

NEW TECHNOLOGIES AND INFORMATION HANDLING IN EAST AFRICA

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ABSTRACT: This paper discusses the role played by new technologies in information handling in East Africa. It raises issues regarding collection, processing and dissemination of information using the available new technologies. Lastly the paper suggests ways to be used to improve use of the emerging technologies for the sustainable information handling in the region.

INTRODUCTION

Communication generally plays a central role in development whether economic, cultural or social. The global nature of communication has changed with evolving technological practices, making it possible to commingle bits from text, sound, pictures and moving images in "Multimedia". The last few years have witnessed tremendous changes in the way telecommunication industries initiate plans aimed at creating the infrastructure of information and communication technologies to ensure active participation of Africa in the global information society. This is a necessary and an inevitable process of a shift from a commodity/service economy to an information economy where the innate concern is more on management of the complex nature of knowledge surplus (relatively easier to manage) than the tangible wealth surplus. IT has turned the entire world into a "global village" where time and distance are obsolete concepts. IT speeds up transfer of information. Although technological transfer is a phenomenon that goes hand in hand with history, the impact has not been as diversely felt in the past as it has recently. Technological creation is a game for developed countries while developing countries remain importers of technology from the Western world.

NEW TECHNOLOGIES AND COMMUNICATION

New technologies in communication manifest themselves in such forms as electronic or print media, which include computers, satellites and integrated circuits. The information industry is becoming a multimillion-dollar industry with various players like publishers, online information services, software developers and other business that package and sell

information for a profit. It is assumed that information technology brings with it a new economic order and that it is a precursor for industrial development.. In fact several authors have argued that information technology is a means of bypassing traditional phases of development in developing countries. However, the developing world is faced with one major problem of placing telephones and computers in rural areas to facilitate communication to all sectors of the community. Therefore they may not be able to take advantage of these opportunities.

With regard to library resources in Africa, information technologies and especially digital technologies now present new opportunities and challenges. IT enables collaborations within the African continent and globally and may change some traditional functions of libraries. Therefore with the advent of new technologies, libraries must be at the forefront in educating users to access relevant information and avoid the problem of the information explosion, some of which may not be relevant. IT fosters partnerships with researchers and academicians in the production of learning resources and other digital content in addition to information storage and dissemination.

IT with its new opportunities and challenges is turning libraries into centers for advice, support and training. This therefore calls for the equipping of librarians with skills to enable them to assist in the production and use of electronic materials as participants in knowledge creation

IMPACT OF NEW TECHNOLOGY AND DOCUMENT ACCESS

The main impacts of recent developments in information technology include the following:

- Increased need to teach information users how to select information materials and tools using latest technologies
- Need for planning and the management of information resources
- Increased computer power leading to speedier and cheaper information processing
- Cheaper data storage, e.g. optical media
- Digitization of information in text, graphics, photographs speech, sound and video provide flexible, cost effective system for multi-media communication and allow integrated use of a variety of information services
- Better data transfer between different media
- Improved telecommunications for data transmission
- Reduced size of equipment

- Increased reliability of hardware and software
- Electronic input to online journals has reduced the amount of text and reductions in cost for journal production and other reference works
- Tremendous improvement in interlibrary loans requests using e-mail services
- Library automation is providing faster access to stored documents locally and some externally.
- Automated union catalogues have reduced the time spent on location of documents not held locally.
- Interfaces or gateways also continue to reduce the time spent on transfer between different catalogues and systems.
- Electronic mail systems have increased speed in ordering process for library information materials.
- Reduction in transmission time for document requests between cooperating information managers and/or users using scanning technology based on Optical Character Recognition (OCR) e.g. ARIEL software
- Reduced storage size requirement with the advent of Optical media e.g. CDROM.
- Increased use of personal computers vis-a-vis computer literacy throughout the world.

These developments have considerably increased access to databases containing references and full-text documents available online or in the form of optically stored products for both information managers and end-users. Therefore, micro-electronics and Information and Communication technologies continue to facilitate development of libraries without walls the so-called "digital libraries". The Internet and the World Wide Web are the most significant with a global connectivity and an international pool of opportunities available. Information on the Internet has been used to save lives. There is an increase in access to information sources, with no distance or boundaries.

It has been alleged that computer use is rendering the book obsolete due to the fact that information can be coded and retrieved much faster, but the attached price factor means that not every Kenyan or Tanzanian can afford a computer. Haywood (1995) noted that the opportunities to access information have never been and are unlikely to be distributed evenly among the members of any community, rich or poor, large or small. What is more important is that, despite the convergence of a whole range of new information

technologies, access to information that can really empower and liberate people still looks set to be the preserve of an affluent minority.

KENYAN SITUATION

In Kenya, as in most African countries, not all libraries are fully automated. In the academic field, the United States International University - Africa (USIU - A) library is the only one that is fully automated at the moment. Moi University library and the Kenya Polytechnic library are partially computerized while the University of Nairobi library is in the final lap of decision making on automation. Some libraries belonging to foreign missions in Kenya are also computerized to some extent. Most special/research libraries have / or are in the process of computerization. Other libraries and information centers still have their catalogues on catalogue cards or lists with positive move to automation in the very near future. The first steps towards automation are for the libraries/information centers to develop capacity to convert past records and integrate them within general computerization of the library.

