HARDWARE PROBLEMS FOR DATABASE DEVELOPMENT.

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ABSTRACT

Hardware, software and peopleware are the three important requirements for database creation and management. Non-availability of financial resources is mostly a reason for lack of infrastructure for developing computerised databases of the libraries, but there are other reasons also due to which suitable facilities may not be developed. The paper explores all such reasons providing a case study of the Jammu University Library.

Introduction

The world is going through a fundamental change. Computers and telecommunication facilities are penetrating almost every profession and creating a new kind of work culture. These facilities are also both a major cause and an effect for globalization of businesses and services as they provide the vehicle for rapid transfer of voluminous data and information to any distance at any time. They provide the speedier access to information and hence opportunities for leveraging quick advantages from information.

Rapid technological developments facilitate metamorphosis of institutions, Career shifts, demand retraining of staff and more investments for developing new kinds of infrastructure facilities. Formerly computers were accessible at a central place in universities, research institutions and business corporations i.e. the computer centre where the researchers used to visit for data processing and few staff members working there used to process data on behalf of researchers. Presently the same computing power is made available virtually on the work table of every serious researcher of business executive. By the beginning of the next century almost every professional will have to handle computers to do real justice with their work and their jobs.

"Primarily service oriented professions are generally more susceptible to sudden technological changes and library and information science is no exception"...... Developments in Information Technology (IT) have considerably enhanced the capabilities of libraries to appropriately and comprehensively meet the information needs of library users. Electronic journals and reference works on CD-ROM disks help to reduce shelve space. Online databases offer opportunities for libraries to quickly search information from any distance to the best possible satisfaction of information users. Small powerful computers and communication facilities integrate the isolated libraries into a network which can be used for information exchange and resource sharing activities. The technology will provide greater work efficiency and greater flexibility in work.

Electronic publishing industry is having a profound influence on libraries and information centres. Electronic publishers are gearing for the just-for-you publishing and just-in-time delivery, the libraries too will have to consolidate their resources, redefine their roles and organise value added services. Some libraries, publishers and IT industries have started joint projects to study how electronic delivery systems can better serve the users. "The Elinor Project at De Montfort University, Leicester is a partnership between the library, IBM, the British Library Document Supply Centre, and Elsevier Science Publishers. This is a pioneering project started in November 1990 to develop a fully electronic library".... In the United states also libraries, IT industries and learned societies have collaborated to supply the feasibility of efficient electronic delivery information system. "AT&T Bell labs, the American Chemical Society (ACS) and Cornell University, in their CORE (Chemistry Online Retrieval Experiment) project, have been working together to put the full text and graphics on all

the ACS journals into an electronic file that includes articles from 1980 onward."....

How the Cyberspace will influence the library functioning and library environments ? Cyberspace is likely to create a new realm of work and will influence the society as a whole and library and information work in particular. In a networking environment of interactive computers, librarians are likely to make abundant use of cyberspatial tools for searching and distributing information. This category of librarians called cybrarians will increasingly explore and navigate the cyberspace. "Let us not forget that if cybrarians are indeed to be such knowledge workers, whose main tasks is to produce 'added value' in the form of knowledge and intelligence, not just raw data and information, then most of us will need to re-evaluate our working practices"....What will be our functions as cybrarians ?" Though computer scientists have started building navigational tools such as Archie and Gopher, the need for cataloguing, classification, indexing and abstrating, will need to be performed by this new breed of librarians i.e. cybrarians. Highlighting this need, Daniel Dern, former editor of Internet World, once said, "the internet is the librarian's full employment act for the nineties."....

Developing Infra-Structure in libraries for IT opportunities

In view of the fast new developments in IT, libraries are facing the challenges of managing the change and adequately utilising the new developments and opportunities for improving the efficiency and widening the scope of services. "For the library to adopt and facilitate absorption of new technology, there should be encouraging library authority, requisite equipment, adequately trained human resources and users should also be inducted to the new kind of facilities."... Any imbalance in these requirements may seriously affect the utility of the system. "If the staff is properly trained but there are no equipment to practically perform the work, the training imparted is rendered useless after some period of time. In case the necessary infra-structure exists but staff is not adequately trained the equipment may be idling in the library. Lack of user's awareness regarding existing facilities may lead to serious underutilisation of the newly developed facilities."...

The library manager should have adequate informational level regarding the developments in IT and opportunities it offers for libraries. This will be useful in securing funds, acquiring hardware, hastening the development of facilities and avoiding the problems that creep in during the development of infrastructural facilities. Keeping in touch with developments in IT is in the best interest of the library manager as it has a considerable bearing on his work. Technology update helps the manager to select appropriate hardware for the library. For example PC/AT-386 introduced in 1982 is already obsolete and has been withdrawn from the market and PC/AT-486 introduced in 1986 will stay for next few years mainly on the strength of advertising rather than technology. These Computer systems are being replaced by Pentium, P6 and P7.

