

C. Ess and F. Sudweeks (eds). Proceedings Cultural Attitudes Towards Communication and Technology '98, University of Sydney, Australia, 147-167.

NGOS AND INTERNET USE IN UGANDA

Who Benefits?

SCOTT K. McCONNELL
*University School of Rural Planning and Development
University of Guelph
Guelph, Ontario, Canada*

Abstract: Information technology (IT) research has ignored examining the impact of the Internet on unconnected stakeholder communities in the South. This research, which investigates how non-governmental organisations (NGOs) with connectivity are utilising the Internet for their daily operations, and how they are able to acquire and disseminate information from the Internet to their stakeholders, hopes to correct such injustices. The research was undertaken over an eight-week period in early 1998 in Uganda, East Africa. The survey involved representatives of 33 non-governmental organisations (NGOs) responding to seven open-ended questions related to their organisations' use of the Internet, and their information communication patterns. The paper begins with a brief background on Uganda and its telecommunications environment, including a summary of the seven Internet Service Providers (ISPs) currently operating in the country. The survey questions are identified, and the responses are organised into thematic categories which became apparent during the course of the study. The term "Internet" is used to refer to email-only services, as well as World Wide Web services.

The research found that NGOs report benefiting from their use of the Internet through reduced transmission costs, access to new and relevant information, and greater contact with their own field sites and partner organisations. NGO representatives' responses also indicate that the dissemination of Internet-acquired information is occurring with their stakeholders, regardless whether those stakeholders have connectivity or not. The majority of NGOs surveyed (70%) have only one computer with Internet connectivity within their offices; this presents challenges and restrictions in terms of the frequency with which the Internet can be accessed. A mere 5% of the NGOs with field sites reported that those sites were connected with either email or Internet; 33% reported having field sites without any means of direct voice or data transmission systems. The majority of NGOs with World Wide Web service reported using the systems for accessing and researching documents relevant to their work, but 32% of those organisations reported that they either seldom or never used the Internet that was available to them. Most NGOs reported that

they used the email to communicate with international partners; use of the Internet for local communications is low. Respondents reported that email was a very convenient mode of communications, effective in transmitting documents at lower costs than other technologies. Obtaining access to the computers, and the sending and receiving of attached documents proved the most problematic issues for respondents; the latter issue raises questions about the quality of training these organisations are receiving from their ISPs. The paper concludes with lessons learned from the research, and recommends areas for more detailed study.

1. Introduction

The expansion of the Internet in the developing world is occurring at a very rapid pace. Governments have recognised the Internet as an important tool that can be used in the fight against poverty, disease, and environmental degradation. Development agencies, which in the past have been negligent about expanding telecommunications beyond the urban centres of the South (Zijp, 1996), are now assisting with the countrywide expansion of indigenously managed Internet services (Richardson, 1996). Given this scenario, the final years of the twentieth century promise to be an incredibly dynamic period in the technological development of the Third World; the role that non-governmental organisations (NGOs) will play in this development can not be underestimated.

NGOs have been referred to as the “backbone of civil society” (Hyden 1995: 43). Compared to the bureaucracy and corruption that is traditionally associated with national governments, NGOs are, “efficient, less bureaucratic, grassroots oriented, participatory, and contributing to sustainable development in grassroots communities” (Ndegwa, 1996). It is owing to this reputation for competent and appropriate programming that NGOs are being given more and more responsibility for in-country development. A 1996 report on Ugandan development, for example, reported that NGOs were responsible for the disbursement of approximately 25% of all official aid to that country (Ibid.). According to William Frederick, the worldwide growth of NGOs during the 1980s and 1990s, “is due in no small measure to the development of global communication technology” (Frederick, 1993). As Southern telecommunication networks expand, development organisations are placed in closer, faster, and more affordable contact with overseas donors, in-country partners, and stakeholder communities. As a recent article in the Science and Technology magazine, *Wired*, confirmed, “development is starting not only to include but to mean telecommunications” (Negroponte, 1998).

