ROLE OF AUTOMATION TECHNIQUES AND THEIR APPLICATION IN SCIENCE AND TECHNOLOGY INSTITUTE LIBRARIES OF NCR

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ABSTRACT

Modern society demand for specialized information in specialized and technical institutions in their day to day activities and services and consultancy work for which such technical and science institution require speedy access to specialized information and such information may be provided to the users speedy. This type of service required such vast amount of information, which should be precise, effective and accurate information.

Modern era is automation age and every library is undeveloped area and field a series of automation activities are being applied. It is a computer world which is going fast towards automation particularly is science and technical institutions. Automation is not helpful in offering efficient services. It has also opened new doors in the field of bibliographical control but also allow access to required database in India and abroad.

Keywords: *Automation, ICT, Modern Library, OPAC.*

INTRODUCTION

Library automation started in 1970 in few libraries of specialized field which has now reached to many more libraries of all types i.e. academic, technical, scientific and research libraries. Libraries are shouldering great responsibility to provide update and timely information to their clients and improving the quality of education especially science and technology field.

Library automation refers to used of computers along with associated peripheral media i.e. (a) magnetic tapes (b) disks (c) optical media etc. (a) computer based products and services in the performance of libraries along with library function and operations. Computers are capable to introduce automation in operation/function. Computers are produce programme and able to control the process system performed.

Computers produce such related techniques which could provide the right information to right user, at right time, in right form and in a right way. Such automation provide such service very accurately, rapidly,

efficiently, adequately, economically and effectively.[1] Modern libraries provide free access services, free communication as access to information has become a fundamental right of a user.

The automation is economically feasible as it required reasonable economic load. It is technologically required in modern libraries to meet the new knowledge. There has been enormous increase in library collection and its has become the problem to handle the problem of acquisition, storage space problem, processing, dissemination and transmission of information. All these problems are being solved by the introduction of computer as it has capability of improvement, qualitative, quantitative, particularly in online technology. Computer leads to automation and automation leads new technologies to access information.

Automation help in accessing information. Information are extracted from the documents and other library resources available. Thus maximum details collected are recorded in standardize format i..e Accession register in a computerize system. Details are entered once only stored properly and arrange in a desired sequence.

NEED FOR AUTOMATION

No doubt automation is must for libraries. It has been essential for librarian to make efforts to provide a master stroke or master key to access quickly and control the knowledge explosion and control the repository of knowledge. Librarians have started more sophisticated mechanism activities for the maximum use of vast amount of knowledge.

There are many gadgets were adopted while started mechanized activities by librarian:

(1)   New techniques to control knowledge explosion,
(2)   Depth of content analysis selection and manipulation,

(3)   Quick access of information,
(4)   User's service,
(5)   More efficiency,
(6)   Saving the time, money and human labour,
(7)   Service accuracy and services promptness,
(8)   Application of machine readable form,
(9)   Avoiding duplication of work,
(10)   Easy and accuracy in handling large data,
(11)   To resource sharing among different libraries through computer networking at national and international level,
(12)   To improve library services,
(13)   To create efficiency in library management,
(14)   To avoid duplication of work.

BENEFITS OF AUTOMATION

There are many benefits of automation:

(1)   It handles a large volume of routine and respective transactions,
(2)   It provide many facilities: Retrieval of information,
(3)   Assist in library and authority management,
(4)   Reallocation of resources to meet contemporary needs,
(5)   Offset cost of labour,
(6)   Resource sharing,
(7)   Sharing staff specialization,
(8)   Improvement of communication.

CHARACTERISTICS OF AUTOMATION

In simple words library automation means the application computers and utilization of computer and its base products and services provided which help in carrying out various functions and operations we can call automation as a high degree mechanism in which machine perform the library operations

and routing work. There is less human interference and greater degree of automation function.

Computer system has following characteristics :

(1) Capability is storing large quantity of information, as the whole library catalogue can be stored in one magnetic disc or computer,

(2) Information is rapidly processed accurately,

(3) It can manipulate bibliographic data to produce catalogue cards, sorted list of books,

(4) The information stored in computer can be easily searched and retrieved,

(5) Information may be edited and modified easily in computer system,

(6) Information stored in magnetic disc of computer can be communicated to telecommunication lives in high speed to remote locations.

In view of the above we can evaluate the existing application information communication technology facilities provided by the science and technology institute libraries in Delhi NCR region. The present analytical study presents fundamental understanding on the current states of ICT application in science and technology libraries. It will also indicate and useful to suggest suitable modification of improvement in Science & Technical Institute under study.

OBJECTIVES OF THE STUDY

The study of science and technology institute of Delhi, NCR has been undertaken with following objectives:

(1) To find out the position of implementation of automation in institutes.

(2) To find out the change in library services after automation.

(3) To find out the position of library personnels to carryout automation.

(4) To find out the barriers faced in implementation of automation in institutes.