The configuration of the computer(s) to be acquired depends upon the proposed volume of the database. It also depends upon if the computer system is also to function as a server for Local Area Network, and support CD-ROM player, etc. Computer vendors offer computer systems of various configurations at various prices. The library manager can select the system of desired configuration and keeping in view the funds available for hardware development. When buying a computer, total price alongwith details of all the specific components and after sale service provisions should be asked. Sometimes computer vendors tell the price and if there is not much objections from the buyer, they politely say the cost of training is extra, If the customer still does not flinch they may say the cost of particular provisions of memory, etc. is extra. IT industry, however, is a very competitive industry. A visit to a trade fair of IT industry e.g. IT Asia 95 not only updates the buyer with what is latest available in the market but also helps to select the required hardware at a reasonable price. The prices of computers are often slashed by the companies and likely reduction in prices can be smelled in the market. If there is likely to be a substantial price cut in the computer prices in the very near future, the library can wait and watch for some time before it acquires a computer system. However, this wait and watch policy should be avoided if the system(s) are urgently required to immediately start with the computerisation of some work.

Development of hardware facilities for database development is beset with several problems in

the real work situations. Non-availability of requisite funds may not always be the reason. There may be personal attitudes and phobias which may delay the work of acquisition of hardware facilities. Lack of initiative of lack or interest on the part of library manager can seriously affect the development of hardware facilities. The following case study depicts the problems regarding development and setting up an online facility at the University of Jammu, Jammu.

The University of Jammu is among the first eleven Universities included under the first phase of Computerisation of University libraries under the INFLIBNET programme. Under the scheme the university was provided Rs. 5.73 lakhs during the financial year 1993-94 for procurement of Computers and associated systems. Of the amount of Rs. 5.73 lakhs, the UGC released Rs. 4.45 lakhs as per information received from the Assistant Registrar, University of Jammu (UGC cell) through his letter dated July 26, 1994. Of the amount of Rs. 4.45, Rs. 3.50 lakhs were to be utilised for purchase of computer systems, Rs. 0.50 lakhs for the site preparation, furniture, electric fittings and air-conditioning; Rs.0.30 for Modem and telephone.

A Computer Purchase Committee (CPC) was constituted for the purchase of Computer and associated systems. The librarian and other library staff was often consulted on certain issues but none of them is a member of computer purchase committee. As per configurations and specification of INFLIBNET, quotations were called on August 24, 1994 from 16 reputed computer vendors. Quotations were received from 11 vendors and opened on October 10th, 1994. Comparative statements of offers of various firms was prepared and on the basis of this information and in the best interest of the University, three firms were short listed. It was decided that these firms may be invited for further discussions and negotiations. The firms were invited for discussion on December 21, 1994. The computer purchase committee at a meeting on March 16th, 1995 decided to invite the firms to take final decision. The Computer Purchase Committee's another meeting fixed for April 24, 1995 could not be held. A few more meetings of CPC were held but the University Library is yet to acquire computers and other associated systems for the computerisation of the library.

After the month of April 1996, the prices of computers slashed and some firms sent their fresh offers. Some firms now offer better systems which are Window-95 operating system compatible. Moreover vendors conveyed their inability to supply the PC/AT-386 machine because of its obsolescence and instead offer to sell PC/AT-486 at the price of PC/AT-386 quoted earlier in their offers. The CPC is a very competent team and has taken decisions in the interest of institution, but the problems such as purchasing the system within the limits of funds may be one of the reason to facilitate a best deal for the University. Meanwhile CPC has desired the library to go ahead with the site preparation work so that the systems when acquired may not be idling. For site preparation acquisition of futniture, etc. too the amount allocated is less than the actual cost involved.

Two persons, one from the central library and other from the computer centre were trained at Ahmedabad, under the INFLIBNET training programme. The person trained from the computer centre is on long leave from the University. The UGC was approached to sanction a post of Computer Scientist and a sanction of the same is received. The state government has been approached to approve the post so that the same may be advertised. Several reminders have also been sent to the state government but the approval of the State Government is yet to be received.

The University library applied to the telecommunication Department for 099 code and STD connection to access the I-net facility. The existing non-STD telephone has been converted into the STD telephone. The INFLIBNET, Ahmedabad sent several requests that necessary equipment may be acquired and site developed so that the library management software package may be installed and INFLIBNET personnel may be sent to provide necessary assistance. The UGC headquarters is asking for an audited statement of expenditure for the grants allocated under the INFLIBNET programme.

Meanwhile the trained assistant librarian has sent to INFLIBNET Ahmedabad bibliographic information of 575 books and 313 serials and compiled this information using the CDS/ISIS software and the hardware facilities at the computer centre of the University. Data capaturing for more than 1000 theses and 2000 books has also been completed and is likely to be sent to Ahmedabad.

Conclusions

The information technology is moving at much faster pace than the time involved in decision making at our academic institutions. Some of the firms which offered quotations for hardware for our library now offer computer systems with better technology and they have shown their inability to supply PC-AT/386 as the system is already obsolete. The only advantage we got because of unreasonable delay is that, now we are offered better computer systems at a reasonable price.

The UGC has provided funds to 43 other University libraries in the financial year (FY) 1994-95 but some of the eleven University libraries already granted funds during the FY 1993-94 are yet to develop hardware facilities. The INFLIBNET should oversee the progress in this direction and develop some mechanisms to hasten the development of infra-structual facilities at various libraries. Development of hardware facilities will be helpful to send the requisite bibliographic data to INFLIBNET in a systematic way and on a regular basis.

INFLIBNET should have the criteria to organize training programmes for those Universities which have already installed the computer systems or are likely to do so in the immediate future. Otherwise if a person trained has no computer system to work, the training provided will be rendered useless in due course of time. INFLIBNET should also organize at least three days intensive training programme in information technology for the library managers particularly on the issues relevant to them so that they may have adequate informational level regarding the computers and telecommunication technologies.

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