While there is little argument over the potential advantages to be gained through using the Internet as an information tool, there is a growing realisation that the technology alone is useless unless it is acquired and used appropriately (Du Toit, 1995). Following this argument, this research attempts to add to an

area of social science where little research has come before it: understanding whether or not stakeholder communities that do not have connectivity are able to benefit from their association with NGOs that do. In spite of the immense popularity of Internet technology, current literature on the subject of information communication technologies (ICTs) and their use by NGOs pays the unconnected stakeholder little, if any attention.

1.1. PREVIOUS STUDIES

Two separate reports published in 1997 by the Canadian International Development Agency (CIDA) and the International Development Research Centre (IDRC) evaluated the adoption of ICTs in projects located throughout the developing world. CIDA's report, *ICTS and Development: Testing a Framework for Evaluation, Volume 1* (1997) sought to determine how an evaluation framework measuring information, borderless connections, timeliness and improving costs and benefits would fare on five CIDA-funded projects in Africa, South-east Asia, and South America. IDRC's report, *Use of Information and Communication Technologies in IDRC Projects: Lessons Learned*, was designed to test "assumptions about the role of information and communication technologies (ICTs) in development ..." (Graham, 1997). Both reports, while they provided insights into how organisations and projects were able to utilise the Internet and email for their work, failed to address any issues regarding communications with unconnected stakeholders.

Gomez (1997), in his report, *Electronic Agora or Disneyland Democracy?*, surveyed Colombian NGOs with Internet connectivity to record their perceptions of the Internet as it related to their work. The Gomez report, like the two Canadian reports before it, offered valuable information with respect to the value, usage and benefits placed on the Internet by NGO staff. However, it, too, failed to address any issues relating to NGOs' use of the Internet for their communications with unconnected stakeholders.

This paper intends to complement the existing literature available on NGOs and the Internet through its additional focus on how organisations communicate with their connected and unconnected stakeholder communities. If NGOs are to continue to remain leaders in Southern development, it is vital that research be done to assess and understand how well these organisations are able to integrate information technologies (IT) such as the Internet into their programs. More information must be learned about how these organisations are able to share the benefits and resources emerging from the Internet with those who do not have them.

For the purposes of this paper, the term Internet is used throughout this paper to refer to both email and the World Wide Web. Full Internet refers

specifically to connectivity that includes email with World Wide Web access; email refers to access to email only.

2. Background on Uganda

Uganda is a landlocked country located in a region referred to as the Great Lakes Region. Uganda shares its borders with five nations: the Democratic Republic of Congo (formerly Zaire), Kenya, Rwanda, Sudan, and Tanzania. For over two decades, this region has been victimised by some of the most politically and socially unstable environments in the world. At the time of the writing of this paper, only Tanzania could claim an absence of violence and civil unrest within its own borders.

Uganda's population is comprised of some fourteen different ethnic groups, each accounting for anywhere from 1% to 8% of the population (CIA, 1995). The official language in Uganda is English, though at least five different native languages are spoken throughout the country. The 1994 population estimate for Uganda was 19 million, with an annual growth rate estimated at 2.4%; the current population estimate is close to 20 million people (World Bank, 1996). Of this number, approximately 48% of those over the age of fifteen years are able to read and write. 88% of the country's labour force is employed in the agricultural sector; coffee, cotton, and tea account for 99% of Uganda's export earnings (CIDA, 1996). The per capita GDP in Uganda is a low US\$200 per person. The average Ugandan's life expectancy of forty-two years ranks as the third worst in the world, barely ahead of Sierra Leone and Guinea-Bissau, which have expectancies of forty and thirty-eight years, respectively (World Bank, 1996).

For the last twelve years, rebel insurgencies mounted against the government and people of Uganda have taken a heavy toll on the development and welfare of the northern half of the country. The poor social and technological infrastructure existing in the North is primarily due to such instability. Under these circumstances, the challenge for development organisations, and indeed, for the Ugandan people, is immense.

