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AUTOMATION OF LIBRARIES IN NIGERIA: THE PRELIMINARIES, IMPLICATIONS AND CONSTRAINTS

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ABSTRACT

This work is about automation of libraries in Nigeria. The paper delved into the history of library automation and outlines the preliminaries necessary before any automation initiatives are taken. The implications of such initiatives on the library/institution, staff and users are highlighted. Furthermore, the paper identified various constraints to the automation initiatives in Nigeria libraries today. However, the paper concluded and made recommendations on how Nigeria libraries can enhance their automation efforts.

INTRODUCTION - THE ORIGIN OF LIBRARY AUTOMATION

The computer is at present the best gift technology has presented to the library for the mechanization and the overall improvement of library operations and services. Its capability is enormous.

There were isolated computerization initiatives in some libraries in the USA in the first half of the 20th century. Raliph Parker, the first librarian to engage in computerization activity, introduced an Hollerinth punched card system of circulation control at the University of Texas in 1936. The Library of Congress was the next to apply the same system in 1950, during this period, librarians were generally lukewarm and only mildly interested in computerization of library operations and services (Kurzweil, 1990).

However, since the 1960s, there has been a steady increase in the awareness that computers can be used to enhance the overall library effectiveness. In the 1970s librarians began to explore the use of machines like the IBM 1401 for batch processing of some functions (Salton, 1975). Late in that decade, "minicomputers" were introduced. Because of the multi-tasking capacity of these machines where several programmes could be juggled at the same time – multi-user, interactive applications became possible (Levine, 1980).

Several people could use the machine at the same time, apparently having the machine to themselves. The idea of interacting with a computer from a terminal attached to the system (by hardwiring or telephone modem) became more common.

Minicomputer system and related software made it attractive for vendors to begin developing and marketing software for library use. While still fairly expensive, these machines and their related software were much cheaper than earlier mainframe computers and opened up the idea of automation to an increasing number of libraries (Zuboff, 1993).

During the 1980s, however, automation of library processes changed rapidly. As the costs of computer hardware and its peripherals came down, it became financially feasible for smaller libraries to think about automating library processes. An increasing number of desktop computer system appeared. Many operating systems emerged for these machines; but there was almost no standardization and very little library applications/software were written. Desktop microcomputers continued to expand their processing and storage capacity, making these systems useful to the developers of library functions software (Wright, 1991).

Utility programs (word processing, spread sheets, database, etc.) were adapted to library processes and larger computer memories and disk drive capacities made their use possible in even the largest libraries (Zuboff, 1993).

Following the lead of other groups in business and industry, many public and academic institutions moved to create local area network. Some of these networks joined the machine in one facility; while others across a campus or a county. As at 1975, five commercially vended applications for libraries existed; but by 2004, there were several hundreds of commercial library function systems (Ramana, 2004). In addition, a variety of display, storage and communication devices have emerged and begun to integrate around the desktop platform, CD-ROMS, Videodiscs, graphic display interfaces, integration of texts, graphic and sound (multi-media), scanning devices, non-keyboard input devices (touch screen, the mouse, etc), pen and pad systems and FAX interfaces have all appeared on the desktop (Verma, 2004).

These developments, mean that smaller libraries can now automate their library functions. But then, how do we go about it?

LIBRARY AUTOMATION: THE PRELIMINARIES

The need for planning for automation cannot be over-emphasized, hence, the following are the steps to be taken prior to any automation exercise.

i. **Awareness of Need:** The first step in automation is not purchasing equipments and software and then deciding on what to do with "these things". The first step is a recognition of the need to change current procedures so that your library can operate more effectively and efficiently. The tendency to continue library processes in their traditional ways is very, very strong. Libraries, large and small, have operated on traditions that have been remarkably difficult to change. Expert consultants' proposed solutions to library problems have often being frustrated by a tenacious hold on "doing what we have always done in the way we have always done it".

