DOCUMENT RESUME

ED 441 419 IR 057 690

AUTHOR Chisenga, Justin
TITLE Global Information Infrastructure and the Question of African Content.
PUB DATE 1999-08-00
NOTE 11p.; In: IFLA Council and General Conference. Conference Programme and Proceedings (65th, Bangkok, Thailand, August 20-28, 1999); see IR 057 674.
AVAILABLE FROM For full text: http://www.ifla.org/IV/ifla65/papers/118-116e.htm.
PUB TYPE Opinion Papers (120) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Access to Information; Foreign Countries; *Global Approach; *Information Needs; *Information Services; *World Wide Web
IDENTIFIERS *Africa; *Information Infrastructure; Web Sites

ABSTRACT

This paper looks at the question of African information and cultural content on the global information infrastructure (GII) and indicates how the continent can make a meaningful contribution to the development of African local content on the GII. It presents a general picture regarding development and access to the Internet on the continent and indicates that the basic infrastructure for Africa to contribute to the development of global information exists on the continent. It further examines the various ways and methods through which information with a strong African cultural content can be made available on the GII. Major problems and constraints hindering the development and use of the Internet on the continent are highlighted, and activities that are required to be implemented in order to ensure a meaningful contribution by Africa to the global information content are discussed. The paper concludes by indicating that, unless conscious steps are taken to contribute to global information, millions of people on the African continent will never access information with their own content and, even in the electronic age, will forever remain consumers of electronic information and cultural products produced outside the continent. (Contains 11 references.) (Author/MES)

IFLANET Search Contacts
International Federation of Library Associations and Institutions
Annual Conference

65th IFLA Council and General Conference

Bangkok, Thailand, August 20 - August 28, 1999

Conference Proceedings

Code Number: 118-116-E
Division Number: VIII
Professional Group: Regional Section: Africa
Joint Meeting with: -
Meeting Number: 116
Simultaneous Interpretation: *No*

Global information infrastructure and the question of African content

Justin Chisenga
Department of Information and Communication Studies
University of Namibia

Abstract

The paper looks at the question of African information and cultural content on the global information infrastructure (GII) and indicates how the continent can make a meaningful contribution to the development of African local content on GII. It presents a general picture regarding the development and access to the Internet on the continent and indicates that the basic infrastructure for Africa to contribute to the development of global information exists on the continent. It further examines the various ways and methods through which information with a strong African cultural content can be made available on the global information infrastructure. Major problems and constraints hindering the development and use of the Internet on the continent are highlighted, and activities that are required to be implemented in order to ensure that a meaningful contribution to the global information content is done in Africa are discussed. The paper concludes by indicating that unless conscious steps are taken to contribute to global information, millions of people on the African continent will never access information with their own content and, even in the electronic age, will forever remain consumers of electronic information and cultural products produced outside the continent.

Paper

We have the opportunity to add our unique touch to the new Net culture
(Khaldoon Tabaza, *Star*, Jordan; January 16, 1997)*

GLOBAL INFORMATION INFRASTRUCTURE

The world is slowly witnessing the development of the global information infrastructure (GII), *a seamless web of communication networks, computers, databases and consumer electronics that will put vast amounts of information at user's finger tips* (United States. Information Infrastructure Task Force 1994). Through the global information infrastructure, users around the world will be able to access libraries, databases, educational institutions, hospitals, government departments, and private organisations located anywhere in the world. The Internet, a global network of computers and networks is being seen as the front runner to GII, and is providing an opportunity and infrastructure for publishing and distributing all types of information in various formats in the shortest possible time and at the lowest cost. With millions of people around the world accessing the Internet and still a large number trying to do so, providing information content on the Internet has become a major business, economic, cultural and even political activity. Both large and small business institutions are marketing their products through the Internet. Cultural institutions such as music and film industries, national libraries, archives and museums are also establishing their presence on the Net. Political parties and governments around the world are also using the Internet to communicate their policies, programmes and ideologies.

The Question of Content

In spite of the wide spread of the Internet infrastructure and its use, it is generally felt that there is a dominance of the English language and the content that targets the needs of users in the United States and United Kingdom. As a result of this dominance a number of governments around the world are calling upon their citizens to produced local content in their languages and publish on the Internet, thus making a contribution to the development of local content on the global information infrastructure.

