CONCLUSIONS AND RECOMMENDATIONS:

On the basis of the result of the Literature Survey & Field survey, the study concludes that there are unlimited opportunities and benefits provided by the Information Technologies (IT) for S&T Libraries, but these technologies are not being used uniformly by them and there is a gap in the extent of their use. It also explores the factors responsible for this gap & suggests a Model Criteria for adoption and use of IT by these libraries. In the end of the Chapter it also gives its recommendations.

CONCLUSIONS AND RECOMMENDATIONS

7.1. OVERVIEW:

The literature survey presented a literature review. It explored the:

- Opportunities and threats of information technology of Information technologies.
- Background literature for Nolan's 6 Stage Growth Model & SWOT analysis.
- The use of IT in the given 75 S&T Libraries, a research design was developed.

On the basis of Organizational questionnaires and Organizational Data Sheet the study tried to investigate:

- The Phase of development of IT use in S&T libraries.
- The factors associated with the gap in the use of IT in S&T libraries.
- Model Criteria for IT use in S&T libraries.
The Review of the literature shows that lot of literature related to the IT use in S&T libraries is being published by the librarians and other specialist in the related field. Such literature is being published by in several international & National journals both related to Library Science as well as in related fields. The status of Computer-based literature as shown in the literature survey as well as given in the CD-ROM search of LISA Jan.'89 to December 2000 and the Compendex Plus Jan'89 to Jan 2001 shows that on different topics of IT use there were lot of information. For example on "Management" there were 31997 articles and books, on "Information" there were more than 1,13,870, and on "systems" there were more than 32,229 articles and books. The study also explored that there are unlimited opportunities and benefits of IT use in S&T Libraries and suggested a strategy for successful implementation of IT in these libraries.

Findings of the Organizational study & SWOT analysis show that all the given library systems are making the use of computer for the purpose of library management. However, the degree of and number of information area systems which were computerized varies.

- Out of the 75 libraries under study, only 25 are connected with the campus network and DELNET.

- At Nolan's 6 Stage Growth Model Scale, out of the 75 libraries under study, there is no library or Documentation Center available in Phase VI. There are only two libraries which are in Phase V of development. One of them is a Documentation Center and another one is a Library of Institutions of National Importance. The main factors of availability of this phase in these libraries are qualified staff, Availability of fund, Encouragement by the organization, awareness of benefits of IT, Status of Librarian etc. Same number of organizations were found in Phase IV. All the factors of growth &
IV. In Phase III of development, there were only 4 libraries.

- There were maximum libraries were available in Phase I & Phase II. About 50 Libraries were available in Phase I and 17 libraries in Phase II. This shows that there is lack of availability of sufficient fund for IT acquisition and implementation, lack of qualified personals, lack of encouragement by the organization, lack awareness of benefits of IT, lack of proper status of Librarian etc.

- The study indicates that all the libraries in stage III to V were having their own in-house database of more than 1 lakh records of books. It also indicates that no one of them is having all their bibliographic data conversed into computerized one. All of them were also having their OPAC.

- Out of the 75 libraries under study it was observed that all the libraries in Nolan's phases of development between III to V were having the central efforts for IT application. These S&T libraries are having their separate computer Application Division in their Library.

- It was also observed that all the libraries between phase III to V were having their integrated Modular Library Software in multi-user environment.

- In terms of the use of Communication Format and Data Dictionaries, there was no indication of a common data elements dictionary. Though all of them followed all the mandatory data element of UNESCO Common Communication format.

- In terms of computer resources used to support management function of the given libraries, the study indicated that some libraries are using only Pentium PCs, some of them are using server, and none of them is using Main Frame systems.

The findings of the Perceptual Study shows that:

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The use of IT in S&T Libraries is influenced by the different perceptual, cultural, and attitudinal variables. The conclusion of the Perceptual Study is drawn on the basis of:

1. Analysis of the Respondents Profile,
2. Analysis of Statements,
3. Testing of hypothesis,
4. SWOT Analysis.
5. Auditing of all the factors of SWOT analysis.

The Respondent Profile shows that:

- Involvement in the Library automation also had a positive effect on the perception of library managers towards IT use in S&T libraries.
- Gender of the library professionals played no role in their perception towards IT use in S&T libraries.
- Knowledge of Computer had positive effect on the perception, attitudes, and value towards IT use in S&T libraries.
- Computer Qualifications also had positive relationship with the perceptions towards IT use in S&T libraries.
- Library managers in the various age group had no difference in their perception towards IT use in S&T libraries.
- Library managers in various group of salary Pay scale had no difference in their perception towards IT use in S&T libraries.

