

CHALLENGES OF AN INTERACTIVE ENVIRONMENT IN THE CONTEXT OF DEVELOPING COUNTRIES IN SUB-SAHARAN AFRICA

By
Ms Kay Raseroka

University Librarian
University of Botswana
Botswana

The paper discusses the state of the interactive environment in developing country contexts and relates this to the library and information service professionals' ethos on freedom of information. It highlights the role of LIS professionals in adaptive integration of the concept of 'leap-frogging' in support of the struggle for equal access to information for citizens. Drawing from literature of developed countries, the paper then focuses on ethical issues to which LIS professionals in developing countries need to be sensitized. It encompasses freedom of information, copyright and privacy of information. It concludes by recognizing the need for the reinforcement of education on ethical issues for LIS professionals in developing countries and the role of library associations in sensitization efforts.

Introduction

The global information infrastructure (GII) implies national, regional and international connectivity with the competent use of information technology as its base. The state of development of the information infrastructure in individual countries, however, determines the degree of participation in information exchange.

The majority of countries in Sub Saharan Africa are classified under the least industrialised countries, have the lowest per capita income, yet have aspirations of active participation in the evolving global information developments. These are seen as a vehicle for the improvement of the quality of life for citizens, through information access and utility for competitive advantage availed by an interactive environment. Indeed the GII is envisioned as facilitating "health care delivery through telemedicine..... (transform action) of education with computer based multimedia (creation) of more efficient factories ... enhance democratic principles" (GII: Agenda for cooperation 1995)

An interactive environment is dependent on the availability of operational infrastructures which include information technology, steady electrical output; reliable, affordable telecommunications and acceptability of the principle of information exchange, at various levels, for mutual benefit. Their effectiveness depends on:

- political will and leadership's vision which charts direction and makes philosophical and financial commitments.
- skilled human resources who possess in-depth know-how which facilitates innovative exploitation and harness to technology for socio-economic development of citizens.

Based on the declaration of the African Ministers for Economic and Social Development Planning (Addis Ababa 1995) it will be assumed, for the purposes of this paper, that the leadership vision for Sub Saharan Africa is assured. The paper will therefore focus on challenges of an interactive environment as circumscribed by human resource development and infrastructural concerns.

State of infrastructure in Sub-Saharan Africa.

A number of writers (Agada and, Jegede (1995), Djamien et,al (1995) Mureithi (1996) Mundy (1996) have discussed the state of the global information infrastructure in developing countries especially Sub-Saharan Africa. Indications are that the majority of countries have a poorly developed electronic environment and lack financial means of achieving inter connectivity on their own. Although these countries possess computers, they were obtained through funding from donor agencies as part of projects. Inherent in this acquisition mode is the limited use to which computers are put by users whose priority and skill base is geared to production of data required for specific project assignments. Hence the technology is used predominantly for basic activities of word processing and local data analysis although communication through electronic mail has been accessible to most Sub-Saharan countries, however, not interactively (AAAS 1993). Donor finance facilitates selective availability of technological infrastructure and provides a jump start. Given financial constraints and that development of viable support systems is dependent on high quality information technology, long term sustainability is questionable. Further, donor dependency is perpetuated rather than technology facilitating creative partnerships, as envisaged through the GII agenda. (Mundy 1996).

The weakness of Sub Saharan currencies in relation to foreign currencies, such as the US\$ with which technology is purchased, are such that even though the cost of computers is going down in the industrialised world, the reality for the developing world is that costs are rising thus necessitating national sacrifice and donor finance. Without the latter, choices, demand that priorities be investment on health, food security and education, unless the diversion of limited resources are justified by sustainable medium to long term benefits which accrue to nations as a whole. The pressure to adopt information technologies in the past, has tended to idealise benefits and underestimate real costs financially, for acculturation and training levels required for effective adoption and adaptation.

