CHAPTER - I

INTRODUCTION

The Information Explosion has revolutionised the thinking and outlook of the librarians during the recent years. This phenomenon has triggered a series of changes posing corresponding challenges necessitating the re-examination of technical policies of library and information centres. Traditionally, one of the keys to retrieve the information has been the catalogue along with classification.

The catalogue which started in the book form did not remain stable. It went on growing in its character and complexities over the years both in the physical and inner forms. The users of the library system expected certain advantages from the catalogues. But they have always remained incomplete and deficient. The catalogue throws into two forms - Physical and Inner forms. In reality, they are two sides of the same coin. As the users' information seeking behavior changed, corresponding changes have been expected from the catalogues. Nevertheless there have been failures of the physical forms, to fulfill the expectations of the catalogue users. The current users expect physical form catalogue to be an effective, easy to use, efficient, reliable, compact and helpful system to deliver information about the documents in the library and information center.
The long era of traditional cataloguing ended with the introduction of Information Technology (IT). The developments in IT has forced the librarians in the direction of adopting new physical forms of catalogue, one such being On-line Public Access Catalogue (OPAC).

1.1 ONLINE PUBLIC ACCESS CATALOGUE (OPAC)

OPAC is an acronym for "On-line Public Access Catalogue". It is an access tool and resource guide to the collection of a library or libraries which provides bibliographic data in machine readable form and can be searched interactively on a computer terminal by users.

1.1.1 Definitions and meaning

Pierre Le Loarer¹ defined OPAC as "a database describing documents via bibliographic entries composed of fields some of which may be queried (essentially the author, title, and subject fields for querying by the public);

- a query function providing access to the database indexes: the user specifies the field (i.e., criterion) via which he or she wishes to query the catalogue. Either that or the system implicitly chooses several criteria (access to a general index) and then suggests the entries found under the different criteria, according to the result of the search...

- and (in some cases) a set of referentials or authority lists that allow a given item (a document’s author, subject, or language) to be consistently expressed in the same way, in the database and consequently retrieved in the same form."
Gorman\textsuperscript{2} has characterized an on-line catalogue as an "integrationist" and defined it as,

"a bibliographic control system that allows access by means of a number of access points (conventional and "unconventional"; single and in combination) to bibliographic data stored in machine-readable form. The data retrieved is displayed on a terminal screen or printed out on demand. Terminals are housed in the library or elsewhere. The user retrieves information about items held by the library and by other libraries".

Thus OPAC is a systematic record of the holdings of a collection. Its purpose is to enable a user of the collection to find out the physical location of the information in the collection. It is an access tool and resource guide to the collection of a library or libraries which provides bibliographic data in machine-readable form, facilitates search interactively on computer terminal by a user.

According to Hildreth, "Literature definitions of the online catalog fall into three categories, each representing a different perspective or model of the library catalog as the systematic record of a library holdings or as an access mechanism. The first category requires that the online catalog provide at least as much data content, organization, and access as the card catalog. The second category limits the online catalog to the data content, functionality, or usability of the card or book catalogs. The third category points beyond the traditional catalog forms and prescribes more data access, functionality, guidance and useability than is possible with the pre-online, manual catalogs\textsuperscript{3}".
1.1.2 Characteristics of OPAC

An online catalogue generally includes the characteristics listed below:

a. It is a bibliographic control system that allows access by a number of access points to the bibliographic data stored in a machine readable form;

b. Instructional help is provided;

c. It displays search results in readily understandable form;

d. An interactive information retrieval system;

e. Boolean operators for search refinement are provided;

f. It is an interactive catalogue with potential to overcome the major limitations of earlier forms of catalogues;

g. The use is no longer boring to the searcher, rather, it is more of interesting;

h. The updating of the catalogue can be done in a short span of time;

i. The contents of OPAC are not restricted to the holdings of particular library rather it can include the holdings of a number of libraries; and

j. OPAC may also provide information on the following:
   - The holdings of contents of periodicals;
   - A variety of databases, including full text files;
   - Integration of acquisition and circulation;
   - Instructions to use the OPAC; and
   - Information about the library and community events.
1.1.3 Generations of OPAC

According to Hildreth, OPACs can be categorized into "three generations' on the basis of the evolutionary changes to incorporate novel features in data content, access points and user interface.

a. First generation OPACs
b. Second generation OPACs
c. Third generation OPACs

1.1.3.1 First Generation OPACs

The OPACs of the first generation are referred to as "phrase indexed or pre-coordinate OPACs".