Calls, although not so loud, for publishing local content on the Internet are also being heard on the African continent. The number of African Internet Web sites is growing and almost all countries have local or internationally hosted Web servers (Jensen 1998). Although this is the case, the degree of comprehensiveness of the local content on these Web servers vary greatly. Generally, there are very few well established local content developers on the continent. In addition, most governments have no deliberate or conscious policies to enhance the African content on the Internet. Recently, the United Nations Economic Commission for Africa (UNECA) indicated that surveys have shown that Africa generates only 0.4% of global content, and if South Africa's contribution is excluded, the figure is a mere 0.02% (UNECA 1999. This sad situation should be a matter of major concern to the people of Africa, and especially information professionals on the continent.

AFRICA - ACCESS TO GLOBAL INFORMATION

Establishment of full Internet access on the continent has moved at a very fast rate since 1995. Mike Jensen (1998) painted the following situation regarding Internet development in Africa as at the end of 1998:

- only three countries (Eritrea, Somalia and Libya) had no local Internet access;
- there were almost 400 Internet Service Providers (ISPs) on the continent of which around 100 were located in the Republic South Africa;
- the total number of computers connected to the Internet, excluding South Africa, was almost 10000, as opposed to around 290 in 1995;
- although generally Internet access is concentrated in capital cities, the number of countries setting up Points of Presence (POPs) in some other major towns is growing. Angola, Benin, Botswana, Egypt, Ghana, Kenya, Morocco, Namibia, Tanzania, Tunisia, Zambia and Zimbabwe had established POPs outside the capital cities, while South Africa had about 70 POP locations around the country;
- use of 128kps links had become increasingly common and some countries had established 256kps;

- around 1,000,000 Internet users, of which about 850,000 - 900,000 are located in South Africa;
- French speaking countries had a far higher profile on the Web and greater institutional connectivity than Anglophone and Lusophone countries, due to the assistance provided by institutions such as the Canadian and French governments which are concerned with the dominance of English on the Internet.

Who has Access to the Internet?

In general, academic and research institutions appear to be in the forefront in establishing and using the Internet. Universities in many countries are providing Internet access to their faculties and research staff members while some have even started providing facilities to students. The industrial and commercial sectors are also using the Internet and setting up Web sites. Electronic banking and commerce through the Internet is also slowly becoming a reality on the continent with banking institutions in South Africa leading the way. Governments, although some of them initially appeared to have been opposed to the free flow of information on the Internet, have also started establishing their presence on the Web. A large number of international and non-governmental organisations operating in Africa have Internet access. Internet access from homes is also slowly taking shape.

Taking the above situation into account, although the number of people accessing the Internet is generally low compared to the total population of the continent, it can be said that the basic infrastructure and environment to contribute to global information and culture exist on the Africa continent.

CONTRIBUTING TO GLOBAL INFORMATION

The Internet presents a rare opportunity to the people and institutions in Africa to contribute to the development of the content of the global information infrastructure. The benefits of contributing to global information are many and include the following which were identified by the United Nations Economic Commission for Africa - UNECA (1996, 40). It will:

- make African people producers of indigenous information and knowledge and not simply passive consumers of imported information;
- [enable Africa] export information and knowledge and to participate pro-actively in the development of the global information infrastructure;
- provide African researchers and scientists with access to information on Africa generated from within the continent;
- enable African researchers and scientists to collaborate on equal footing with their peers around the world irrespective of distance;
- promote African cultural heritage, including the modern cultural sector of its rich and growing film and music industries

Contributing to the information and cultural content of the global information can be done in many ways, and the following are some of the ways through which this could be achieved. Some of these activities or projects are already being implemented consciously or unconsciously, although generally on a very small and sometimes uncoordinated scale:

- Local information content on Web sites
- Creating Subject Based Information Gateways
- Creating electronic databases
- Digitalisation of documents and artefacts
- Indigenous language orientation

Local Information Content on Web Sites

Access to the Internet on the content is slowly being followed with the setting up of Web sites

and this is being done by academic and research institutions, libraries, museums, archives, national governments, financial institutions, international organisations, non-governmental organisations (NGOs), large and small business institutions, news agencies and media organisations, and even individuals. The best strategy for contributing to global information is for all these institutions and individuals to make a deliberate decision and provide a large amount of information with local content on their Web sites.

