CHAPTER 3

GENESIS OF GROUPING
1. OBJECTIVE
TO APPLY SYSTEMS-
APPROACH TO THE
DESIGN AND
ANALYSIS OF AN
INFORMATION
SYSTEM FOR
LIBRARY MANAGERS
-DEVELOPMENT
OF MODELS AND
TESTING

2 LITERATURE SEARCH
MEASURE OF
EFFECTIVENESS,
I.S. WITH O.R.
APPLICATION

3 GENESIS OF
GROUPING
ITEMS \rightarrow
PARAMETER

CIRCULATION
MODULE

ACQUISITION
MODULE

BUDGET OR
INVESTMENT
MODULE

USER MODULE

EARLIER
PROPOSAL.

SYSTEM-FLOW MODULAR CHART (CHAPTERS 1 TO 3)
3.1. ROLE OF THE OBJECTIVES OF A LIBRARY IN THE DESIGN OF INFORMATION SYSTEM.

The main objective of a library is to meet and satisfy the information needs of the users. In realization of the said goal, concerted efforts are advanced by the libraries in terms of instituting relevant norms, rules and regulations and exploring means, machinery and man power. At the service level for the user, the functions are classified into static* and dynamic** which can be viewed from the point of view of the total behavioural aspects of library system. The design of appropriate information system incorporating all the main considerations would be a major concern of the library managers tackling prolific issues.

The visualization of the library as a system warrants consideration of the behavioural aspects in terms of appropriate inputs to the system, technical manipulations and processings involved, and the bolstered outputs emerging from the system. In order to achieve the visualized goals, the behavioural aspects of a library

* Collection of documents for patrons' use, processing of documents for easy access by patrons; providing borrowing facilities to patrons are considered as some of the static functions of library.

** Providing announcement services, SDI services and other similar services which would motivate the patrons to use the library are considered as some of the dynamic functions of a library.
can, by and large, be considered as those of four macro modules which in effect represent the major functions of the library viz., circulation module, acquisition module, budget (or investment) module and user module, keeping in line with the various facets of information systems mentioned in the earlier chapter which are formulated, based on their applications in libraries.

3.2. Macro Modules Encompassing the Behavioural Aspects.

The delineation of the four modules is presented as follows:

(a) Circulation Module:

The main theme behind the behaviour of a library is to allow the patrons to utilize its resources by providing many facilities and services, and among them, the primary function is to provide access to library's collections for browsing, reference and borrowing.

In most cases, the browsing behaviour or the reference behaviour of the user results in his borrowing the publications. Hence, the 'borrowing' connotes both the 'browsing' as well as the
'reference' aspects. If a structure of behavioural aspects could be visualized within the 'circulation module', it can be seen that the 'borrowing', aspect is at the apex, followed by the reference, browsing, and all other supporting processes and services ('reservations', 'stack-maintenances' etc.).

(b) **Acquisition Module:**

Similarly, a structure can be evolved from the behavioural aspects of the acquisition activities with the total collection of the library at its apex and the related activities such as ordering, acquiring, classifying, indexing etc., at various levels.

The acquisition module is as important as the circulation module. In fact they are complementary to each other.
(c) **Budget or Investment Module:**

Though there are several budget heads in a library under which various expenditures are made, the expenditure on publications is considered as an investment whereas the other expenditures are of auxiliary importance. Hence, in this module, the investment on publications (macro documents and periodicals) is at the top of the structure.

(d) **User Modules:**

This module consists of different kinds of user behaviour in a library in order to fulfil his information requirements. A patron may visit a library for other needs (to use the non-book media; to have copying facilities etc.). Of all the above behavioural aspects, such of those that provided satisfaction to the users in commensuration with the available resources, services and facilities offered, are of more interest in the system analysis and design.
The four macro modules discussed constitute the significant sub-systems of a library. The data derived from these modules (either all items or the items at the apex alone) could be the appropriate input to the envisaged information system so that some useful hints might emerge while designing it.

3.3. INPUT TO THE INFORMATION SYSTEM:

As mentioned earlier, the four modules would generate some information which could be designed as input to the information system. Following are some of them:

a) Circulation Module:

   Over a specified period -

   1) Number of documents referred to by the users.

   11) Number of documents borrowed by users.

   111) Number of documents needed by users but not available at that time (Number of reservations made).
iv) Number of enquiries answered
    (reference service) etc.

b) Acquisition Module :-

    Over a specified period -

    i) Number of publications ordered

    ii) Number of publications acquired.

    iii) Number of publications classified
        and catalogued etc.

c) Budget or Investment Module :-

    1) Expenditure over macro documents.

    ii) Expenditure over micro documents

    iii) Expenditure over equipment.

    iv) Expenditure over maintenance.

    v) Expenditure over staff salary
        etc.
d) User Module :-

1) Number of users referring documents.

11) Number of users borrowing documents.

111) Number of users visiting to use copying facilities, non-book media etc.

1iv) Number of users visiting library for purposes other than the above.

3.4. CHARACTERISTICS OF BEHAVIOURAL MODULES.

In Chapter 2, we have seen that a pattern can be established among the reported information systems based on their applications which infuses the idea of 'grouping'. In other words, the genesis of grouping various activities of a library into four major modules has emerged. The behavioural aspects of these modules and the possible resulting outputs which can go as inputs to the information system being designed, have been discussed in the earlier section. It can be observed that these modules behave as if they are oriented in the direction of users' satisfaction. It becomes
explicit that users' satisfaction seems to be the product of service level indicated by the circulation module; but the circulation module is intrinsically related to the acquisition module which in turn depends upon the budget module. In other words, there seems to be a kind of telescopic effect on the system visualization which instills a new dimension to the concept of effectiveness of a library. This concept of effectiveness could be utilized as a basis for forming the envisaged information system.

The details about the concept of effectiveness with an added dimension and the details about how this concept can be used as a base for the design of the information system, are described in the succeeding chapters.

3.5. CHAPTER SUMMARY.

A library which is essentially a service oriented system, should aim at high quality service level and absolute user satisfaction. In achieving these, it is necessary to identify the behavioural aspects of the system with a view to manipulate the inputs, monitor the processing, and bolster the outputs. In this context the major functions can be depicted as four modules, viz., (a) circulation module, (b) acquisition module,
(c) budget or investment module, and (d) users module.

From the above categorization, it becomes explicit that the users' satisfaction seems to be the product of service level indicated by the circulation module. But the circulation module is intrinsically related to the acquisition module which in turn depends upon the budget module. In other words, there seems to be a kind of telescopic effect in the system visualization which gives rise to a new dimension to the concept of effectiveness of library.