The telecommunication infrastructure in Sub-Saharan Africa, excluding South Africa, is poorly developed, although the number of countries which have connected to the internet has increased from fourteen countries in 1995 of whom thirteen were funded by donor agencies (Jegade 1996) to almost all of Africa, except two, in 1996. Telephone access in this region ranges from 0.08 in Chad to 3.1 in Botswana with the major access points located in urban areas mostly in capital cities (Mureithi 1996). The impact of such distribution is negligible access to interactive environments and the widening of information gap among citizens. If, however, the GII promise is to be realized, rural communities, who form the majority, should not only have access to information on the Internet, be able to read and use it for their own needs, but should also contribute their own indigenous information for the benefit of their communities. This is possible only if there are professional intermediaries who are not only sensitive to rural community needs, but are also proficient linguistically and technologically. Financial implications harp back to choices which need to be made by an informed technocracy and political will. The reality, however, is that Sub Saharan Africa has yet to resolve current ethical issues such as: Do information professionals provide for the literate in their quest for education at the expense of the non-literate rural communities? What justifies choices made? Does experience over the three decades of Sub Saharan African independence vindicate these choices in terms of hoped for multiplier effects? These moral questions are still valid for the interactive environment and connectivity, but factors which have to be considered are so infinitely more complex that consequences of choices made are difficult to predict.

Ideally technology should be used to redress this imbalance and put indigenous information in the main stream and make it accessible in local language. It should form a base on which contributions to development can be integrated with endogenous knowledge to facilitate adoption of new approaches and possibly lead to innovative, interactive use of information for economic and social upliftment of citizens at different

class levels.

The availability of the technological infrastructure does not necessarily translate to its exploitation, since, it requires knowledgeable human intervention. Assuming that technological expertise is available, the greatest challenge is in the creation and exploitation of the content transmitted through the internet. At this point in time, the majority of the library and information personnel in developing countries are either being introduced to or exploring through the literature, the potential and what the internet is already being used for in the developed world. The exception is South Africa, where innovative technological harnesses are being developed through information professional mediators who link communities through the Internet (Legoabe 1996) or provide access to local government information services through touch screen kiosks for the non-reading public (Mackie, 1996).

The above illustrates the complex issues which ultimately have to be weighed and evaluated as a base for choices and impact on ethical issues at the practical information professional levels either as producers, users or intermediaries.

Ethical principles

Based on Kantian axioms, Hauptmann (1987) cites the following as principles which underlie ethics:

- goodwill
- duty
- the requirement to act so that action can be universalised without harmful results
- that action should always be considered against the dignity and human worth of each individual thus no human being should be as a means to an end.

Professional obligations arise out of the principle of duty to serve customers to the best of one's ability as determined by established professional standards based on knowledge, honesty, competence and responsibility. Ethics become an issue when professional obligations are in conflict with one another or with social obligations. Woodward (1989) in discussing this issue gives the example of a "person's right to information and another person's right to privacy" in which case both are valid rights but will be in conflict when juxtaposed. It is suggested that the only way to resolve such conflict of rights is to analyze consequences.

Code of ethics for LIS professionals

Most Sub-Saharan African LIS professionals, do not explicitly state codes of ethics.

(SCECSAL 1994). There is a vague acceptance that by virtue of professional education, which is largely derived from Western models, there are responsibilities which adhere to professional duty such as :

- accuracy and currency of information produced and provided to customers
- provision of service to all who indicate need
- competence, honesty and maintenance of client confidentiality
- assistance to clients in understanding information organisation for independent use
- maintenance and continued development of LIS professionals
- knowledge base and skills at peak performance levels

The Sub-Saharan African environment facilitates observance of these principles to a limited extent because of the low rating given to information services in general as manifested by:

- the scarcity of formally adopted national information policies
- inadequate support for libraries materially and morally of their role in information access
- LIS professionals' vagueness about codes of ethics which govern practice

Whilst this experience may relate to a predominantly print based milieu, there are no grounds to expect a changed attitude unless ethical issues are drawn into curricula and are consciously included as part of the framework of professional practice.

LIS professionals as a group have not considered, in the past, that ethical issues are central to their service to the same extent as journalists for example. The advent of connectivity, however, has highlighted ethical issues on access to information, privacy and copyright.