3. Ugandan Communications

Like its development activity over the last twenty years, Uganda's existing communication systems have favoured those living in and around the capital city of Kampala. There are ten AM radio stations operating in the country, all but one of which are located in the capital (Nyirra, 1997). At the time of writing this paper, however, an indigenous, Ugandan NGO is co-ordinating an East African regional project to establish an FM radio station in the far western town

of Kagadi, in Kibale district (Musisi-Kabuye, 1998). There are currently six television companies in operation, all based in Kampala; the government TV Station provides connection to $\frac{3}{4}$ of the country, with the exception of the unstable northern areas (Nyiira, 1997).

Uganda's telephone density is reportedly .25 lines per 100 inhabitants; the ratio within the City of Kampala is 2.8 per 100 inhabitants. Comparatively, estimates for the number of main telephone lines in Sub-Saharan Africa range from 0.5 to 1.6 per 100 inhabitants (de la Brosse, 1995; UNESCO, 1996; Wresch, 1996). Such statistics classify Uganda as a country with one of the worst telephone communication systems in the world.

Kampala, with less than 10% of the national population, lays claim to 73% of the installed telephone lines in the country. Moreover, 80% of the digital telephone lines and modern switching technology serve less than 15% of the country's population (Nyiira, 1997). Until recently, the state-owned Uganda Post and Telecommunications Corporation (UPTC) has been entrusted with running the operations of the country's telephone network. U.P.T.C has, by all accounts, provided a standard of service to the country which can only be described as abysmal. Reports abound of year-long waits to have individual telephone lines installed; even Internet Service Providers (ISPs) report that their requests for additional lines and improved system capacity go unheeded, face lengthy delays, or are addressed in the most minimal way possible (Balidawwa, 1998; Somaiya, 1998). Understandably, most Ugandans share the opinion of one ISP executive who stated that UPT, "has outlived its usefulness" (Balidawwa, 1998).

In 1997, as part of the government of Uganda's current privatisation of state-owned industries, the UPTC was divided into two entities: a telecommunications division and a postal division. The telecommunications division is soon to be sold to private interests, a move intended to, "enable the telecommunications arm to launch itself into the competitive business" (Mukalazi, 1998). In 1998, the purchaser of this company is expected to compete with Mobile Cel Tel, a South African telecommunications company that was awarded the rights to operate in Uganda. One of the conditions for granting the license to Mobile Cel Tel was for the expansion of the telecommunications network into all of Uganda's forty-five districts. As a result, hopes are high for an improvement in telephone accessibility throughout the country. Indeed, the expansion plans call for increasing the number of lines from under 70,000 lines to 300,000 lines, thereby increasing the national density from 0.25 to 2.0 lines per 100 persons by the year 2000 (Nyiira, 1997). With such progressive activity in the telecommunications industry, the Uganda of 1998 is in large contrast to the scenario which existed in 1986, when the government banned NGOs' use of radios for cross-country communications (Ndegwa, 1996).

4. Computers and the Internet

Like the wide diversity of access to main telephone lines throughout Sub-Saharan Africa, the range of African's access to ICT and computers varies greatly. A 1996 report stated that while South Africa had over 800,000 computers in use, Uganda had "just a few thousand" (de la Brosse, 1996). Estimates for Uganda are that there are approximately 3,000 active Internet clients, with a potential ceiling of 4,000 (Balidawwa, 1998). Based on a survey of ISP managers conducted for this research, there are approximately 2,300 Internet and email clients in the country.

In a country of 20 million people, 2,300 Internet users represents a very small number, and may relate to the clash of societal values and norms taking place between Africa and the developed world. Indeed, the concept of using a computer as a means of communicating with someone across town or around the world, as opposed to telephoning or posting a message to them has been described as, "an alien culture" (Musisi, 1998). The limited number of Internet clients in Uganda has also been attributed to the high cost of computers, low levels of computer literacy and poor educational institutions, high transmission rates for telephone usage, and the fact that, "the people have no value for information and knowledge" (Balidawwa, 1998). Woherem (1993) echoes this last point when he states that what Africa needs most at this time is a, "culture of IT, a culture that is aware of the technology and its different uses and that utilises it in governmental, industrial and service sectors" (Woherem, 1993). Until information technology and knowledge become appreciated and integrated into African society, computers and the Internet will risk remaining an elitist tool under-utilised by the majority of people.