They were derived from circulation or from cataloguing systems and were characterised by Hildreth as being "Known item finding tools" which provide a few access points like author, title, class number, some times subject headings. The search pattern is more or less same to that of traditional catalogue and provide little assistance to the users.

A pioneering example of this category is LCS (Library Control System) of Ohio University. The first generation online catalogues provided only single format, and single mode of interaction system without subject access, authority-based searching with cross references, and meaningful browsing facilities. First generation online catalogues were understandably criticized as inferior to traditional catalogues. The sophisticated combinations of search could not be made possible in this generation. These OPACs are library oriented.
1.1.3.2 Second generation OPACs

The second generation OPACs are similar to Information Retrieval (IR) systems and many features are borrowed from commercial bibliographic information systems such as DIALOG, BRS etc. In other words, they represent "a marriage of the library catalogue and conventional online information retrieval (IR) systems". These are referred to as "keyword or post-coordinate OPACs".

It has improved capability for word searching. The access points are words from title-like fields, author and other names, and words from subject headings. These enable the users to have access to two or more search modes such as menus and commands and several display options. They provide keyword or free text access, corresponding post coordinate IR principles. The interfaces are generally commands driven, making use of Boolean logic. "Several second generation OPACs have two levels of user interaction- a simple one for "naive users" and an advanced one which may be the full command language of a typical Boolean IRS system."

The second generation OPACs, though resembles as online bibliographic IR systems, yet they are different on the following aspects:

- "the online public access catalog must be usable directly by untrained and inexperienced users (online assistance is usually provided to help with the mechanics of searching);"
records in the catalog database lack abstracts, the subject indexing is sparse and uses broad terms not representative of current terminology, and; the catalog database, in covering library's collection, includes information on a wide variety of knowledge fields and subject areas".  

However, the second generation OPACs are limited on the following counts:  

- They do not facilitate open ended and exploratory searches;  
- Users are not lead from natural language search to control subject heading;  
- Automatic assistance to the users is not provided for alternative search formulations;  
- The provision of comprehensive bibliographic information for the retrieval of records is ruled out;  
- Do not rank the output; and  
- Do not have adequate browsing facility.  

1.1.3.3 Third generation OPACs  

Third generation OPAC systems has combined the features of the first and second generations by providing both phrase searching and keyword searching. In terms of interface, this is often achieved by a simplified command language which facilitates user interaction. It leads users through menus and questions/answers as well as commands. The interface has improved help
screens so that the operations are simplified. Partial matching, stemming of keywords, ranking retrieved output, coordination level matching, automatic mapping and relevance feedback are techniques developed through research in OPAC and these carry great implications to the third generation of OPACs.

Some of this generation OPAC’s provide access to other kinds of bibliographic information. The coverage also includes journal articles paper clippings etc. Many third generation OPAC’s are offering command languages to OPAC users. However it has problems with lack of ease and simplicity of use for a large proportion of users.

The examples for the third generation of OPACs are MELVYL at University of California, LCS/WLN at the University of Illinois. National Library of Medicine (NLM) CITE OPAC etc.

The online catalogues are changing for ever depending on the trends in Information Technology and their applications in libraries. Each library develops its own OPAC based on software they use, thus providing a new breed of service to retrieve bibliographic information of its collection. And each system will be in operation for a few years and needs some improvement. To make any catalogue more effective and user friendly, it is to be evaluated periodically. At this juncture it is pertinent to mention the note worthy card catalogue use studies such as Michigan catalogue study, Yale University catalogue study and UK catalogue study. Therefore, it is imperative that the online catalogues needs to be studied from the user point of view, that will have a strong bearing on the functioning of online catalogues.
The OPAC has been accepted widely in the West, but this is still making its way into Indian Libraries.