(5) To find out the users satisfaction level and their view point towards.

(6) The effective automation services of technical institute of NCR.

SCOPE OF THE STUDY

Since there are many science and technology institute/universities in Delhi NCR. But due to limited time and money, it is not possible to cover all of them under study. Hence, only 9 important institutes have been taken for study in this research work. The study of these 9 Science and technology institute/universities will reflect the position of all such institute/universities of Delhi/NCR. These are similar and unique in nature. The study is designed and carried out with the view to get an overview of methods, means and steps, taken to adoption of automation in the libraries of Science and Technology Institute/Universities libraries.

RESEARCH METHODOLOGY

Knowledge is based on knowledge and experience. It is a workout facts based on principles or theories. The knowledge is multiplied by the results and conclusions drawn from research. The research outcome is :

(1) Previous knowledge,

(2) Knowledge sought,

(3) Result drawn.

SURVEY METHOD

It is a survey method and information is an essential element for progress in science and technology education. The automation process and use could be measured in various ways. The important method is a survey method.

This method survey method is designed in many stages:

(1)   Planning,
(2)   Structure of research,
(3)   Strategy of investigation.

Planning means from investigation to reporting from writing the hypothesis and operation stage to final analysis stage of the data.The structure is a outline, the scheme, the paradigm of the operation of the variables.The strategy includes the methods to be used to collect and analyse the data.

Therefore, a design mainly has following purposes (a) help the investigator (b) obtain answers to question and control variance (c) help the experiments (d) research design must have validity, objectivity, accuracy and economical.

However, a research design explain:

(a) What are observations ?, (b) How observations were, (c) Analyse the quantitative representation of the observation, (d) Type of statistical analysis used, (e) conclusion drawn from statistical analysis.

The automation process could measure in various ways. The important method is a survey method. The methodology used for the present study is questionnaire based survey, the contact with different science and technology institutes/universities of NCR and collected data through formal and informal sources. A well structured questionnaire was sent to each institute/university to ascertain the status of library automation and understand the problem faced by them in automating their routine function and services. In the investigation 9 institutes/universities have been taken for study.

HYPOTHESIS

Hypothesis is known as probabilities of the present position of the institute/universities of NCR. The following hypothesis will be identified and proved in study:

(1)   Majority of the science and technological institutes libraries have taken up the process of automation.
(2)   All institute/universities (NCR) are taken up the project of automation and applying ICT.
(3)   Science and technology institutes in question have sufficient resources for automation.
(4)   Human resources are sufficient in such institutes/universities.
(5)   Automation has been useful and beneficial to users in these institutes.
(6)   User awareness about automation system is sufficient.

REVIEW OF LITERATURE

During the research project the following literature has been searched and reviewed:

1. **Barhara K. Bahrman and Jack Weirs A. (1985):**
   During the period many research centres were established as learning resources. These centres were sources of study and worked as resource centres. Such centres were in more need. Such centres faced many problems and situation in which expansion services were introduced and played and insurmou table task. The main task of these centres were to introduce automation programmes and applied various forms of automation for solving the problems faced by these centres. But the automation system needed more cost, costly complex and for reaching in their effects.

2. **Marveen Pastuie and Carolyn Keena (1994):**
   The author discussed various activities of Southern Methodist University and the cost for the library. He also reviewed

automation activities, automation costs and requirements. Budgetary requirements were also discussed in the article as well as budgetary requirements to meet the electronic library needs in various kinds of libraries, small or large size university libraries today.

Keywords: Library budget, automation cost.

3. **Rajni Kanta Barman and Sanjay Kumar Singh (2007):**

The author stated that library automation leads to computer based information processing which generates day to day operations of library systems and services. In other words, computer system serve the universal system of library activities so that every wing of a library can perform its every activity. The author further focus on manpower aspects of library automation. He discussed various aspects of college libraries of Assam. The automation status has been discussed about library survey, library software and library services.

Keywords: Library automation, computer based information.

4. **B. Vinder Kaur (2011):**

The author stated that information technology has given more impact on library services. It has also influenced information system of libraries. Libraries are no more store houses. There have been conventional collection in all libraries but this trend has been replaced by digital collection by applying information technology and also made possible the quick access to information.

Keywords: Library services, information technology.

5. **R.P. Bhamidas (2021):**

Author says networks is smart and allow free access to all digital libraries in present society. Smart library has well behavior and a designed programmes to equip libraries and serve the users with modern technologies. Internet is a major component which is related daily life. Libraries are learning centres and information centre which deliver the resources to users to access information and support the society.

Keywords: Advance library, Cloud computing, Internet, E-resources

CONCLUSION

The modern era is a digital era applying automation techniques and the environment is a challenge to library professional to meet the increasing information demands of the users. There is a flood of information and problem before the researchers and information seekers. Now libraries have collected e-resources which are accessed by users and solve their problems.