   Hence, there must be an agreement among Librarians in a particular library, Library Funding and Governing Boards and Library Users, that, there is a problem before any meaningful automation activity can be carried out.

ii. **Need Assessment:** This is a process of identifying needs, relating those needs to the goals and objectives of the library and that of the larger institution of which the library is a part. This is not a one-person's task. Any successful need assessment involves the library staff, the governing board, representative of the larger institution and the users of the library, coming together to form a Library Automation Committee. The more staff and users are involved in the process, the better the result. Also the existing system should be analyzed and its faults and/or deficiencies highlighted. This may involve data gathering and an empirical study or survey. This process is very necessary because most libraries cannot afford to automate all of the library functions at once; hence, the most important thing is to think of library automation by priorities.

iii. **Finding Appropriate Computer Related Technology that can Solve the Problem(s) Identified:** This can be done through information resources (e.g., journals, newsletters, reviews articles, reports, etc), site visits (visits to similar library using the specific technology), conferences, seminars, exhibitions, meetings etc.

iv. **System Design:** After appropriate technology might have been found, there is need to sketch the design of the new system,

its processing methodology and control. It involves studying the alternatives, output, input, files, processing controls, back-ups, etc. Also, there may be need to design application programs and specifications.

v.   **Selecting a Vendor** and finding additional information about the new system.

vi.   **Site and organizational Preparation** for automation

vii. **Implementing and Testing** of the new system i.e. pilot operation

viii. **Change Over Methodology:** Conversion, auditing/editing etc.

In summary, automation of library functions must be seen as an on-going process. Planning identifies the goals of automation effort in a particular library situation and also identifies those automation objectives to be reached. It all begins with discovering what ought to be done.

Having seen the preliminaries to library automation, what then are the implications of an automated library on the library/institution, the library staff and the library users?

LIBRARY AUTOMATION: THE IMPLICATIONS

Installing a computer - assisted services has several implications, among which are:

a)   **System Control:** Extra effort will be required in protecting the system against deliberate and unintentional security violations. Unauthorized or unguided amateur users should be checked. This will reduce the possibility of introducing irregularities and errors in the flow of operations.

b)   **System Evaluation:** We ought to know whether the system is working and how well it is meeting the original goals, specifications, budgets, schedules and so on.

c)   **System Maintenance:** This is an on-going activity which lasts as long as the system itself last. It involves monitoring and applying necessary adjustment in the system to ensure the production of expected result. Revision and addition are also made to the system to enhance performance e.g., software upgrades, replacement of equipments etc. Also, the service of a System Analyst and/or System Engineer may also be necessary at times for trouble shooting and repairs.

d)   **Staff Development:** To utilize the system, keep it running and do required updates, demands new high level skills. The librarian in such an automated library must either acquire these skills or hire consultants to support the operation of the system. Additional staff may be needed for preparing the collection and the database. In fact, librarians have discovered that there are no significant staff reductions in automated systems and that there is significant increase in the amount of the continuing staff training required. Also, any new staff hired will require more training than was previously necessary. Anytime there are significant systems changes retraining must occur. Staff requirements tend to move towards more highly trained, more expensive staff members. Whether these staff members are selected from current staff and retrained or are recruited from outside the library, the fact still remains that they will be more expensive. Also, problems in staff reassignment and staff reactions to automation are common in this regard (Winstead, 1994)

e)   **User's Instruction:** Patrons need training, hence the demand for bibliographic instruction increases; patrons, we should remember, have adverse reactions to the systems and want system which are easily understood.

    Because the process involves a variety of screen displays and keyboard commands, the library user cannot be given instruction on one database which will apply to all other databases. Each product demands its own instructional process. In addition, the user needs to learn how to operate the equipments.

f)   **Technologically Produced Changes in the Library Workplace:** As more and more library work becomes computer mediated, the relationship of the individual library worker and his tasks change. Face to face encounters with other library workers and users tend to decline. Information requests and responses may be delivered by terminal screen via e-mails, fax, etc. The computer terminal may then become the major focus of the library workers' life. Though, automation of libraries, it has been said leads to greater efficiency, yet there are many hindrances to a successful automation exercise among which are listed below:

CONSTRIANTS TO LIBRARY AUTOMATION IN NIGERIA

Library staff and users of online catalogue and/or database services face a number of obstacles to effective service and searching. These include:

i)   **SYSTEM OPERATIONAL PROBLEMS**

a)   Understanding log-on procedures which often require attaching to a local computer system (server), identifying the proper database/vendor name, having a user name and a password.

b)   Understanding Boolean logic and keyword searching

c)   Comprehending the search command language of the particular software.

d)   Knowing the special indexes available for a particular database.

e)   Having a conceptual framework to test the validity or usefulness of found information

f)   Being faced with greatly modified bibliographical displays, journal citations in weird formats, or coded instructions at the bottom of the screen, etc.

