

Internet Accessibility: Challenges before the African Nations

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Introduction

About ten years ago, the internet was virtually unknown to Africa, but today all capitals in the region, apart from Cosmos and Somalia (which, incidentally, do not have plans for development in the near future) have internet service. Telecommunication Companies in Nigeria, South Africa, Zimbabwe and Ethiopia are the major producers of internet services in their respective countries. The internet provides the easiest way to achieve the dreams of the AISI, but critical challenges facing the region in its quest to get on the information superhighway must be fully addressed.

According to data from the international connectivity of the internet society (Kroll, 1995), the entire continent of African had only four countries with internet connectivity in 1994: these were South African, Zambia, Egypt and Algeria. Egypt was connected through 64 Kbps lines, Algeria through 9.6Kbps lines. While South African was able to provide 64 Kbps and 1920 Kbps data lines (Mara et al, 1996). By July 1998, there were 37 million internet hosts worldwide supporting an estimated 150 million internet users (Itu, 1999). The number of nations connected to the internet also rapidly increased from 20 in 1990 to over 210 by July, 1998. The USA and Canada together account for 64 percent of all internet hosts, Europe accounts for 24 percent Australia, New Zealand and Japan together account for 7 percent, while African accounts for only 0.5 percent. The vast majority of internet host are in developed nations, therefore suggesting that

wealth, education and telephones are the major factors driving internet diffusion.

Accordingly, a shortage of infrastructure, notably of telephone lines, has been identified as a major obstacle to increasing internet access in Africa (Jensen, Itu, 1998). Since the internet would be riding on the backbone telephone network in most cases, it is not surprising that Africa is faring poorly at this.

Accordingly, the key indicators of internet development are three, namely;

- I. The number of host Computers.
- II. The number of internet services Providers (ISPs) and
- III. The number of internet users (Itu, 1998).

At the start of 1998, there were about 130,000 internet host computers in Africa, of which 122,000 were in South Africa, 3,300 in North Africa, and 4,000 in Sub-Saharan Africa. The top ten Africa countries in terms of internet host were the following

1. South Africa	122,000
2. Egypt	1,800
3. Morocco	1,400
4. Namibia	640
5. Zimbabwe	600
6. Botswana	550
7. Kenya	460
8. Switzaland	330
9. Cote d' Ivoire	250; and
10. Ghana	250

The number of internet hosts (exchanging South Africa) reached 10,000 in early 1999. More than half of the African countries allows competition, and therefore have more than ISP. In 1999, there were more than 300

ISP in Africa, of which South Africa had 70, other countries with more than 10 ISPs also included Egypt, Kenya, Morocco, Nigeria, Tanzania and Zimbabwe (Jensen, 1999). It is estimated from recent survey that the number of internet users in Africa is about 1, 2 million, of which about 65 percent are in South Africa. The numbers of dial-up internet accounts are about 430,000 of which the countries with the highest numbers are as follows (Jensen, 1999).

1) South Africa	250, 000
2) Egypt	40, 000
3) Morocco	20, 000
4) Kenya	15, 000
5) Ghana	13, 000
6) Uganda	12, 000
7) Mauritius	12, 000
8) Zimbabwe	10, 000

Another factor of importance is the amount of bandwidth available for internet access. South Africa again leads with 80 Mbps, followed by Morocco with 8 Mbps, Tunisia with 5Mbps, Kenya with 4 Mbps and Egypt with 2Mbps. Other African Countries with at least 1Mbps are Mauritius, Tanzania, Senegal, Nigeria and Namibia (Jeensen, 1999).

Challenges before Africa Countries

Among other challenges, the following are identified as the major challenges before Africa nations in terms of internet accessibility, lack of enough skilled manpower, lack of enough competition in the communication industry; lack of clearly defined regulation; lack of government commitment; transit cost and high cost of VSAT hardware, lack of adequate power supply, and expensive insurance.

1. Lack of enough skilled manpower; in 1990 Africa had 75 scientist per 1 million population compared to a world average of 1000. Africa contributes 0.7% to the world's scientist and engineers in spite of having about 13.5% of the world population. The

lack of human capacity tends to result in the centralization of technical expertise in an attempt to get the greatest value out of scarce human resource capacity. This leads to the engagement of expertise at a very high cost.