Other important solution of availability of e-resources and access to information is consortia. We can call it collective purchasing e-resources economically and collect or use e-journals on cooperative base. Union catalogue, cooperative acquisition, cooperative cataloguing, ILL and shared library system and moreover, shared professional expertise and human resource development.

There are many specific software being applied in science and technology institute libraries. Some are priced and some are free open software like Libsys and KOHA etc. Other softwares are also in use in some of institutions like D-space, CD-sware, Gavesha, Greenstoen and Fedora. All open source software have different specifications having their separate webpage which is searchable and allow free access, i.e. (a) D-space (MIL Libraries & Hewett Packed Labs) (http:/dspace.org) –apache web server (b) E-print (University of South amption) (http://software.eprints.org): Apache My SQL database: (c) Fedora (Virginia & Comeli University) (http://Redora.inf): Sun Java MYMQL.Oracle-9.Window Unix (d) Greenstone (University Walkats, UNESCO) Apache MSQL Database.

FINDINGS OF THE STUDY

The study distributed 640 questionnaires to users, out of which 540 questionnaires were considered for study (90.73%): Faculty 90, Research scholars 45, P.G. students 180 and U.G. students 225 only.

1. There have be found – (a) Increase in user no to 31.85%, in service 60%, print collection 20.74% and digital collection 65% of the total accountability.

2. All institutions have taken benefit of all main e-journal consortia particularly UGC-NET and JEEE-G-Gate etc.

3. From study it has come out that science and technology institute of NCR are partly s satisfied with use of library consortia (31.48%) and satisfied (28.15%) but only 13.33 were fully satisfied. On the other hand 25% respondents were unsatisfied and institutes need more attention to users need.

4. So far the approach to websites for searching information is concerned, library website and search engine are more actively used, while online journal websites need more attention of librarians.

5. While studying and investigation the problems faced on using new technologies, it was found that e-journals available in these institutions are not sufficient or to the needs of users (42.59%). Moreover the tracing and accessing is time consuming (20.79%) it needs staff/students training.

6. Faculty and R.S. give more time to search information and attending the library (61.53%) and 67.05%). In whole all respondents give more time (56.11%) while seldom (25%).

7. Bulletive Board System is more used by users (77.78%) in comparison with e-mail and file transfer. Users gave less attention on Telex and Video conferencing (22.22%, 33.33%).

8. Most of the respondents prefer virtual system than traditional systems. (82%, 18%).

9. It was found that the e-journals subscribed did not cover the full needs of users (31.48%), while users could not found sufficient time to access information because of busy schedule of teaching and projects.

10. The respondents of age 21.25 consult internet in more number (44.44%) than other age groups.

11. Libsys and KOHA are more preferred softwares used in science & technology institutes/universities.

12. Google and Yahoo are most favourable search engine.

13. Automation has cause to increase in user's number (78%) and also increase in circulation or access to information.

RECOMMENDATIONS

On the view of the findings and study of science and technology institute of NCR, the following points may be stated as recommendations for the more better collection of e-resources, accessing the information and better services are as follow:

1. Human resources skilled should be enhanced by organizing refresher courses, seminars, and conferences from time to time.

2. More e-resources of choice of library users should be acquired under serious review of present e-resources so that more satisfactory and user's choice e-resources should be acquired and such e-resources which are not for more use may be discarded.

3. Latest and updated e-technologies should be adopted and similarly users should be aware with new technologies time to time.

4. The trend of increase in users number is no doubt at slow speed, even them new technologies should be encouraged.

5. There have been insufficient increasing trend of digital collection because of unawareness of users and less smartness of guidance and help of library professionals and faculty help. It should be encouraged.

6. No doubt consortia has been more useful to the users in a library. But sometimes it could not be more useful because of not reviewing the requirement of users and faculty unawareness.

7. Web technology has not been still common among users, which should be encourage and guided.

8. It has been experienced that users attend/visit libraries often or with interval due to curriculum load. Library professional and the open declaration of library services, users should be award continuously.

9. Libraries should provide more latest and advanced computer system to enjoy the use of internet increasing 2-3 times more to provide user's service.

10. Open access service is not more popular which should be put before the knowledge of users.

11. Digital reference service should be developed and users should be encouraged.

However, automation technology is not still popular among the users of libraries. It is a part of life. University/Institute libraries have adopted new technologies, but still there have been many barriers liked skilled staff, insufficient staff, insufficient funds, lack of referral services which should be given more attention to redress. These barriers at the level of librarian and the institute authorities.

FUTURE PROSPECTS OF RESEARCH IN THIS FIELD

Automation technologies is a vast field of learning in automation field. It covers many information systems including softwares, e-resources, information medias and barriers covers in the way of automation awareness.

However, a good number of researches have been undertaken in the field of automation and automation technologies and automation information systems. But still there have been much scope and field in automation, its technologies and related information systems in which much more researches may be taken up for more conclusions to be drawn.

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