The Analysis of statement shows that:

- The average mean score of all the 21 statements is 3.15 which mean that the perception of Library Managers about the use of Computer based MIS lies some where between agree and undecided positions at the Likert scale. This shows that the Library Managers understand the capabilities of the IT use in S&T libraries.
• The trend of the responses that those who are involved in computerization they are more aware about inherent capabilities of IT use - the respondents feel that IT use can help them to provide better service for providing quality management information.

• Over and above the, the perception of the managers of those library who are having computerization was quite positive.

• There were very few library managers whose library is in very initial stage of computerization or there is no computerization, perceived IT use as a burden. This is perhaps due to the fact that due to ill planning and implementation they faced lot of problems and they are having negative perception about its usage.

• Statement 4 and 5 load highly on the factor "Future Outlook". This indicate that the new information has reached at the door steps of library which has created a high pressure of change. The conclusion drawn from this factor is that the library managers should be prepared to accept the challenges of change. This also suggest that there is a need to prepare all the inputs man, material, management machines to face the future challenges.

• The second Factor "Support & Direction" Comprises top management support (St.9); Financial Support (St. 10); Impact on management style (St. 11; St.2 ; St.1; and St.14. Except St. 11 all are related to the development in external environment of which our respondent show strong agreement. This indicates that they are highly aware of the changes and new development.

• The St.11 "library managers are afraid of computerization" also loads or correlated highly with this factor. This indicates that there is a lack of practical knowledge and skill to understand and derive benefits from these latest changes in information technology related to the libraries.
The Auditing of the results of the Respondent profiles, Organizational managerial perceptual study and the SWOT Analysis study taken together, clearly demonstrated that:

- The mean score of the growth of development of Information Technology in totality in all the 75 S&T libraries of Delhi region is 0.363, which shows that the libraries at Nolan's 6 stage Growth Model are in phase II.

- While the perception of the respondents is characteristic of Phase V, the existing infrastructure and resources for computer based MIS in academic libraries is characteristic of Phase II.

- This represents a serious gap in the future expectations of respondents and the support provide to them.

Some of the factors of slow growth in the development of IT application in the libraries investigated in the study are:

**Managerial Factors** - Human tecno-fobia have been found one of the reasons for the slow growth in the development of IT in S&T libraries.

- It is found that it is a technical responsibility with little participation of library mangers, as a result many of the systems proved to be unsuccessful to meet management requirements.

- Hiring and maintaining qualified personnel to support the development is also a problem.

- Lack of familiarity with the advanced and use of new information technology by the library managers is also a great problem.

**Information Factors** - Most of the computer applications were designed around prevalent operational need with little attention information requirement of the library decision maker.

**Systems Factors** - Where on hand the availability of computer Hardware and Software resources forced the development of computer-based MIS as a need to make their better use,
on the other hand their maintenance and use was found a problem. The planning of Computerization project is also lacking the well structured technique.

**Technological Factor:** Technological conversion of Information Technology - telecommunication, data communications, Internet, Satellite and terrestrial broadcasting, software and content creations etc. are the Constant & external factors.

### 8.3 Recommendations

It is recommended that:

- A Computer Monitoring Committee should be establish by all the S&T library with the objective for the planning and policy making for IT application & sharing of Digital resources. This should be high power committee may be headed by the Chief executive of the Institution with the representation of Librarian' Head, Computing facilities in the institute' and two Computer specialists nominated by the executive Council of the Institute.

- The procedure for the proper coordination among the S&T libraries should be evolved for the effective implementation of IT application & Digital resource sharing in S&T libraries..

- S&T libraries should cooperate in developing a common data element dictionary that can be used within each institution and among the institutions. The availability of a common data dictionary for these libraries will improve the possibilities of data exchange within the institution and among the academic libraries of other institutions.

- The institutions of the concerned S&T libraries should motivate the staff involved in IT application and development.
The training needs should be assessed based on the level of user awareness. Training to personnel should also to match the requirements of users and the existing resources.

There is a need to chalk out the plan for acquisition and implementation of IT resources and also to decide the criteria of specification for acquisition of resources.

There is a need to implement the plan in phased manner.

8.4. Areas of further research

In the study important aspects could not covered due to the limitation of the study. There is a need to study in depth all the important aspects related to:

- The issues related to the IT application in S&T libraries in association with the various Social, Technological and behavioral issues such as: a) Motivational; b) Personality; Attitude; Job satisfaction; c) Career advancement; d) Organizational Climate; e) Areas of conflicts; f) Planning and Management of Computing Resources, Social issue etc.

- The present study is limited to the broad aspects of Organizational and Perceptual aspects of the development and growth in the given S&T libraries all available in Delhi, there is a need to conduct such study in depth taking one or two aspect on all India basis.

- It is also suggested that similar kinds of studies can be undertaken in different type of libraries available in different metropolitan cities.

- There is also a need to undertake study related to the all aspects of resource sharing specially the digital material in S&T libraries.

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