5. Internet Providers In Uganda

5.1. BACKGROUND

The birth of the Internet industry in Uganda dates back to 1991, when ESANET, an IDRC-funded project, linked Kampala's Makerere University on-line with universities in Kenya, Tanzania, Zambia, and Zimbabwe using Fidonet technology. MUKLA's ESANET operations, led by Charles Musisi of Makerere University, became operational with the adoption of Fidonet, a system which offered regional interconnection across regular, dial-up telephone lines (Musisi, 1996). MUKLA later combined its ESANET operations with NGOnet, a bulletin board system initiated by the Environmental Liaison Centre International (ELCI) in Nairobi. By the end of its first year in 1992, MUKLA was providing email and bulletin board services to 50 clients. MUKLA also assisted in the 1995 creation and operations of Healthnet, a service provider

targeting the health services community. MUKLA continued to operate until 1997, when the competition from newly created Full Internet providers was undermining its client base.

5.2. INTERNET SERVICE PROVIDERS IN 1998

Uganda currently boasts a number of ISPs offering various services aimed at reaching different target markets. Three different categories of service providers exist: those offering Full Internet, those offering email-only, and those offering HF Radio service to clients out of range of telephone services. The first category is composed of three companies which offer Full Internet, World Wide Web access accounts to their clients: Infomail, Starcom, and Swift Global; a fourth company, Uganda On-line, offers Full Internet services through links to a virtual server in Oregon, U.S.A. Subscribers pay anywhere from US\$50 to US\$65 per month for unlimited Internet and email access, and from US\$29 to US\$30 for unlimited email accounts; all companies charge approximately US\$50 for initial registration and software installation.

At the time of writing this paper, plans were announced of the impending merger of the two largest ISPs in the country, Starcom and Infomail. In addition to having a combined 70% share of ISP business in Uganda, these two companies also lease Internet lines to two other local ISPs. What impact this merger will have on the present-day shape of the Ugandan Internet market is unclear at this time.

The second category of ISPs is composed of three companies offering email-only services: Infoma, Healthnet, and MAFNET. These companies all offer connectivity using Fidonet technology, a dial-up, store and forward networking system that has proved itself a cost-efficient method of meeting the communication needs of people who do not need the instantaneous delivery of information and resources offered by Full Internet connections (AAAS, 1993). With Fidonet, independent nodes and hubs use high-speed modems to establish "gateways" with larger, international electronic mail systems. During daily scheduled transmission times these independent nodes and hubs regularly dial into the larger systems to trade incoming and outgoing messages. All three ISPs use this technology to send and receive messages from international hubs approximately every two hours. Monthly rates for the service average between \$US20 to \$US25 per month.

The third category of ISPs offer HF Radio email accounts to clients who are stationed in remote areas of the country that are not accessible by telephone lines. Two companies currently offer this service: Bushnet, which has been in operation for one year, and Infomail, which has recently expanded its services to include HF Radio in addition to the Full Internet services it has offered for 2 1/2 years. Due to the sophisticated nature of HF Radio service, costs are

significantly higher than for services using conventional telephone lines. Initial hardware costs US\$8000, with minimum monthly charges in the neighbourhood of US\$150 - \$200 per month. As the data transmissions are slower with HF Radio than transmission rates through telephone lines, the clients are charged for the extra expense; rates range from US\$.24 - \$.30 per kb of data.

6. NGOs in Uganda and the Internet

This study of Ugandan NGOs operating with Internet connectivity involved interviews with thirty-three organisations, seventeen of which are categorised as indigenous. Each organisation was personally interviewed with a series of eight key questions, the results of which are charted below. It should be noted that no definitive list or directory of NGOs with connectivity in existence. All NGOs participating in this study were contacted either through referrals from one NGO to another, through ISPs, or by chance.

Of the thirty-three primary NGO representatives who were interviewed for this paper, thirteen (39%) were women, and twenty (61%) were men. In three of the interviews, a second female representative also took part in the discussion. The staff positions of the representatives ranged from executive administrators, to resource and communications personnel, to program officers.

