

THE USE OF COMPUTERS IN GHANA LIBRARIES: JUSTIFICATION AND CONSTRAINTS

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ABSTRACT

Electronic computers which were first used in the 1940's in a few research laboratories, have now become commonplace tools in data processing for government, business and industry, in scheduling and control of manufacturing operations, in medical analyses; in transportation and communication systems and in scientific activities. Perhaps no other single development has had such an impact on human endeavours in such a brief period of time. Most problems in library and information science are being solved by computers and it is therefore becoming internationally accepted by librarians that the future lies in automation. This paper clarifies the questions which librarians in Ghana must answer if they contemplate automation. It indicates the changes and limitations which fill the other pan of the scales and which are frequently only discovered by bitter experience.

INTRODUCTION

Library processes by their nature, lend themselves to mechanisation, and those who work in libraries often perform task which appear more appropriate for machines. As a result there has been a significant development in technology in libraries.

The level of library services has been raised in some libraries in Ghana by the improvement in copying techniques especially the provision of modern canon photocopiers. In 1988 Balme Library, University of Ghana for instance, acquired three photocopiers for use by the university and for its administrative work.

Communication methods are also being improved particularly the use of telex which makes it possible for the dissemination of information and the speeding up of the lending of materials. The early part of 1989 has witnessed the supply of telex machines to the three university libraries in Ghana by the Ministry of Education.

Microforms have been in existence in certain libraries in the country with the view to solving the space problem and eventually to transform library practice. Some libraries cannot cope with the storage of microfilms let alone the maintenance of microforms. How-

ever the present decade has seen an increase in production of microforms in the USA where government departments have been using microfiche to circulate unclassified reports.¹

Another significant development in libraries is data processing or computerisation of library processes also referred to as library automation. Librarians being a part of society keep on believing that technology answers every problem in their profession and often try to cope with technological developments in their fields. Too often, however, computers are introduced into libraries with more than a little element of 'keeping up with the Joneses' and a faith that 'the future lies in automation.'

Library automation is a major undertaking which requires a positive operational justification and the realisation that the whole nature of the library could change for better or for worse depending on how the introduction is undertaken, the objectives in library terms and the expected results of the use of computer. This paper is not meant to encourage librarians to go computer, neither does it discourage those anticipating automation but if seeks to examine the 'pros and cons' of this enviable venture

JUSTIFICATION AND CONSTRAINTS

Librarians must be aware of some of the capabilities of the computer. Computers can search for a particular set of characters in the data they hold. They can count far quicker than the average human, they can compare strings of numbers or letters and put them in ascending or descending order. A computer's input is easier to modify than is a typescript or manuscript lending itself to the insertion of variables into standard letter as well as simplified proof reading. One feature that attracts librarians to computerization is the ability of a computer to put items in order very rapidly doing so in a variety of different sequences. The speed at which a computer functions is uncontested. It never pauses, operations follow right upon operations and a computer is a million times faster than human. Computers have high precision and are very reliable, making one error out of 10 billion operations.² They are never affected by boredom, fatigue or complicated data.

The most obvious reason why a librarian may consider automation often is the existence of a problem area where the service does not match the standards he wishes to attain. However as part of a World Bank programme certain libraries

in the country have ended up with personal computers, (some locked up in offices for lack of personnel) thus compelling them to consider partial automation. There are of course less laudable reasons for automation such as the desire to be fashionable or to achieve the personal or institutional kudos which the installation of computer systems can bring. Also it is not unknown that certain computer firms do lobby to get their equipments purchased by certain institutions who have never thought of automating their libraries. In such cases the librarian is lumbered with the task of automation.

For the first of these reasons, it must be emphatically stressed that a computer is not a magician. One does not change a library with very serious operational problems into a paradise where users receive all books they want in what they regard as a reasonable time just by the touch of a button. An introduction of a computer will not solve the serious shelving problems faced by most academic libraries neither will it turn life long catalogue into extrovert multifunction subject librarians. Some of the failings of a library may be solved, or alleviated by the use of a computer others will simply be automated and produced in milliseconds, rather than hours but normally every saving made by a computer is debited on another side.