Access to information

Acquisition of various materials in support of customer needs, has not kept up with the ideal embodied in the professional duty of providing accurate and current information. Currency of collections has not been maintained Nwafor (1990); Buchan (1991); Rosenberg (1996). In an attempt to redress the situation IT has been harnessed utilising CD ROM databases as a solution to information update, fast retrieval and keeping abreast rapid information output, through donor support (Levey 1993). Indicators are that very few libraries can afford the upkeep of CD ROM databases since donor funding ceased. The advent of interactive environments, through the Internet, promises another means for

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increasing access to global information and thus cope with rapid information output and utilise it for development, preferably for competitive advantage.

However costs of actual connectivity are generally glossed over though they are one of the major challenges which must be addressed, if long term sustainability of access to global information in an interactive environment is to be assured.

Ethical issues which impact on sustainability which need to be addressed by LIS professionals are accurate costing, in hard currency, of the following:

- infrastructural requirements and their maintenance
- continuous training of staff at expert level in technical applications to facilitate innovate IT exploitation for customer benefit
- training of customers for effective use
- development of indigenous databases as a contribution to global information. Access to information, as discussed above assumes that there are no social and cultural effects of the interactive environment on customers; that they have requisite literacy in reading and technology exploitation and that they have access to:
 - the technology for accessing information
 - finance required for real time connectivity and in fees for data
 - educational costs essential for gaining the literacies stated above

If the above issues are not addressed adequately, the impact of the interactive environment will be the inability of the majority who are ill equipped for exploitation of IT to access information. The assumption that connectivity will be free to the general citizen seems unrealistic, if the above costs, the current financial climate in developing countries and the related issues of privatisation of governments' parastatal bodies as dictated by Structural Adjustment Programmes are taken into consideration.

Currently library and information services provide access to most information freely. Will this type of service be maintained for an interactive environment when economic telecommunication charges, are payable? Indeed experience in the United Kingdom indicates that in one public library service, a charge of 1.50 pound sterling for half an hour

of Internet connectivity is payable (LAR, 1996).

It seems that the ordinary person on the street might be further marginalised by the complex socio-cultural change required for efficient and effective use of information in an interactive environment. It behooves LIS professionals to address the ethics of potential marginalisation which will result in complex social problems if current experiences of school drop-outs and non-literates foreshadows the future of the electronic environment.

How can access to information in an interactive environment be availed to all persons for the improvement of human dignity and fulfillment of their potential?

Accuracy

Libraries are used to preserving and disseminating information which is contained in a tangible medium which maintains the integrity of content, at least for a short time. The interactive environment has introduced an instability of medium and therefore of content through the Internet's lack of permanence, lack of peer review systems with attendant accountability for accuracy. The production and validation of knowledge has become a multi-national enterprise, as the virtual community makes the invisible college real and instantaneous (Karelse et. al. 1996).

The level of accuracy of information content cannot, however, be guaranteed. Developing countries whose access to external information has generally been limited by financial considerations, will naturally be tempted to redress this situation through indiscriminate seizure of available free information.

The challenges which must be addressed therefore are needs to establish knowledge bases and skills for the evaluation of quality of information; and verification of authority. Education of customers to develop critical analytical skills of information in general including the Internet as a way of life is called for as a basic service offered by all information service practitioners, if the ethics of the profession are of significance to practice.

Cultural norms in the African Diaspora value acquiescence to and acceptance of authority and its information without question. By extension, the written word had been generalized as being authoritative. This may arise from the linkage of the belief in authority invested in religious books (the Bible and the Koran) which, for most African people, have traditionally formed the first encounter with the written word. Additionally, this authoritative source has also been validated by the societal stature and dominance of religious leaders. Educational experiences based on learning by rote from authority

(teachers) as well as reliance on the authoritative textbook in an environment of book scarcity has exacerbated the condition of uncritical acceptance of recorded information in general. It is not, therefore, unreasonable to extend this general approach to information to the Internet output: its information will most likely be assumed to be authoritative by virtue of it being on screen, recorded in a exotic format, in the perceptions of the publics characterised above. As an example, in the normal exchange of information situation on the electronic mail, there is usually an automatic assumption of authenticity of the correspondent and the message if there is a "fit" of content to subject, although there are no footnotes.

