The impact of Information Technology on the library profession and education

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ABSTRACT

Information profession performs three major tasks : acquisition, organisation and exploitation of information the medium for this has for a long time largely been print. However the introduction of information technology in information institutions brought about new ways and means to information works in order to do their jobs promply and efficiently.

This will affect library profession and education nevertheless radical changes in libraries are subject of debate.

INTRODUCTION

Rapid advancements in computers and telecommunication technology which is known as "Information Technology" have accelerated the shift to a post industrial era caracterised by an information based society. In recent years there has been ample evidence of the rapid changes taking place in the library profession. The circulation of knowledge which once took hours and even days to achieve has now become possible at the touch of a button. This change has its origins in the introduction of a wide range of innovative technologies within the library and information field.

Principal features of Information Technology

Information Technology in itself is not a new concept. It may be traced back to the earliest development in electronics such as the invention of the first calculators which can be said to have launched the era of Information Technology. The use of Information Technology and its application to information work can be traced to the 1950's when computers were first applied to information retrieval (1). It is clear, though, that the rate at which the development of Information Technology has been taking place has accelerated rapidly, especially during the last twenty years or so. This makes it possible for writers in the field to predict the replacement of much of the paper based information systems by electronic ones. For instance, Lancaster in his paperless society (2) considers that such a replacement is not only feasible but also inevitable in the near future as he considers that it is moving to a largely paperless environment. This was later described by Toffler as the third wave (3) where electronic transfer systems and computer processing prevail in every walk of life. The Information Technology elements have been and are still being reduced in size and make more efficient. There has also been unprecedented developments in the techniques for the mass production, processing and circulating of information in a variety of forms as well as sophisticated means for information storing. This has greater implications for libraries and library education.

Impact of Information Technology

Information technology has changed the face of library services by introducing new techniques in the handling of information. Innovative technology is now offering new forms of information storage and retrieval which took place in three phases:

"First, new ways to store information compactly and cheaply, including photographic microforms of various kinds, magnetique storage on tapes and discs, optical storage etc..

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Secondly, new mechanisms to manipulate, scan and search stored records. These include the large scale computer, the mini-computer and the microprocessor. Thirdly, new facilities for the rapid transmission of information over long distances through the use of telecommunication systems and networks" (4). These developments have generated some of the major factors which can be said to have a great impact on libraries and information. These can be itemised as follows:

1 - The trend towards de-institulised information;
2 - the increased trend towards individualised information;
3 - the trend towards greater dependence on computers in libraries and information;
4 - the development of optical and digital technology allowing electronic storage and retrieval of information in a non-print form;
5 - the increased trend towards computer literacy for library students and staff;
6 - the possible merger with computer centers.

Waht changes?

It has been predicted on paper that the so called "paperless society" would witness" the end of libraries" (5). Information technology has certainly brought with it one major concern for libraries, that is that the library is no longer the only agency for storing and disseminating information as the new technology made information more directly available to the users through the user friendly systems which enable the user to communicate directly with the data base he chooses to satisfy his/her information needs. The concept of storing information in a data-bank rather than publishing it in a book and retrieving it on demand is supported by a variety of technological methods now available. This opens up options for new positons in libraries that have never existed before such as for, instance systems analysts, systems design and data base design. Microforms have permanently relieved the worries about out-of-print and lost materials and VDU displays provide the type of information needed by those who do not necessarily require the book. This has a significant impact on the transformation of traditional library tasks and added a new dimension to library services making them varied and more efficient. The library profession is constantly de-emphasizing the old concept of the library as a awarehouse of books and concentrating on its education and information role in

support of the nationaldevelopment process in general. As a result the function and responsability of librarians have been altered, librarians became :

1 - Information consultants having the responsability to direct users to the most appropriate and accurate information;
2 - Educating and training the users to use electronic information sources;
3 - Searching sources unfamiliar to users;
4 - Retrieving, analysing, evaluating and interpreting information for users;
5 - Assisting in the design of users' interests profiles and needs for the provision of current awareness services;
6 - Assisting and teaching users to be information literate; i.e. the ability to access and evaluate information for a given need without the help of an intermediary;
7 - Managing information;
8 - Designing systems.

If librarians want to hold positions of authority in these areas in the future, they must be well prepared to take the responsibility of getting fully involved in these activities. If they want to remain in the forefront of the information profession they must take greater responsibility towards the education of the users and the information they provide to them.

There is a foregoing conclusion that this era of rapid social and technological changes in the handling and communicating information would lead to increased demand of the acquisition of new skills ans techniques by library staff. These skills and techniques originate in curriculum development in library schools.

Impact of Information Technology on education programmes

The use of sophisticated means in handling information work led to professional developments, these in turn created a compelling effect on library education programmes. As these developments continue the importance of curriculum development in library schools increases significantly in order to produce the manpower required by the resulting job market. In the process library schools are searching for ways to implement and benefit from Information Technology so as to strengthen their position in the technological environment

surrounding them and to benefit the profession for which they cater by feeding it with the right calibre.