7. The Survey Questions

NGOs were asked the following questions:

1. How long has your organisation had connectivity?
2. Does your organisation have email or Full Internet connectivity?
3. Why did your organisation choose to subscribe to the service?
4. How many computers does your organisation have with Internet access?
5. With whom does your organisation communicate using email?
6. How does your organisation communicate with its stakeholder communities?
7. What have been the positive experiences of the Internet for your organisation?
8. What have been the negative experiences of the Internet for your organisation?

8. NGO Responses by Theme

8.1. LENGTH OF CONNECTIVITY

Of the thirty-three NGO representatives interviewed, thirty responded to the question of how long their organisation had had connectivity. Eleven NGOs (37%) reported having Internet or email connectivity for one year or less. Four (13%) reported connectivity between one and two years; Eight (27%) reported between two and three years; and seven (23%) reported having connectivity for four years or more. Thus, one-half (50%) of all NGOs who responded to the question reported that they had had connectivity for two years or less.

8.2. TYPE OF SERVICE

Twenty (61%) NGOs reported having Full Internet access accounts, while thirteen (39%) had email-only accounts. Of the twenty with Full Internet access, six reported that they initially began their connectivity service with email-only accounts, later upgrading their service to Full Internet.

8.3. PURPOSE FOR OBTAINING INTERNET CONNECTIVITY

Of the thirty-three NGOs surveyed, twenty-one (64%) stated that their primary motive for obtaining Internet connectivity was related to the need to transmit information to and communicate with other organisations. Email is viewed as the fastest, easiest and most reliable way to transmit documents to overseas donors and maintain communications with other agencies. It is viewed as faster and cheaper than regular post, courier, or fax transmissions.

Seven representatives (21%) stated that the primary reason for their Internet access was to have greater access to information. Many of the organisations use the Internet to bolster their resources as well as to stock the resource centres that they offer to other organisations.

Three representatives (9%) stated that the primary motive for obtaining the Internet was financial. Email is seen as a way to reduce costs of communicating with other agencies. For example, the cost of sending a one-page fax anywhere in Africa is approximately US\$3.00 per page, whereas the cost of sending a document through email is significantly lower. During one particular interview, an NGO representative presented nine separate documents to be faxed. Not only did the transmissions take a great deal of time to complete, but the total bill for the nine documents came to US\$36, which is more expensive than the monthly cost of an email account in Kampala.

One NGO representative (3%), an executive with a school program in Kampala, stated that the Internet was brought in to promote IT knowledge and

incorporate its use as a learning and a teaching tool for both students and teachers alike.

One representative (3%) declined to give a response.

8.4. NUMBER OF NGO COMPUTERS WITH INTERNET CONNECTIVITY

Seventy percent of the NGOs contacted in the survey reported having only one computer in the office with Internet connectivity. Four NGOs (12%) reported having two Internet accessing-computers in the office, three (9%) reported having three computers, two (6%) reported having four computers, and three (9%) NGOs reported having a local area network (LAN) of more than five computers in their office.

The location of the Internet-equipped computer was also reported as a factor affecting its use. In organisations with one computer for Internet connectivity, staff frequently reported being unable to access email or the Internet because the computer was being used by a secretary or other staff person to conduct their normal workload of computer tasks. This often led to cases where staff members' ability to use the Internet for work-related functions was restricted to either the early morning or after-work hours. In one case, the NGO representative, who was also the Resource Centre co-ordinator, reported that when the Internet-equipped computer was located in its former position, at the desk of the main secretary, it was rarely ever used. When the computer was moved to the Resource Centre, however, the frequency of Internet use greatly increased. Further research is required to determine whether a correlation exists between the number of computers in an NGO office and the number of staff who report Internet accessibility as a problem; and between the location of the Internet computers and the frequency of Internet use.

8.5. NGOS WITH CONNECTIVITY IN FIELD SITES

Eighteen (55%) of the NGOs interviewed had one or more field sites outside of the city of Kampala. Of that group, however, only five (28%) had field sites which had on-line connectivity with the headquarters. Of the eighteen NGOs that reported having field sites, six (33%) had one or more field sites which are currently without any form of on-site voice or data transmission equipment. As a result of these field sites' isolation from telecommunications infrastructure, staff must rely on a variety of information delivery mechanisms to maintain contact with them, including personal visits, public radio messages, and delivery of mail and documents using bus drivers and visitors.

