L/ECA/DISD/AVLIN/10

8 May 2003

UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Original: English

ECONOMIC COMMISSION FOR AFRICA

Workshop on Technical Aspects of Building Digital Libraries and Electronic Information Networks

Addis Ababa, Ethiopia
10 – 11 May 2003

Implementing AVLIN:

Reflections on Potential Barriers and Possible Solutions[1]

Introduction

Implementation of the African Virtual Library and Information Network (AVLIN) is about to start. A lot of resources are going to be invested on AVLIN by organizations and individuals to ensure that the project succeeds. AVLIN will provide access to development information and also serve as a hub for the exchange of knowledge and information among researchers and policy makers on the continent. The successful implementation of AVLIN will indeed bring a lot of benefits to decision makers, researchers and other information end-users on the continent. However, it should be noted that implementation of AVLIN on the African continent is likely to encounter a number of barriers. Some of these, like the shortage of finances and relevant technical competencies and skills in participant institutions were highlighted in the AVLIN concept paper (UNECA 2001). Now that the project is about to start, it is very important to reflect on the potential barriers to the successful implementation of AVLIN on the continent, and where possible, examine the possible solutions.

Potential Barriers to AVLIN

This paper briefly examines the potential barriers that may have an impact on the implementation of AVLIN in the African environment. Emphasis is placed on the following barriers to the availability and management of information and setting up information networks on the African continent, as identified and discussed by Adam (1996), Jensen (1997), Mailu (1999) and Chisenga (2001):

- Shortage of appropriate technical skills
- Lack of funds
- Inadequate copyright laws
- Lack of adequate technical infrastructure
- Limited access to ICT facilities
- Low public awareness

Shortage of Technical Skills

Implementation of AVLIN will require various categories of experts with different kinds of skills both at UNECA (AVLIN coordinating office) and in the participating organizations. Skills in the following areas will be required: hardware and software maintenance, computer programming, digital information content development and management, network management, and many more. In addition, AVLIN users will need to possess skills appropriate for accessing and manipulating information in digital format. These include using personal computers and related software, online searching, and evaluation of online information resources.

While not many problems regarding expertise are expected at the AVLIN coordinating office, since these could easily be hired, there is likely to be a problem in many potential participating organizations. The situation in Africa is such that there is a general absence of technical skills in many organizations and this is likely to have a negative impact on the implementation of AVLIN. It should be expected that some organizations may be willing to join and contribute to AVLIN but may not to do so due to lack of individuals with the necessary technical skills in some areas of AVLIN activities.

Admittedly, it is impossible and beyond the scope of AVLIN to provide training in all areas of technical skills that will be required for the successful implementation of the project. Therefore, the onus is on all the organizations that would like to participate and contribute to AVLIN to employ individuals with the relevant skills. However, AVLIN should provide some limited technical support and assist member organizations to develop relevant capacities in areas such as the creation and management of digital collections; and use of software tools and standards to be developed or adopted by AVLIN. In this regard, it is good to note that the AVLIN concept paper indicates that "ECA will recruit and train consultants/advisers/trainers who will be available for the region, prepare training materials to be used, provide referrals in the area of training, evaluate training programmes, and provide worldwide publicity for AVLIN" (UNECA 2001).

Regarding potential individual users of AVLIN information resources, the major responsibility of ensuring that they are equipped with the necessary skills to enable them access and manipulate digital information resources will rest with the member organizations. This is also noted in the AVLIN concept paper where it is indicted that member libraries will provide appropriate training to their staff, library users and communities relating to the access and use of AVLIN resources (UNECA 2001).

Lack of funds

According to UNECA, libraries wishing to participate in AVLIN are expected to "foot directly or indirectly all costs of library resources, hardware, software, and connection to the Internet" (UNECA 2001). This is a very good approach and it will ensure that participating institutions integrate the AVLIN associated costs into their regular budgets. It will also ensure the continued sustainability of AVLIN. As indicated above, assistance from AVLIN should be restricted to provision of technical expertise and building capacities in digital information management.