Libraries, Museums and Archives

Libraries, archives and museums are basically information and cultural institutions. They acquire, process, store and disseminate information in various formats. Some of the information being processed is unique in content and of very high cultural value, and in some cases, very limited in distribution. For example, most university and research libraries in Africa have for years collected copies of research reports, papers thesis and dissertations produced by students and members of staff. Most copies of these documents can only be found in these institutions. Archives in Africa have over the years collected unique current and historical records, while museums have in their collections rare art-facts and many other objects of great cultural value. If these collections could be made available in electronic format and accessed over the global information infrastructure, it will go a long way in contributing to the development and growth of Africa's information and cultural content on the Internet.

Unfortunately, most Web sites of these institutions do not contain much in terms of original local information, except for the brochure type of information (Chisenga 1998). In contrast, there is quite a lot of links to full-text information resources produced and stored on Web servers located in other countries outside Africa. It very easy for people from Africa to access information materials from the Library of Congress and other major libraries around the world than materials in a local university or national library, through the Web sites of libraries, archives and museums based in Africa.

Non-Governmental Organisations

Both local and international non-governmental organisations operating in Africa produce quite a lot of information materials with a large local content for public consumption. These organisations conduct research and work on projects whose end result is basically information. In addition, most of these NGOs have the capacity to establish Internet connection and set up local Web servers on which they could publish their information products.

Universities and Research Institutions

Africa has a large number of universities and specialised research institutions like the Institute for Southern Africa Studies (ISAS) of the National University of Lesotho; Institute of Ethiopian Studies (Ethiopia), Kenya Medical Research Institute, Institut Fondamental d'Afrique Cheikh Anta Diop (Senegal), Human Science Research Council (South Africa), Tanzania Commission for Science and Technology, National Council for Scientific Research (Zambia), Nigerian Institute of Social and Economic Research and many more. Members of staff of these institutions conduct research and participate in many projects within their communities, countries or regions, and therefore these institutions have the capacity to produce and publish information with a large African content on the Internet.

African universities and many other research oriented institutions should encourage their academic and research staff to publish their works on the Internet. In addition, they should also publish on their local Web server much of what they are currently producing i.e. annual reports, technical papers, consultancies reports, feasibility study reports, research reports from their specialised research units.

African Governments

African governments have already started setting up Internet Web sites and they should also take into consideration the question of providing adequate local content on their sites. Not only should they provide information targeting potential foreign investors, but also provided information for the consumption of the few Internet users in their countries. The U.S White House Web Site is a source of huge amount of information. Audio and video files, speeches and briefings by the Presidents, policy papers, etc. There is nothing preventing African governments from providing the same level of information services on their Web sites.

News and Media Agencies

Most news agencies in developing countries were established to counter the work of the major international news agencies and media such as the Agence France Presse (AFP), Reuters, Associated Press (AP) and United Press International (UPI), with the aim of trying to balance the flow of news and the seemingly negative reporting by the international media. National television and radio networks are established to serve the local populations. These institutions have put in place the infrastructure to collect news and information from around the country and disseminate such information to both local and international audiences. Using the Internet infrastructure, they can reach millions of people around the world and thus afford the people around the world a rare opportunity to access a wide variety of original and first hand news stories from the African continent.

Therefore, efforts being made by the South Africa Broadcasting Corporation (SABC), the Media Institute of Southern Africa (MISA), Pan African News Agency (PANA), Africa Online and a host of local newspaper publishers to distribute their news stories through the Internet must be commended. These institutions have set up Web sites on which news stories coming from Africa can be found. Online newspapers from Africa are providing an opportunity to a large number of Africans living abroad and other people interested in news from Africa to be up-to-date with events on the continent.