2 Lack of enough competition in the communication industry. The region's joint satellite which was finally launched last December after several attempts is yet to commence service. The regional African satellite which covers the entire continent and a few other islands is also not functional. The Nigeria's NIGCOMSAT-I is also not in operation. From the context of situation, the region needs many more for affordability and seamless internet connection. The networking problem in Africa stems from obsolete policies and negative regulatory framework by government telecommunication has been considered as a government property in many Africa countries.

2. Lack of clearly defined regulation:

Most African countries are more or less like toothless bull does that can only bark but not bite, particularly in the area of policy implementation in which the information sector is inclusive. For instance, the IDRC's (International Development and Research Centre) experience in Africa that was commissioned in 1982, involving African specialists that proposed African information strategy objectives that among others to:

- Designed appropriate information services to meet the needs of grassroots, especially the urban and rural poor.
- Improve information sharing and data transfer at the national and regional levels.
- Stimulate greater use of local technological expertise in information handling by promoting North- South cooperation within Africa.

- Building human resources in information sciences through training of managers and trainers to strengthen the multiplier effect.

However, the above policies and objectives have been reported unsuccessful as a result of their poor implementations.

3. Lack of government commitment. The biggest hindrance to information development has been the attitude of the government toward information Technology (IT) and information infrastructure.
4. Transit cost and high cost of VSAT hardware undefined government policies, inadequate competition, interference, high risk, dearth of skilled technicians, latency of C-band are among several factors why the cost of internet access in Africa remains exorbitant.
5. Lack of adequate power supply: stable electricity system is an indispensable infrastructure in the proper functioning of information infrastructure. In spite of this awareness; African countries have been characterized of poor provision of electricity (Anyanelue, 2006). Successful automation and the use of ICT depends on reliable power supply, but electricity power supply in Africa is epileptic (Ifidon, 1999).

Advantages of satellite Communication in Africa

The advantages satellite communication has over cable were explored for the diversity of services they offer. Originally, they were designed for point-to-point communications over long distances instead of cables with the advantages ranging from being able to serve as a hub where transmission takes place from a single transmitter to a large number of receivers over a wide area or vice versa, or providing multipoint data

transmission and collection of networks (VSAT), their usage have surpassed this.

2. Satellite services have also proved very useful and important for news gathering known as a satellite news gathering (SNG) for programme exchange between broadcasters and for distributing programmes to cable heads or directly to individuals. There is also a rapid growth in digital video broadcasting by satellite (DVB-S) and digital audio broadcasting (DAB) (The Nation, April 21, 2006).
3. The introduction of two-way communications satellites has also made it possible to have interactive TV and Broadband internet services or to use them for multimedia services like distance learning, telemedicine and other online services.

In the continent of about 850 million people, bandwidth is scarce and expensive. Terrestrial links are absent, connectivity is available mostly through costly satellite pipes and politics has helped retard the growth of fibre optic connection including the grossly under-utilized SAT-3 Submarine cables.

4. Satellite have proved effective in mobile communications and can as well be used for distress services monitoring and prevention of natural disasters such as the 2004 Tsunami or for personal mobile communications such as found in Thuraya.

African regulatory authorities and ministers of communications resolved that should African nations, some of which are already exploring these benefits be able to reap the economic benefit thereof, government policies must begin to see access to cheap communications as a human right, a basic need, without political interference with entrusted professionals who understand its dynamics and as an economic enabler.

Conclusion and Recommendations

Internet service is slowly having some impact on the African countries especially the capital states and the major cities. The internet accessibility is being experienced in academic communities and in few business circles. Improvement of the internet accessibility in African regions will require sufficient funding to support their activities. Fund will be required for the purchase and installation of information technology, establishment of local electronic networks, and training of Africans in various information Technologies. Efforts to establish full internet services and accessibility in Africa are intensifying with a large number of projects being implemented by some government, international donors and non-governmental organizations (NGO). However, internet accessibility and services will only be cheap and effective if the following factors are put into consideration:

1. African countries should license more companies to provide fibre optic cables to Africa to ease high cost of bandwidth.
2. Policy makers in Africa should accept the involvement of private sector in the telecommunications sector; privatization offers an immediate inflow of capital and enhances infrastructural development through build-own requirements imposed upon the privatized operator. The advantages of privatization include new capital management improvement, and greater efficiency in service delivery. (Afullo, 2000).
3. The need for improved electricity cannot be emphasized. Most of the ICTs and their accessories are electricity driven; there is need for improvement in the supply of electricity.

4. Backbone infrastructure should be the concern of not only the telecom companies but that of the African governments to expedite action in internet accessibility.

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