Certain librarians may be considering the potential staff savings which a computer may make in their libraries. Any library considering a complete automation must think of rather new computer establishment which will involve employing a Data Processing Manager, Systems Analyst, Programmer, Data Preparation Operator, Computer Operator, Processing and database control clerks. This however depends on the size of the library. The posts of a computer operator, database and control clerks can be filled by trained staff who already work in the library but it will be difficult for a librarian to be trained to be a systems analyst. In a small library situation a systems librarian ie. a librarian with a computer science qualification can be employed or the services of a computer staff of the parent institution can be sought and may not bring additional cost. A combined force of Systems Librarian and Computer Staff could prove workable as practised in Rylands University Library Manchester which has a fulltime Systems Librarian and makes use of the Administrative Computer Unit.³ Some staff savings can be made in certain cases when a computerized cataloguing is introduced. A duplicator-operator will no more be needed, a catalogue card typists can be eliminated. The system will virtually bring a cessation of cata-

logue filing therefore cutting down on staff who are responsible for filing these cards. The professional cataloguers will be much reduced but even here a major saving cannot be made because some professional staff must sort out the problems of the new system. Obviously some opposition to staff changes will come from the very old librarians who by their educational background and long experience with the manual system will not like to change jobs or adapt to new situations.

Cost can be a severe constraint in any computerization. The initial cost of the equipment is only a part of the general costs. The introduction of computers may be impossible in certain libraries which have no space and thus have no room for expansion. An extra housing cost must be envisaged. Some may have to place the machine far away from its operational point or placed in a very large room which does not lend itself to easy cabling and use of air-conditioners. One can hardly imagine the cost of a central air-conditioner. Cabling in such a big area will also prove expensive. Anti-static carpeting is also necessary. The costs of cabling, terminals, air-conditioners and carpets will have to be added to the total capital cost. Maintenance cost must be budgeted for which is a recurring

cost. The extent of automation whether full or partial will be influenced by these limiting factors. In the University of Ghana Library, a personal computer has been in operation for sometime. The library could not afford a central air-conditioner. The Students' Reference Library where the equipment has been installed is too big for the small airconditioners provided by the university. As a result, two standing fans stand right over the Central Processing Unit and the Computer monitor to cool the machines and to drive away dust. Anti-static carpets have been laid in the immediate surroundings of the computer. Though these fans are not so expensive, costs of carpets, and cabling had to be borne by the library. The management is thinking of moving its reserve collection to a smaller room where a small air-conditioner will be effective to use. The management is aware that the two standing fans cannot provide the necessary protection to the machine.

The computer market is a fast changing one and very shortly the specie of computer acquired for the library could become obsolete or may need change because certain new computers on the market are more compatible to library work. Computer equipment itself has a

more limited life than that of more conventional library equipment such as desks, counters and trolleys. Libraries which for budget reasons cannot air-condition their rooms and do not have anti-static carpets must expect periodical machine break downs. Such institutions without a good service or maintenance contract must expect a complete crisis.

Cuts in electricity supply to library premises could pose a serious set back to libraries which are contemplating automation. Apart from their untimeliness, therefore resulting in interruptions of work and services, computer hardware and software are damaged by the continuous abrupt breaks in circuitry functions.

A word of caution to librarians purchasing their own computers concerns the size and scale. There is the tendency for a librarian to buy a mainframe or minicomputer because these have big capacities. A library that stores about 20,000 books can manage with a personal computer to handle issues. One storing about 300,000 or more documents can comfortably use a minicomputer and can keep on adding terminals with increasing work loads. Because computers have limited life span a very big computer may prove a white-
elephant unless space capacity can be used in the foreseeable future, either for further extensions of

the system or for separate functions such as word processing and possibly accounts. The make of a computer is not too important if dealers are local, but capabilities for adaptations are necessary.

CONCLUSION

It is apparent that machines when used properly are more efficient than man, work at a much greater speed, and there is reduced reliance on human judgment. On the debit side there is of course the cost factor which often rules out mechanisation altogether. Some libraries are too small and others are too large to be able to change from manual methods overnight. In libraries which do not have their own machines but depend on those of parent organisations there is frequently the difficulty of access to machines. There is the further difficulty that there is a certain rigidity about machine systems so that once they are introduced at considerable cost the routines cannot easily be changed or modified for exceptions and variations. Another hazard which must be provided for is possible breakdown, and that usually means that provision has to be made for a temporary switch-back to manual methods. Provision must be made for power failures in form of generators.

Finally, large scale automation, particularly when it is first intro-

duced, alters the structure and nature of an organisation and its management. This will inevitably

cause stress and involve re-adjustment on the part of the staff.

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