However, it should be noted that the above approach would mean that only libraries attached to institutions that are generally well to do will participate in AVLIN activities. These are likely to be libraries located in parastatal organizations, private organizations, international organizations and some non-governmental organizations (NGO). Very few

libraries from public funded institutions like government ministries, and in some cases education institutions will participate in AVLIN. A good number of them do not have funds to purchase the required hardware, develop digital content and pay for Internet connectivity. This means that useful and valuable information resources held in most government libraries is likely to be outside the AVLIN domain. This is an unfortunate situation but a necessary one. It is high time governments in Africa started funding and equipping government libraries with the appropriate information and communication technologies. In fact, in some cases, AVLIN's decision not to fund the purchase of equipment for participating libraries may force some organizations and governments to fund their libraries in order to enable them participate in AVLIN.

Inadequate Copyright Laws

Information content to be accessed and distributed via AVLIN will be in digital format, and it is now a known fact that digital information creates a lot of problems relating to copyright and intellectual property. The fact is that *digital information can be easily accessed, reproduced or printed on computers connected to electronic networks. In addition, the quality of digital information never goes down, and copies made are always of very good quality* (Chisenga 1998:99). In addition, it is very difficult to enforce copyright infringements in cyberspace.

The situation in Africa regarding copyright is even more complicated and confusing in some cases. Most copyright laws in Africa are inadequate, some are outdated and do not respond to the advent of the digital information environment. In most countries on the continent pirated music tapes, music CDs, DVDs, video tapes and photocopied text books are sometimes sold in the open even when some of these are protected under existing copyright laws. Therefore, how easy will it be to enforce copyright laws relating to abuse of digital information resources? The impact of this dilemma is that it should not come as a surprise if some participating organizations hold back some information resources from AVLIN due to fears of copyright and intellectual property infringements.

AVLIN should provide expertise and guidelines to assist member organizations that would like to develop appropriate copyright policies. In addition, African governments should be sensitized on the importance of copyright laws that take into account various technological developments relating to the creation and dissemination of information and knowledge in digital format.

Lack of Adequate Technical Infrastructure

AVLIN will be an information and communication technology (ICT) based "network of Internet-based professionally conceived services that form a web of virtual libraries"

(UNECA 2001). Therefore, the information content on AVLIN will be stored on computers located in various participating organizations in Africa, and in some cases outside Africa. Access to AVLIN resources will, therefore require access to ICT facilities such as computers and telecommunication networks.

Although in general the basic ICT infrastructure suitable for the development of AVLIN exists in most countries in Africa, there are disparities among countries. Some countries have well developed telecommunication facilities while others do not. In some countries, the provision of access to the Internet and related facilities and services is well developed and liberalized. As a result, a number of organizations and some individuals can afford to subscribe to Internet services. In some countries it is the opposite. Provision of access to the Internet is a monopoly of one or two organizations.

As a result of this situation, it will be difficult for some organizations to contribute to AVLIN due to the absence of a viable and affordable Internet infrastructure.

AVLIN through, the Committee on Development Information (CODI), should advocate for the liberalization of the provision of Internet facilities.

Access to ICT Facilities

Access and use of digital information resources is largely dependent on the availability and access to telecommunication facilities (telephones, the Internet, and other electronic networks) and computer facilities.

Access to the Internet in homes and in a good number of organizations in Africa is through the use of dial-up facilities. Generally, this requires access to telephone facilities, especially fixed telephone lines. Unfortunately for Africa, there is a shortage of fixed telephone lines on the continent. According to ITU statistics, in 2002, Africa had 2.70 telephone lines per 100 inhabitants compared to 35.25 for the Americas, 12.13 for Asia, 40.93 for Europe, and 40.44 fro Oceania (ITU 2003a).

Regarding access to telephone facilities in Africa, it is important to note the rapid growth in the development and access to mobile (cellular) phones. According to Chisenga (2001), the absence or shortage of fixed telephone lines in most countries in Africa has resulted in mobile phones, although relatively expensive and generally still a luxury, which few can afford, to slowly become the basic means of communication. In 2002, 61% of all telephone subscribers in Africa were mobile phone subscribers (ITU 2003b). Some mobile phone operators and organizations are taking advantage of this development and are starting to provide access to value added information services to mobile phone users. Information such as market prices, weather information, sports results, and much more is being accessed via mobile phones in some countries. However, this technology is still developing and therefore may not be a viable solution to accessing AVLIN resources in the immediate future.