While all NGOs involved in this study have adopted the Internet as a means of communicating between their headquarters and other organisations, less than one-third of these organisations have extended those communication tools to their field sites. The reasons for this were not researched in the survey, but may

be related to frequent remarks about budget restrictions, as well as NGO staff 's unfamiliarity with basic computer technology. In cases where field sites are out of range for telephone lines, there is a need to explore and promote the use of email through HF radio to bring remote stations into contact with their headquarters; many NGOs were unaware that such technology existed.

8.6. USE OF THE WORLD WIDE WEB

8.6.1. *Subscribers Who Use the Web*

Many of the organisations that reported using the World Wide Web stated that they found it helpful in order to have access to information directly related to their own programs. To various degrees, documents, reports, and general information searches from around the world are being undertaken by those organisations actively using the Web. Indications from the interviews are that, no matter what the frequency of use is within the organisation, the Web's presence is an important one for the staff. For example, one representative reported that he was only able to access the Internet for information twice a month, but presented a number of examples of papers which he had downloaded from the Internet and which were related to his professional interests at the NGO. Another NGO representative regularly gives presentations to fellow staff members on diverse, development-related topics that he discovers and learns of through the Internet. Yet another representative stated that prior to having access to up-to-date resources on the Web, his NGO was, "talking from nowhere" when faced with environmental advocacy issues that required current, accurate information (Kimbowa, 1998). Thus, despite the limited opportunities reported by NGO staff in accessing the Internet, there is evidence to suggest that it is still able to serve a beneficial purpose for the organisations using it.

From the responses of those interviewed, however, there are indications that many of the NGOs are operating the Web with a learn-as-you-go attitude. One organisation reported that they were in the habit of "bookmarking" Web sites for fast and easy reference in an effort to counter the time and costs spent searching on-line for appropriate information. Another organisation's representative, however, who was also its resource person and main Internet user, was unaware that such features were even available. The reality, as one NGO representative remarked, is that a lack of experience with and exposure to the technology leaves many organisations in the position where they, "haven't realised the wealth of the Internet yet" (Sabiti, 1998). It appears that while there is a great deal of information that is accessible to NGO staff, there is much about the Internet and its applications that remains to be tapped through more basic education and training. Further research is required to fully explore how NGOs are able to benefit from their use of the Web.

8.6.2. *Subscribers Who Do Not Use the Web*

Six of the twenty NGOs (30%) with Full Internet connectivity reported that they either seldom used or never used the World Wide Web. Time constraints were listed as the major barrier to individuals' ability to access the Web. Of the six NGOs who reported little or no use of the Web, three stated that time constraints and conflicts with regular workloads as the primary reason. In one example, the American director of a Medical NGO appeared to be the only staff member accessing the Web; the director had his own computer with connectivity, while the other staff were forced to share the Internet on one computer that was used for normal work. Another NGO representative, who admitted to using the Web once in the previous six months, summed up the futility of not having the time to use the Internet when she said, "We know that the information is there (on the Web) but we can't access it" (van der Grift, 1998). Another NGO executive blamed his non-use of the Internet on his regular workload, which prevented him from searching the Internet for information; he also reported that the poor training and service provided by the organisation's ISP left him unable to use the service properly. Given that this executive was the only one in his NGO to have Web access, the result was that no one in the organisation could benefit from its use.

Costs of engaging the telephone for long periods of time in order to search for Internet information was also listed as a factor in non-use of the Web. Average costs for engaging the phone line in Uganda are approximately US\$0.11 per minute. The Country Manager of one major international development organisation reported that she felt "guilty" every time she used the Web to search for information because of the costs incurred during her searches (Virani, 1998). When the executive of a major international NGO reports feeling guilty about the telephone costs charged to her organisation when doing Web searches, one wonders where this leaves the staff who work for smaller, less wealthy organisations.

The sixth NGO representative to report either little or no use of the Web stated that they had only had the Internet installed for one month, and had not had any time to access it.