It is thus incumbent upon LIS professionals to nurture and further enhance their critical evaluative approach to information embodied in their professional training and activities. Development of information literacy skills programmes for use in training of library customers at the different stages of life and at various levels of education is imperative for empowerment of the general public. Information explosion makes it impossible for LIS professionals to assume total responsibility for accuracy of databases and other products of the interactive environment. As Karelse et al (1996) indicate information literacy skills should equip all information users with a self consciousness awareness of the way in which information systems work, of the dynamic link between the particular information need and the sources and channels required to satisfy that need, as well as an awareness that modern, western information delivery systems are not necessarily the only show in town .

It is imperative for training programmes of LIS professionals to expand the frame of reference of information sources to include non-traditional information sources into the mainstream information management curricula. Professional skills in the evaluation of interactively sourced information, validation and integration with validated indigenous information systems forms an extension of core professional education. The need for contributions of indigenous information to the Internet places additional emphases on traditional skills for organisation of information which are best developed as part of practice since the principles will apply to widely differing environments.

Copyright issues

Copyright in the interactive environment is topical in the developed world arising out of proposed amendments to current dispensations (as applicable to print based materials) which are seen as threatening the potential of the Internet as a provider of global information. The discussions are significant for developing countries and pose a challenge which has to be met squarely. Copyright issues revolve around fair use of copyrighted

works on line without educators (including librarians) seeking permission each time the materials is accessed digitally for study or research purposes (Jacobson 1996)

The greatest advantage offered by the Internet is that it is an information resource which facilitates access to globally published learning media and data base services. The publication of electronic journals has contributed to increased access to varied research information without the exorbitant payment of the cost of item ownership for educational purposes. This advantage forms the core of the reasons that developing communities use to rationalise expensive financial commitments to the interactive environment. As the costs of regular education escalate, developing countries look more and more to solutions offered by non-formal and continuing education, the success of this approach to education is dependent on individual exploitation of learning support materials outside of formal classroom settings. The internet is seen as a major

contributor to this effort. If, however, copyright laws on digital information become so stringent as to stifle creative use of the internet they threaten broadbased, affordable education in developing countries; a recognised gateway to effective participation in the global information age.

Nonetheless it is fair to note that the national stance to copyright issues in most Sub-Saharan African countries demands heightened sensitivity. Examples abound of publicity sold, illegally copied musical tapes in African street markets. Illegally copied video tapes, though in the private domain, are equally common among those who can afford the hardware. Photocopy of complete works whose copyright is violated not only, by "ignorant" students, but also by responsible officials abound in spite of displayed copyright Acts. The rationalisation of such illegal activities ranges from poor book distribution channels, financial constraints, blatant theft, and ignorance of existing national laws on copyright.

The advent of connectivity make it imperative that collaborative efforts among legal practitioners, LIS professionals and educators in sensitisation of communities to obligations of copyright, and updating existing laws. LIS professionals and educators need to address their responsibilities toward education of students in schools and universities, particularly on the values which underlie respect for intellectual property.

Cultural approaches to property ownership for economic benefit and the idea of communal ownership generally prevalent in African culture need to be analysed openly and located within appropriate cultural bases. The former requires that potential economic consequences of piracy be outlined in relation to the human right to earning of a

living and long term contribution to capital for national development and general good. Only when citizens understand the consequences of ignoring copyright will a new ethic toward respect for intellectual property develop and engender change in values and practice. Donaldson 1996.

Privacy

The interactive environment in which the issue of privacy in developing country context is of obvious concern is the electronic mail facility. Confidentiality of private communication is generally assumed to be guaranteed because of the passwords and logging in procedures. Yet, because of the capability for distribution of messages and adaptation of content unbeknown to an originator, there is a potential for invasion of privacy. The use of email for inter library lending which requires personal details about customers are part of the record for official use, they may be used in a manner in which they were not intended. LIS professionals, though professing to be duty bound to observe confidentiality, have been found to keep confidential data without any conscious concern for safeguarding confidentiality.

