suitable and environmental conditions** - Acoustics lighting, temperature and humidity for the comfort of readers, efficient operation of computers and Preservations of materials

7. **Safe and secure** - paying particular attention to requirements for non-standard working hours, noting that security often conflicts with convenience, aesthetics and safety.

8. **Efficient and environmentally appropriate** - minimizing running and maintenance costs, delivering value-for-money, and conforming to environmental policies and standards.

9. **Suitable for information technology** - with cabling specified to accommodate future requirements, taking advice from computer specialists and networking experts. (19)

These qualities are equally relevant to any space planning project, large or small - for a new building, extension, refurbishment, adaptation, or just making better use of existing space.

Kate Ragsdale (Planning Officer at the University of Alabama Libraries, Tuscaloosa) has identified some fundamental issues, which apply to many – if not all – library construction projects, and she offers ten practical tips to assist librarians planning a new building or a major renovation:

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1. Hire an interior designer.
2. Remember the library signs.
3. Include the book detection system in the building contract.
4. Pay careful attention to the accessibility of the building.
5. Take lots of photos throughout the project.
6. Be prepared to compromise on items that are not vital to library service and to stand firm on the ones that are.
7. Join the architect on weekly site inspections as soon as the finishing touches begin.
8. Be generous in estimating the amount of time you will spend on the project, and plan to accommodate your other responsibilities.
9. As much as possible, follow up informal communication in writing.
10. Keep complete files on each building project. (20)

Space management is a relative neglected area of professional education, and is almost exclusively discussed in the context of the planning and design of the library buildings. It is also frequently neglected in the operational situation, which with roles and responsibilities in relation to space matters often not properly assigned - either not made explicit or not covering all the necessary areas and tasks. This is somewhat at odds with the perceived importance of ‘the library as a place’ and represents a significant short-coming in resource management, as noted by McDonald: ‘Space is a precious and expensive resource that should be planned and managed within a strategic framework for the development of the service as a whole, but it has sometimes received less professional attention than the other resources the librarian manages’ (21).

Operational management responsibilities for safety and security, pottering, cleaning, etc. are the most likely areas to be formally assigned. Strategic management responsibilities for space are often assumed to rest with service head, but some services – usually larger libraries – have explicitly assigned this role to a member of the senior management team, on the basis that this will help to focus attention, establish a continuing interest and encourage a proactive approach. Every space-related decision should be seen as an opportunity to adapt to new conditions and to create a better environment, thus representing short-term incremental steps towards longer-term change.

1.7 Limitations of the study:

This study was limited to Maharashtra University Libraries only. The study focused only on ‘Space planning and the use of information technologies in the university libraries’. Survey methodology was used for finding in this study.

1.8 Significance of the Study:

This study may be significant because library technology specialists and facility planner need information about space utilization for students/faculty access to electronic catalogues, collection developments and technologies in the age of Internet that goes beyond recommendations in the literature. The approximate amount of space actually used in the university libraries may be more helpful for future library planners for overall general guidelines. In addition, the specialists perceptions of the effectiveness of the location of technologies as well as perceptions about adequacy of that space may be used as planning tools to help other planners and specialists decide how to place and install the electronic gadgets.

This study consists of seven chapters. Chapter 1 introduced the study and described the problem. Chapter 2 reports the survey of the literature relevant to the study. Chapter 3 describes the method used to collect the data and explain how the data were treated. Chapter 4 analyzes the findings of the data and facilities planning for information technology. Chapter 5 Development of University Libraries in India with Special reference to Maharashtra State, and evaluation of space planning. Chapter 6 Space Planning in University Libraries of Maharashtra and finally conclusion and recommendations based on the findings reported in Chapter 7.