Individuals

Web sites being created by individuals in Africa are also slowly coming up. These sites could also be used as a means of providing information with local content. For example, Africa artists could exhibit some of their works over the Internet; great African musicians like Luck Dube (South Africa), Yousour N'dour (Senegal), Salif Keita (Mali), Baba Maal (Senegal), Khalid (Algeria), Astere Aweke (Ethiopia), Kofi Olomide (Democratic Republic of Congo), Angelique Kidjo (Benin), Papa Wemba (Democratic Republic of Congo), and many more could provide access to their Web sites where their fans could get information about their music, lyrics, and even sample audio files of their music; lecturers and researchers could provide their works on their home pages; and even Sangomas or traditional healers could also market some of their products on the Web sites.

Subject-Based Information Gateways

Subject-based information gateways (SBIGs) or virtual libraries, have emerged as one form of organising Internet information resources and ensuring that researchers, teaching staff and other serious Internet users have access to information which has gone through some form of quality control. Information gateways have been set up in a number of disciplines and the following are just, but a few of the gateways available on the Internet:

Social Sciences Information Gateway (SOSIG)
http://www.sosig.ac.uk
Engineering Electronic Library (EELS)
http://www.lub.lu.se/eel/
Dutch Electronic Subject Services (DutchEES)
http://www.konbib.nl/dutchess
INFOMINE World Wide Web virtual library

http://lib-www.ucr.edu
Edinburgh Engineering Virtual Library (EELV)
http://www.eevl.ac.uk

Information professionals in Africa should consider setting up subject-based information gateways of information resources produced on the continent. These could be in subject areas such as human rights, rural development, governance and democracy, agriculture and the environment, education, etc. Contributions to these gateways could be done by information professionals on the continent located in different countries. Establishing African based and managed information gateways could be one way of marketing the information produced on the continent to the rest of the world.

Electronic Bibliographic Databases

Most libraries and documentation centres in Africa have established local electronic databases. Many of them are using UNESCO's CDS/ISIS software and most of the databases created are bibliographic records of materials termed as 'special collections'. These are materials that relate to the their countries' or parent institutions' available in the collection. If these databases are made accessible and searchable over the Internet, it will go along way in identifying and knowing what information materials are available on the continent and where they are located.

For most CDS/ISIS users who have access to the Internet, a number of Web-based Interface programs for accessing CDS/ISIS based databases are have been developed and made available from the ISIS Users Forum Web sites at: http://www.bib.wau.nl/isis/. These can be down loaded from the site and implemented on the local machines. Unfortunately, Africa with quite a large number of CDS/ISIS users, only the National Archives of Namibia has its CDS/ISIS based databases accessible over the Internet at http://witbooi.natarch.mec.gov.na. Efforts to train information professions in publishing CDS/ISIS databases on the Web are slowly emerging and in June 1999 UNECA organised training workshop in Addis Ababa, Ethiopia, for a number of information professionals from around Africa at which skills in publishing CDS/ISIS databases on the Web were taught. It is hoped that participants at the UNECA workshop will soon be publishing their databases on the Web.

Digitalisation of Documents, Artefacts, etc.

Digitalisation of existing documents, manuscripts, artefacts, and making them accessible over the information superhighway is one major way of contribution to the cultural content of global information. Throughout the world, major digitalisation projects are being implemented. National libraries, museums and archives, with the support of national governments and sometimes private institutions, are spending millions of dollars on creating digital archives. Digitalisation of unique national libraries, museum and archival collections and materials will make these institutions become accessible to all parts of the world.

Unfortunately, efforts towards digitalisation of information materials on the continent are either non-existent or very negligent. Lack of funds, appropriate equipment and skills could be the major hindering factors to digitalisation of documents on the continent.

Indigenous Language Orientation

Africa is a continent of thousands of indigenous languages. While all foreign languages such as English, Portuguese and French, spoken on the continent, have institutions and governments fighting to ensure that they are well represented on the Internet, there seem to be no effort in advancing African indigenous languages on the Internet. Arguably, in terms of cost effectiveness, it may not be feasible to create Internet contents in all of the African languages. However, established African languages like Kiswahili (spoken in the East Africa) and Amharic (Ethiopia), spoken by millions of people, should have a presence on the information superhighway. Governments that have indigenous national languages (i.e. Sesotho in Lesotho,

Setwana in Botswana) should also ensure that materials being produced in those languages also find way on the Internet. This is the only way African Internet users will find materials in their languages in cyberspace.