1.2 NEED FOR THE STUDY

The online catalogues have been changing from time to time depending on the trends in Information Technology (IT) and their applications in library and information services. Each library develops its own OPAC based on the software used and each system will be in operation for a few years undergoing some improvement. To make any online catalogue more effective and user friendly, it is to be evaluated periodically from the point of users. On the review of literature on online catalogue use studies, it was found that four primary areas of study on OPACs were identified. They are:

a. Analysis of user behavior and requirement.

b. Examination of existing online public access systems.

c. Development methods for cost analysis and management.

d. Development of distributed computing techniques and system to system links.

To quote Katzer, "In evaluating the online interactive information retrieval systems one important area of investigation is that of users reaction to and attitudes towards such systems." 

The emergence of OPACs in Tamilnadu, which is the constituent state of India is of recent origin. In Tamilnadu there are 18 universities and about 230 colleges, a number of R & D institutions and special libraries. The
automation of libraries is slowly taking place at a few universities and college libraries, technical institutions and consulate libraries. None of the public libraries and school libraries have made an attempt towards automation.

Although the trend towards automation is increasing, nearly a few libraries in Tamilnadu have designed and developed OPACs and put to public use. The notable libraries are:

1. British Council Library, Chennai;
2. American Center Library, Chennai;
3. Madras Institute of Technology Library, Chennai;
4. Indira Gandhi Center for Atomic Research Library, Kalpakkam;
5. Mathematical Science Library, Chennai;
6. Regional Engineering College Library, Trichirapalli.

The development of OPACs in these libraries have emerged in the early 90s. While planning this research study, three libraries have given permission to conduct survey of users' attitude towards OPAC, namely, 1. British Council Library, Chennai. 2. Madras Institute of Technology Library, Chennai. 3. Regional Engineering College Library, Trichirapalli. These libraries comprises of a consulate library (subscription paid library) and technical educational institutions. (More detailed account of these libraries is presented in Chapter III).
Since the users' attitude is a vital factor in the study of any catalogue, it was thought appropriate to conduct a study of users' attitude towards OPACs in these libraries. Therefore, this study has been designed.

This study helps the librarians, information system designers and database creators who are engaged in the design and development of OPACs. It would also influence the existing OPAC system modification in the libraries under study and may also offer avenues to undertake similar studies in other OPAC systems.

1.3 STATEMENT OF THE PROBLEM

"A Study of users’ attitude towards Online Public Access Catalogue (OPAC)"

1.3.1 Explanation of the Concepts

1.3.1.1 Users

The term "users" include the regular users of the libraries under survey namely, British Council Library (BCL), Chennai, Madras Institute of Technology (MIT) Library, Chennai and Regional Engineering College (RECT) Library, Tiruchirapalli. These users, are not necessarily the users of other computer systems but tend to have an understanding of OPAC, as they represent technical education institutions and an elite subscription paid library. They are in the practice of consulting OPAC in their respective libraries.
1.3.1.2 Attitude

Attitude is a statement of feelings, opinions, knowledge, or intentions, observations of one or more overt behaviours and psychological measures. It can be described as a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object. It is a non-cognitive, classically conditioned emotional response.

Attitude is a positive or negative feeling that an individual holds about objects, persons or ideas. The concept of attitude is frequently used in efforts to explain and/or predict human behavior. The essential features of attitude are:

Preparation or readiness for favourable or unfavourable responses; which is organised through experience and which is activated in the presence of all objects and situations with which the attitude is related.18

1.3.1.3 Online Public Access Catalogue (OPAC)

(Detailed account of OPAC is given in the earlier pages.)

1.4 OBJECTIVES OF THE STUDY

The objectives of the study are:

1. To study the design and development of OPACs in the British Council Library (BCL) and Madras Institute of Technology (MIT) Library in Chennai and Regional Engineering College (RECT) Library in Tiruchirapalli;
2. To analyse the background information of the users of the libraries under study;

3. To assess the avenues through which the users learn to consult OPAC in their respective libraries;

4. To investigate the search strategy applied while searching the OPAC;

5. To study the hierarchical groupings of user experience with the OPAC features in their respective libraries;

6. To find out the users' attitude towards the improvement of system environment, improvement of working environment and improvement in the coverage of OPAC; and

7. To suggest the ways and means for the betterment of OPACs system based on the users' attitude in their respective libraries.