The African Virtual Library Initiative (AVL-D) was established to assist in electronic connectivity of libraries nationwide. Several meetings have taken place and through resolutions of stakeholders AVL-I is mandated to facilitate online access of information resources irrespective of their location. AVL- 1 recently organized CDS/ISIS courses for information workers in Kenya. It continues to organize training in the application of IT in information management in order to speed up the process and to improve the IT readiness of libraries and information systems and services in Kenya as well as East African Region. E-mail services have become a common mode of communication within the Kenyan community and international community thus enabling the "global village" concept. All stakeholders in AVL-I are encouraged to communicate by e-mail.

In Kenya, the African Virtual University (AVU) was established in 1997 at Kenyatta University. AVU is a form of distance learning that involves delivery of education materials through a combination of satellite and Internet technologies throughout Africa. IT's objective is to expand access to higher education and improve the quality of learning by tapping global academic resources. It aims at improving quality of training by making available learning resources to African Universities through the digital library and producing skilled labour force. AVU students, lecturers and researchers have access to e-mail and Internet facilities which are essential for research and information sharing.

Kenya Library Association (KLA) has been on the forefront to train older practicing information professionals who had no knowledge or little skills in New Technologies, since 1986. KLA assists them through the organization of seminars, conferences at which several papers are presented on New Technologies. KLA also sees to it that all courses offered in Kenya in the fields of Archives, Documentation, Information Technology and Librarianship are harmonized. Graduates of all the courses come out with knowledge and skills in information handling using New Technologies.

EXPERIENCE AT THE NATIONAL MUSEUMS OF KENYA

Information technology has played a crucial role at the National Museums of Kenya (NMK) since early 1980's. Information technology continues to help museum staff to manage and analyze all kinds of data from visitors' lists to DNA analysis. IT at NMK has helped museum and other researchers share data and prepare reports. The editors of technical publications from NMK are able to design and lay out publications. Latest developments are for object databases for ease of access to the collections and data tracking. New technologies have changed the way the museum communicates to visitors e.g. through the Internet the visitors and the general public can visit NMK web site at www.museums.or.ke for an overview of the museum before physically coming to visit. Electronic mails can be sent to nmk@museums.or.ke. The museum has also made links with other relevant web sites. This has helped the museum to market and increase access to collections and research databases, program listings and general museum information. The web site allows the museum to share its collections, data and expertise with national and international audience. The use of e-mail services has improved document request services between our library and other research institution libraries like ILRI, ICIPE UNEP and RECOSCIX. The library, including branch libraries, is in the process of computerizing its collections using CDS/ISIS with over 8,000 records already input at the main library. The main library can be reached at library@museums.or.ke.

TANZANIAN SITUATION

The use of information technology in Tanzania started in the mid 1980's and moved slowly into the 1990's, achieving different levels of computerization. In mid 1990's most documentation and information centers were already using computers for bibliographic and or library database management.

THE EXPERIENCE OF THE UNIVERSITY OF DAR ES SALAAM MAIN LIBRARY

In the past years the University of Dar es Salaam library routine functions were, on the main, manually managed until very recently. The University of Dar es Salaam started using computers for data entry and information retrieval using ADLIB, software purchased from the Netherlands. For uniformity the program is used by most of the departmental libraries except the Institute of Marine Sciences (IMS). The introduction of an OPAC was preceded by CD-ROM services which was a project funded by Carnegie Corporation of New York and enhanced by the American Association for the Advancement of Science (AAAS). The library has more than ten standalone CD-ROM workstations. The University of Dar es Salaam Main Library has a home page and is also fully connected to the Internet so that users have access to electronic information.

EXPERIENCE OF THE INSTITUTE OF MARINE SCIENCES

The Institute of Marine Sciences library started using computers for data entry and information access in the early nineties, a few years after the establishment of RECOSCIXWIO. Since then there have been major development in the handling of information especially gray literature and use of computers as a tool for information retrieval. Most of the reports are listed in the computer using CDS/ISIS and the library users have access to an OPAC which is in the network users can search for the information from their offices. With the improvement of Internet services at IMS the members of staff, students and visiting researchers have been able to access different databases and electronic information.

Being an affiliate of the University of Dar es Salaam, the IMS has to follow the University Information Policy Plan libraries falling under Library Information System (LIBIS) which states that all university departmental libraries should be hooked to the main server and hence use one program in handling information. The proposed system will ensure standardization and compatibility of information handling at the university. The long-term vision of the university's information system architecture is intended to prevent the university from event-driven actions, isolated systems and redundant computing and data resources throughout the university.

CONCLUSIONS

In Kenya and Tanzania information personnel are not only computer literate, but can efficiently operate new technologies in information handling. New technologies have increased cooperation between national and international libraries and information centers including publishers. Information has become more readily available. It is difficult to establish whether or not all end users in urban and rural areas in East Africa are getting the right information at the right time (i.e. immediately) and for the right price (cheap, affordable or free) with the increased development in new technology.

The revolution in information technology has changed the landscape of how most governments in developed countries create, manage and protect information. It is not clear whether law has taken into account the advancements that have been made in IT. The legislation ought to address the issue of Information Technology and should be in conformity with the trends of the times moving away from the traditional legislation. As more and more records are created and distributed electronically, it will be essential to focus additional attention on how to prevent information from being manipulated or modified in a manner that would alter its basic content or render it unavailable — problems that are much likely to arise in a “paper-based” world.

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