      There are usually the complain that what can be easily done with the older manual tool cannot be easily achieved by the online system

ii)   **COST:** The hardware – software combination necessary in automating library services can be very expensive. Libraries have always faced budget crises. Any change in the traditional ways of housing, organizing, and communicating information has vast budget implications for libraries. Hence, libraries have nowadays been faced with a dilemma of providing either free or fee-based computer assisted library services in the area of online search, offline search (databases /information stored in CD-ROMS); document delivery (by e-mail or fax), etc.

iii) **THE PACE OF CHANGE IN TECHNOLOGY:** This pace has been so fast that before libraries can gain mastery over the use of a particular technology, a newer and better technology either in software or hardware has emerged in the library – technology market. Librarians have been trying to use technologies which keep changing at just about the time people start to use them effectively. Then comes the question – "what do we do with the present equipments?"

iv) **ELECTRONIC DIGITIZED INFORMATION SYSTEM AND CENSORSHIP:** Computer related technologies which provide access to information can also provide the means of denying access to information or changing the very meaning of information retrieval. Librarians will need to continue their struggle against all forms of censorship including electronic censorship.

v) **PROBLEMS OF STANDARDIZATION:** Since there is an opportunity for locally produced databases. With time, we may end up having many databanks that are not built up to standards (e.g. MARC, AACR2, etc.) because of their local nature and applications.

vi) **LACK OF EFFICIENT LOCAL SOFTWARE VENDORS AND/OR COMPUTER CONTRACTING AGENCIES:** Presently, most of the vendors/agents are foreign-based, which always make contacts in the time of need and emergency difficult and expensive.

vii) **ERRATIC ELECTRIC POWER SUPPLY** coupled with surges and spikes. These are responsible for the sudden breakdown of many electronic equipments (in most automating/ automated libraries, today) and the loss of precious data/ information.

CONCLUSION AND RECOMMENDATIONS

1. CONCLUSION

This work started by delving into the history of library automation and proceeded to outline the preliminaries to automation and the implications of library automation to the library/institution, staff and users. Also, the various constraints to library automation were identified.

In conclusion, as libraries approach the next generation of automated library functioning, the staff will need to develop an integrated approach to providing information services, rather than an increasingly fragmented approach. Future development of these services depends on being able to integrate various databases of information. With the ongoing automated systems of libraries, users should be able to expect that while using the online catalogue, they will have access to the major databases to which the library subscribes.

As more online full text and full text/graphic copies of journals become available, users will expect to have access to these articles from the same personal computer or library workstation they are using to search indexes (e.g., the catalogue).

Finally, library management should not forget that while technologies can be used to make workers and library users feel isolated and deskilled. They are also used to give workers and users a greater sense of mastery and power!

2. RECOMMENDATIONS

The researcher wishes to make the following recommendations:

i) **Library Education Curriculum Change:** Not every librarian wants to be a teacher, but the emerging need for online bibliographic instructions provides an exciting opportunity for many librarians and should change some of the things that are being taught in library classes in our library schools.

ii) **Change in Library Architecture/Facilities:** These will need to be planned and constructed to allow an exponential growth in electronic communication based on more and more powerful computer related technologies. Much of the money now spent on public area facilities will need to be redirected towards making the library work in a number of remote sites. We are probably going to have to stop building monuments as if they were information facilities.

iii) **Library Information Access Change:** Since many people will never "come" to the library; the ways library information is accessed will have to change. We will need to have index and catalogue system that are easy to understand, that make allowance for spelling errors, and that offer quick and understandable help.

iv) **Librarians' Role Change:** The librarians should be able to offer on-site and remote instructions in using the library systems. In addition to such formal instructions, users should be consulted with, via telephone, e-mails, etc, and librarians should be available to talk the people through their bibliographic problems.

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