1.5 HYPOTHESES

The following hypotheses have been formulated for this study:

1. Users prefer to consult OPAC to card form of catalogue in the libraries under study;

2. The design and development of OPACs in the libraries is homogeneous in nature;

3. There exists no differences among the users of the libraries in the general attitude towards OPAC;

4. A number of sources are available to users to consult OPAC;

5. Users resort to a variety of access points while searching OPAC which a card form of catalogue does not offer;
6. **Difficulties are** experience by users while searching OPAC with the Boolean logic operators;

7. There exists no differences among the users of libraries under study with reference to the variables concerning search, search aids and display modes;

8. There are no differences among the users of libraries with reference to the variables purported to measure the facets of user preferences concerning the improvement of OPAC system environment and improvement of OPAC working environment; and

9. There are no differences among the users of libraries with regard to the improvement in the coverage of OPAC.

### 1.6 METHODOLOGY

#### 1.6.1 Sample

In the light of the stated objectives, a questionnaire (Appendix - A) was designed to seek users attitude towards OPACs in the libraries under study. The questionnaire was administered to the users of the online catalogues who were in the regular habit of using the OPAC. Random sampling technique was adopted to collect data on different days and different times of the day to include a proportionate number of participants from each of three different times of library use: mornings, afternoons and evenings, both week days and week ends. A total of two hundred questionnaires, for each of the library, were administered and the opinions were collected. Thus on the whole, this study comprises of 600 respondents.
1.6.2 Survey Questionnaire

A brief description of the questionnaire is given below. The questionnaire consists of seven parts.

Part - I : General Information about users and their knowledge about library catalogues: It covers educational status of the respondent as to weather Under Graduate or Post Graduate or Research Scholar or Faculty and any other category. It further elicits the users' preference to specific physical form of catalogue and their knowledge about OPAC.

Part - II : OPAC search pattern: It consists of the questions such as the access points used while searching OPAC and the purpose and means of searching OPAC.

Part - III : User experience with OPAC: It consists of 20 variables concerning OPAC features. It elicits users' acceptance or otherwise of those features with respect to their experience, in the libraries under study.

Part- IV : Suggestions for the improvement of OPAC system environment: It consists of 11 variables concerning suggestions for the improvement of OPACs system environment. It solicits users acceptance or other wise of those suggestions.
Part - V :  *Suggestions for the improvement of working environment (Physical aspects of OPAC)*: It consists of 9 variables concerning suggestions for the improvement of OPAC working environment. It solicits users acceptance or otherwise of those suggestions.

Part - VI :  *Coverage of Information in OPAC*: It includes various bibliographic forms other than books and periodicals. It solicits the users' views either to cover or otherwise of those bibliographic forms in the OPAC.

Part - VII :  *Any other Information*: It is a miscellaneous and open question which seeks the users' opinions and problems of their experiences and any changes they would like to suggest towards the improvement of OPAC in their respective libraries.

The data thus collected has been analysed through SYSTAT Software. Various statistical tools have been employed in the analysis and interpretation of data, such as frequency distribution and percentage analysis, Cluster Analysis and Principal Components Analysis (PCA). Further the analysis of data has been presented in the form of tables, supplemented by Pie diagrams, Bar diagrams and Dendrograms.
1.7 ORGANISATION OF THESIS

The thesis consists of six chapters. The introductory chapter discusses the concept of OPAC and the need for the study, objectives, hypotheses and methodology adopted in the study. The second chapter traces the review of literature on OPAC studies. The third chapter focusses on the libraries and their OPACs under study, namely, British Council Library (BCL) and Madras Institute of Technology (MIT) Library, Chennai and Regional Engineering College Library (RECT), Tiruchirapalli. The analysis and interpretations of the data are presented in the fourth chapter. The observation and findings forms the fifth chapter. The concluding chapter offers suggestions and directions for the future research.