PROBLEMS AND CONSTRAINTS

While discussing the methods and strategies through which Africa can contribute to global information, it is important to take note and acknowledge the various problems and constraints to electronic information sharing and networking still facing the continent. Above all, Africa's capacity to contribute to global information will largely depend on how well these problems are solved. Jensen (1997, 13-15, 41) discussed in detail the following constraints:

- low level of computerisation in most countries
- scarcity of computers
- lack of proper guidelines on the use of computer facilities
- limited training and lack of skilled manpower
- lack of mechanisms to improve collaboration in areas of electronic networking
- vandalism of network infrastructure (i.e copper telephone lines)
- high import duties on computer and communication equipment
- high price of Internet services in some countries
- lack of Internet bandwidth

It should be noted that the degree of the severity of the above problems differ from country to country. However, if the continent is to contribute effectively to global information, the above problems have to be attended to and a number of strategies and initiatives have to be adopted by both governments and information professionals. The political will of African leaders to establish a viable global information infrastructure on the continent is required and is already taking shape with the adoption of the African Information Society Initiative (AISI) document in May 1996 (UNECA 1996).

WHAT SHOULD BE DONE?

An enabling environment must be established across the continent, and the implementation of the following is considered to be very vital:

- African Information Society Initiative
- National Web servers
- Training of library and information professionals
- Training of technical experts
- Conscious government policies and efforts to contribute to global information
- Effective copyright laws and regulations

Africa Information Society Initiative

African governments and leaders have recognised the role information and communication technologies (ICT), if properly harnessed, can play in the development of the continent. They have also realised the various opportunities presented by ICTs in overcoming the priority challenges which hinder the continent's development in the following areas: job creation, health, education and research, culture, trade and commerce, tourism, food security, gender and development, man-made crises and natural disasters. As a result of this realisation and conviction, in 1996 they adopted the African Information Society Initiative (AISI) document prepared by the United Nations Economic Commission for Africa (UNECA) in which they agreed to establish an African Information Society. Among the recommendations made, the Initiative calls upon national governments to implement the following three which are very relevant to the subject of this paper (UNECA 1996):

- develop and use software and data that addresses the variety of languages used in African countries and oral traditions;
- encourage the development of value added information services including electronic publishing and networking facilities;
- support initiatives which build local content.

Implementation of the recommendations of the AISI document is the surest way through which the continent can contribute to global information.

Training of Library and Information Professionals

Library and information professionals on the continent are in a well placed position to make a strong contribution to the development of the global information infrastructure, by ensuring that much of what already exist in print format finds it way on the information superhighway. However, there seem to be a general lack of adequate skills that would enable them work in electronic information environments. Skills in the following subject areas are required:

- web page design, hypertext markup language (HTML) and the emerging extensible markup language (XML)
- use of electronic networks
- use of metadata
- evaluation of Web-based information sources
- setting up and maintaining subject-based information gateways
- management of electronic documents and collections
- digitalisation of documents

Skills in the above areas are very important if information professionals in Africa are to make a major contribution to global information.

Training of Technical Experts

There are very few technical experts to install and maintain electronic networks and computer equipment on the continent, and generally they are overloaded with work and cannot meet the needs and demands of Internet users. Therefore, dependency on foreign experts from outside the continent is still high and this is in spite of the many years of political independence most African countries have enjoyed. A deliberate policy should be adopted to ensure that establishment of electronic networks goes hand in hand with the training of people to manage and maintain the networks.

The Internet Society (ISOC) is contributing a lot to Africa in the development of technical expertise. Since 1993, ISOC has been organising training workshops for participants from developing countries at which a large number of individuals from Africa have attended. Training has been in host-based internetworking technology, backbone internetworking technology, network navigation services and national network management. Some of the exiting Internet Web servers and Web sites on the continent have been set up by people who have gone through ISOC's workshops. However, local initiatives are required from within Africa to train the required manpower.