Added to the problem of inadequate telephone facilities is the issue of access to personal computers. Statistics provided by the International Telecommunications Union (ITU) indicates that in 2002 Africa had 1.23 Personal Computers per 100 inhabitants (ITU 2003a). This is in sharp contrast to 3.95 for Asia, 20.01 for Europe, 27.49 for the Americas and 38.94 for Oceania. To make matters worse, the cost of computers in Africa is also quite high and very few individuals can

afford them. This is in spite of the reported reduction in prices of computers in the developed countries. High import duties and sales tax contribute to the high prices for computers on the continent.

It is also important to note that the number of people, especially in sub-Saharan Africa, using the Internet - the vehicle through which AVLIN's information resources and services will be accessed – is very low. For example in October 2002, Reuters reported that when the more developed South Africa and northern Africa are excluded from the statistics regarding Internet use, only one in 250 people in Africa use the Internet, compared to one out of every two in North America and Europe (NUA 2003).

Governments in Africa should create environments that will ensure that people and organisations have access to modern ICTs. There is also need for investments in wireless and satellite technologies that have many advantages over fixed telecommunications lines. Using wireless and satellite technologies, even the remotest parts of the continent can be reached (Chisenga 2001).

Public Awareness of Digital Information

The value of AVLIN will only be appreciated if more and more people in Africa access and use its digital information resources. However, in general there is little understanding of the value of electronic information resources as compared to more traditional information products on the continent. In most cases, print-based information resources are still preferred. This is in spite of the fact that these are quite difficult to transmit from one place to another and difficult to update.

Promotion of AVLIN among various stakeholders and potential users is one way that will ensure that people are aware of its existence. This should be the work of both the AVLIN coordinating office and the participating member libraries.

Conclusion and Recipe for Success

In spite of all the barriers to the development of AVLIN discussed above, the situation in Africa is not hopeless. There are several initiatives relating to the provision of access to development information via the Internet being undertaken on the continent. Institutions have

purchased computers, established Internet access, developed Web sites and are providing access to digital information content. In the short term, these are the institutions that should be targeted by AVLIN. They already have the basic requirements for participating in AVLIN.

References

Adam, L. 1996. "Electronic networking for the research community in Ethiopia". In: Office of International Affairs. National Research Council. *Bridge builders: African experiences with information and communication technologies.* Washington, DC: National Academy Press. pp:123-140.

Chisenga, J. 2001. Features and significance of information networks. [Online]: http://www.infodev.org/icsf/mwala/Features%20and%20significance%20of%20Networking.doc (Accessed 19 April 2003)

Jensen, M. 1997. "Policy constraints to electronic information sharing in developing countries". *OnTheInternet*, November/December, pp.13 – 15, 41.

ITU. 2003a. Main telephone lines. [Online] Available WWW: http://www.itu.int/ITU-D/ict/statistics/at_glance/main02.pdf (Accessed 1 May 2003).

ITU. 2003b. Cellular subscribers. [Online] Available WWW: http://www.itu.int/ITU-D/ict/statistics/at_glance/cellular02.pdf (Accessed 1 May 2003).

Mailu, M. 1999. "An Integrated information and communication perspective for agricultural and rural development in Eastern Africa". *Proceedings of the Integrated Pest Management Communications Workshop: Eastern/Southern Africa March 1-6, 1998, Nairobi, Kenya International Centre for Insect Physiology and Ecology (ICIPE).* [Online] Available WWW: http://informatics.icipe.org/icwesa/proceedings/doc03.htm Retrieved 22 March 2001.

NUA. 2003. Reuters: Internet use increasing in Africa. [Online]. Available WWW: http://www.nua.com/surveys/index.cgi?f=VS&art_id=905358408&rel=true (Accessed 1 may 2003).

UNECA. 2001. Building the African Virtual Library and Information Network: concepts, challenges and opportunities. [Paper prepared for the Second Meeting of the Committee on Development Information, Addis Ababa, Ethiopia, 4 – 7 September 2001]. E/ECA/DISD/CODI.2/9.