At present educators and professionals are reflecting on the new information developments and attempting to extract the kind of new knowledge for inclusion in education programmes. In general, they are trying to inject a new life in library schools by introducing Information Technology in their curricula in order to increase the technological opportunities for the library graduates. Since library and information profession is still in expansion which includes the old market place and expanding of the new one, library schools have to assume the responsibility for the production of qualified staff at every level in response to this new development. In 1983 Dudley (6) reported that fundamental changes were taking place in library schools. He even hinted that information technology is becoming more and more part of the core studies. Yet other writers such as Ghunam (7) remarks that changes in curricula have been very slow. For instance, curriculum development in British library schools came under close scrutiny in the early 1980's. A detailed study by Burre (8) revealed major deficiencies in education programmes especially their inflexibility and lack of relevance to progessional life. The author insists that "curriculum should not be confined, metaphorically or in reality, to the four walls of a library but should explore many aspects of the practical and intellectual life of the community, its institutions and records with academic vigour". This statment is no less than a rejection of the technical aspect with which library education has identified for so long and a stress on more academic subjects to show the development of librarianship from an apprenticeship to a graduate profession. Whatever the conclusion drawn from the debate, certainly if recent developments in the field of library and information are anything to go by, then curriculum development in library schools seem to have been influenced by internal as well as external factors. Wilson's (9) categorisation shows the following:"

1 - Pre-conditional factors; those factors that create the need for curriculum development (the creation of new educational institutions);
2 - External or environmental factors, such as the needs of the market, the quality and backgrounds of potential students, general professional opinion, research trends and overall time constraints;

3 - Intra-organizational or internal factors, such as available teaching skills, internal competition for time and associated power struggles, general knowledge of the field and trends within it, and research".

The implications for library schools should be seen in the design and development of a curriculum that interacts properly with these factors which should be reflected in its content. Furthermore, the dynamic nature of these factors dictates that regular assessment of the curriculum in the light of the changing circumstances has to take place to ensure its relevance to the profession. The consequence of this is to identify the new skills, knowledge and attitudes required of professionals who will be expected to practice in the predicted post-industrial environment characterised by the heavy use of and dependence upon information in every walk of life. Once identified these skills, knowledge and attitudes have to be translated into educational objectives and thereafter into subjects to form part of the changes in the library school curriculum. In an extended study Griffiths and King (10) identified the type of new skills, knowledge and attitudes required of future graduates and provided a framework for their implementation at the required level. In general, library educators show increasing willingness to introduce more Information Technology related courses into their curricula, but in practice theoritical discussions exceeded by far actual applications understandbly for lack of funds and faculty expertise. Moreover Information Technology seems to be failing to make any real impact on library education programmes partly because "computer experts, system designers... mass communications have never been part of library schools curriculum" (11). In the same vein, the introduction of Information Technology in the curriculum cannot be achieved without the availability of qualified teachers and the technological equipment for hands-on experience and practical exercices. Undoubtdly this raises some economic concerns on the part of library educators. There are various problems facing library schools which seem to make it inevitable that there will be difficulties in integrating Information Technology fully, these may be summarised as follows:

1 - Library schools have few resources to introduce Information Technology and keep up with new developments in the field;
2 - They lack faculty expertise in order to institute full courses in information technology accompagnied by practical field programmes;

3 – Some post-graduate courses, such as masters degrees, are too short and their curricula are already over crowded that there is virtually no scope to put accross the basics of Information Technology.

To understand the complexities of Information Technology and its application to information work it requires more time, expertise and equipment. With the economic constraints, however, library schools will certainly find it hard, almost impossible, to invest more time and money in the training programmes in operation. On the other hand, library schools are warned that over-emphazizing Information Technology in their curricula might have detrimental effect, it may discourage potential students and narrow opportunities for those who may be interested in library and information studies but fear the computers and telecommunication technology which appears to become common place in library schools'vovabulary. No doubt, the rate of technological development has transformed the face of library and information profession altering almost complelty the way in which information work is undertaken. This has led to the conclusion that, in the near future, traditional library tasks will be virtually dead. This assertion may be true, but the acquisition, processing and disseminating of information will always be taking place whatever the type of information institution and media. Essentially the same tasks will be required but the skills to carry them out may need to be amended and/or improved to suit new environmental circumstances in which these tasks are to be carried out. For instance, it is likely that in depth subject knowledge particularly in technical handling of information will become important as future professionals will need a strong subject background especially in science and technology to be able to understand the users' needs and direct them to appropriate source. Meanwhile, other positions in libraries and information might be better served by extensive knowledge in information theory, telecommunication technology, retrieval techniques and communication skills. Nevertheless, whatever the changes in library and information work and education for it, it is unlikely that traditional library systems will be extinct in the near future most likely because the structure and content of library education programmes have not changed as Needham (12) bluntly put it when he said: "despite terminological shifts the structure [of the curriculum] is still tripartite, the boundaries substantially the same. In crude terms the message is what it always was; that indexing, bibliography and management are at the heart of librarianship". While it may be argued that technological developments have resulted in emphasis in the classroom on new media and non-print information to the detriment of books and similar printed materials. These will still be desirable and required as items of personal ownership to purchase and conserve if nothing else. So the book will certainly be around for many years to come and the "end of libraries" (13) as well as the "paper less society" (14) and the "third wave" [15] are still seen by many writers as exaggerated prophecies. However, the possibilities offered by new technology for strengthening the position of libraries and information in these predicted spheres should not be overlooked. Libraries and library schools are expected to make extensive use of Information Technology so that they might integrate fully into the electronic age. This in turn requires a great deal of hard work on the part of library educators and professionals if they are to hold a position in the information world.

Conclusion

Information Technology is accepted as a factor in the development in library practice. Il provides for the growth of the information market. Computers make information work efficient and timely, they also make the access to information more direct. In education programmes, Information Technology as a fully integral component of the core studies still raises some concerns in library schools where traditional courses are still required. Nonetheless, if they are to bridge the gap between the practice and the education of librarianship in order to integrate fully into the technological environment, library schools have to pool more resources for the training and hiring of teachers and the purchase of equipment.

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