The lack of sensitivity has on occasion manifested itself in divulging to third parties, confidential information on a customer who has been borrowed documents which are sought by other customers. The ethically insensitive defend themselves by citing responsibility for providing information.

Conclusion

The discussion on challenges of an interactive environment in Sub-Saharan Africa has touched on infrastructural requisites on which access to global information depends. It recognises the importance of political will and leadership vision, and assumes that these fundamentals have been broadly accepted by governments in their efforts to achieve nationally driven economic development and empowerment of communities, through access to global information.

The paper therefore has focused on discussion about the contexts in which committed

pursuance of the objective for empowerment of communities through access to global information depends. Challenges which face developing countries have been identified to focus on the infrastructural backbone of hardware, and human resources. Implications for sustainability, given the general state of African economies, are hinted at as an area of

prime concern. Ethical considerations as they affect choices and their consequences are raised throughout the discussion, particularly in relation to the professional practice and duties of library and information service professionals.

All issues discussed indicate that the real underpinning for successful programmes which seek to create a viable interactive environment is human resource development. Leadership vision is dependent on thorough understanding and internalisation of the human right to information not simply as a means to an end but empowerment inherent in human dignity. Through this, individuals are enabled aspire for self development which ultimately is the unit for viable national economies. Successful implementation of policies arising from this vision depend on human resource development at several levels: the technocratic level which translates policies to decisions for implementation programmes and provide financial support; the professional information service and at the customer levels.

The discussion, however, has focused on the development of library and information service human resource since the identified challenges are viewed from the LIS perspective.

In conclusion the following areas of training and development are isolated as areas which must be addressed if challenges are to be negotiated successfully:

Technical and professional skills

Communication with customers including training in new skills and attitudes to information

Advocacy for cultural change on the value of information

Better professional grounding which facilitates full appreciation of ethical issues in information service generally and especially interactive environment.

1. Technical skills development is essential for the effective manipulation of information technology and for development of expert knowledge which facilitates adoption and creative adaptation of available hardware and software to meet local and evolving needs in areas of:

- design of structures of web sites, providing pages about library and information services through sound knowledge of tools for hypertext creation and for

seamless integration of sources on print, CDROM and on the internet.

- development of new services and enhancement of current services such as extension of current awareness service to encompass information on discussion lists and about new Web sites.
- establishment of criteria for assessment of content of information on the internet; validation of content.
- creation of database for and indigenous information.

2. Communication

LIS professionals skills in communication with customers and advocate responsibilities of the profession are seen as an area needing heavy investment psychologically on the part of LIS professionals as well as in skills development. Without adequate and professional communication with stakeholders, LIS role in the interactive environment will be marginalised either by economists who control financial support of the infrastructure or by computer specialists who control the technical conduits. In either case, customer based information service and focus on content will be of peripheral import. Training and education of customers for and on effective use of IT forms an integral part of needed effective communication channels.

3. Education on ethics of the LIS profession has been neglected in most formal education programmes in Sub-Saharan Africa. Further, practical information services do not have operational guidelines on professional ethics. Only when the need arises and there are legal implications does the issue of ethics arise, probably due to fear of consequences. Policies on ethics of the interactive environment are essential as a beginning which raise awareness of ethics and focus practitioners to areas of potential ethical import. Some of the issues for discussion and formulation of guidelines should encompass:

- usage of the electronic environment for personal interests or gain
- attitudes toward ethics of software acquisition and use institutionally and personally.
- ethics of exploitation of IT environment for monitoring customers staff performance related issues on privacy.
- etiquette in communication within an interactive environment.

- national laws and practice which impact on copyright legal deposit, right to information and confidentiality.

The above should also form an integral part of curricula underpinning all professional courses in addition to a theoretical treatment of ethics in library and information profession in general.

Clearly the challenges facing library and information service professionals in an interactive environment need strong collaborative approaches. If the interactive environment for access to information facilitates networking and closer working relations with related professionals such as computer specialists, educators, economic planners and customers, it will have facilitated real gains toward the benefits of the global information era.

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