Deliberate Government Policies

Governments and information professionals on the continent should adopt deliberate policies aimed at creating local content. Just as there are national libraries, archives and museums, African governments should also encourage and support the setting up of national Web servers at which local information could be published. They should provide support and funds for the digitalization of some of the materials in national libraries, archives and museums.

Copyright Laws and Regulations

The question of intellectual property in the digital information environment should also be addressed on the continent. Electronic publishing and production of various works of art and culture can only be very successful if content producers are assured that their works, even in cyberspace, will be protected by appropriate and effective copyright laws. Unfortunately, the situation regarding protection of intellectual property on the continent is not that good. The major reason is that in some countries, copyright laws are old and out of date and do not protect works produced in electronic formats. In other countries, laws protect only materials produced by certain sectors of the industry i.e. music or published books; and in others, the laws are almost non-existent. It should also be noted that some countries on the continent have not endorsed the many international copyright and intellectual property conventions.

In order to encourage the production of electronic information on the continent, African governments should enact and enforce appropriate copyright laws. Information professionals must take an active part in the establishment of effective copyright laws and also ensure that the new laws are not too restrictive.

CONCLUSION

The global information infrastructure is a global phenomenon with no borders. There are no restrictions on how much should be contributed to its growth in terms of the information content. Therefore, the onus is upon both African political leaders and information professionals to make a valuable contribution to the growth of the global information infrastructure. Political leaders should create a conducive environment by providing the required information communication technology infrastructure, while information professionals should use their information processing and management skills to ensure that information with a large African content is made available on the global information infrastructure.

For years, Africa has been a major market and consumer of information and cultural products from developed countries. Unless, deliberate steps are taken to contribute to global information, the continent's millions of inhabitants will never access their own content, and will forever, even in the electronic age, remain consumers of electronic information and cultural products produced from outside the continent. Fortunate enough, it is not too late. Africa still has the opportunity to add its unique touch to the new Net culture.

REFERENCES

Canada. Information Superhighway Advisory Council. 1995. *Connection community content: the challenge of the information superhighway - final report of the Information Superhighway Advisory Council*. Ottawa, Ont.: Information Superhighway Advisory Council

Chisenga, Justin. 1998. "A Study of university libraries' home pages in Sub-Saharan Africa". *Libri*. vol. 48, no. 1, March. pp.49 - 57

Jensen, Mike. 1998. Africa Internet status. (Accessed on 19th December 1998 at URL: http://www3.sn.apc.org/africa/astat.htm)

Jensen, Mike. 1997. 'Policy constraints to electronic information sharing in developing countries'. *OnTheInternet*, November/December, pp.13 - 15, 41.

Notabaskken, David and Shahid Akhtar. 1994. Does the highway go South? A report of the International Institute of Communications Pre-Conference on Southern countries interests. Tampere, Finland, September 3-4.

Smith, Kirsten. 1998. 'The Changing face of society'. OnTheInternet, November/December,

pp14 - 17.

Rao, Madanmohan. 1998. 'Development almanac: the Internet in emerging nations'. *OnTheInternet*, November/December, pp.24 - 32.

UNECA. 1999. *African content development: creation and dissemination.* [Paper presented at the First Meeting of the Committee on Development Information (CODI), Addis Ababa, Ethiopia, 28 June - 2nd July, 1999]

UNECA. 1996. *African Information Society Initiative (AISI): an action framework to build Africa's information and communication infrastructure*. Addis Ababa: UNECA.

United States. Information Infrastructure Task Force. 1994. Putting the information infrastructure to work: a report of the Information Infrastructure Task Force's Committee on Applications and Technology. - URL : http://iifcat.nist.gov:94

Vandecasteele, p. 1996. 'Networking on duty tracks'. *Computers in Africa,* (November) pp39-40. July 1999

---

* Quoted by Rao, Madanmohan. 1998. "Development almanac: the Internet in emerging nations". *OnTheInternet*, November/December, pp.29

* Quoted by Rao, Madanmohan. 1998. "Development almanac: the Internet in emerging nations". *OnTheInternet*, November/December, pp.29

Latest Revision: *July 19, 1999*

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

REPRODUCTION BASIS

☒ This document is covered by a signed "Reproduction Release (Blanket) form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").