8.7. COMMUNICATING WITH OTHERS BY EMAIL

The majority of NGO representatives reported that they primarily used email to communicate with organisations and individuals based outside of Uganda. While email transmission costs to international destinations are cheaper than using the telephone or fax, another reason for the focus on international use appears to be the low number of locally based businesses and individuals with connectivity. As one representative stated, "being connected here does not help if others are also not connected" (Ibid.). Another representative complained that

her rural-based organisation was unable to use its email to communicate with other agents operating in the same area. While the organisation uses HF Radio email to communicate with its Kampala-based headquarters, it is unable to communicate with the local District Medical Officer (DMO) one hour away because the authorities lack any communication technologies. Thus, the only way to communicate with the DMO was to make the one-hour drive to their offices, although there was never any guarantee that the staff would be there to receive them (Desonge, 1998). In such cases, their organisation's ability to communicate with the outside world did not help them to communicate locally.

Twelve NGOs (36%) reported using the Internet for in-country communications. In many cases, however, representatives stated that it was just as easy to use the telephone to contact a local organisation, or personally deliver a document, than it was to send an email to them. One organisation's representative, underlying the fact that many organisations are not yet connected with email, stated that all local correspondence is hand delivered rather than sent using email because, "email is not in vogue here yet" (Byanyima, 1998).

Even in cases where the email is being used for local communications, organisations reported using the telephone as a back-up medium to ensure that the message has been received. A small number of NGOs reported that, when urgent email messages are sent to organisations, their staff telephones the organisation to inform them that the message has been sent, thus ensuring that the message would in fact be discovered and read.

8.8. COMMUNICATION WITH STAKEHOLDER COMMUNITIES

8.8.1. *General Communication with Stakeholder Communities*

Oftentimes, rural stakeholder communities served by NGOs lack any communications technology to assist them in their work. In such cases, communication takes place through physical meetings held in person, or through messages delivered by post, taxi or bus. Many of the organisations interviewed for this research reported using local radio stations to get messages out to the rural communities in the country. In using radio as a communications medium, messages can be disseminated to a large audience; if the intended individuals miss the broadcast, others who do hear it are able to pass it along to them. For example, when one organisation needed to alert its rural members that a meeting was scheduled in Kampala in two days' time, the message was broadcast over the local radio; the meeting had 19 of 20 people in attendance (Ereemye, 1998). Thus, organisations and individuals, in the absence of telecommunications infrastructure such as telephones and Internet, use whatever means available to deliver messages to their stakeholders.

8.9. NGOS USING THE INTERNET AS AN INFORMATION TOOL TO ASSIST STAKEHOLDER COMMUNITIES

Based on the interviews undertaken for this research, organisations appear able to make use of the Internet to benefit their stakeholder communities with information that is appropriate to their needs. Three of the NGOs that participated in this survey are associations with member organisations located throughout Uganda; all three have a small number of members with Internet connectivity. These associations reported that they were able to use email to forward information directly to those members with connectivity, ensuring that information dissemination is able to occur quickly and efficiently. In cases where the intended beneficiaries of the information did not have Internet connectivity, the NGO representatives stated that the information is downloaded from the Internet, printed, and then either delivered personally, or sent by fax or post.

NGO associations are not the only organisations disseminating Internet-acquired information. For example, the Mission Aviation Fellowship (MAF), a Christian-based NGO offering air travel and communications support for rural, religious NGOs in Uganda, takes information that has been downloaded from email and has it flown to organisations located in the North. FOWODE, an indigenous NGO promoting women's issues in politics, publishes briefing notes based on information found on the Internet. These documents are distributed in hard copy format to government MPs to raise their awareness on issues concerning women. All Internet-acquired information which is not used in the briefing notes, but which is deemed relevant to the organisation and its resource centre, is collected and stored in hard copy format in the organisation's resource library (Byanyima, 1998).

The Uganda National Institute for Special Education (UNISE) is another organisation disseminating Internet-acquired information to its stakeholders. UNISE receives on-line discussion texts from a student discussion list based at the University of London. Though the Ugandan students, many of whom have never worked with computers, do not actively participate in the discussion group, they receive the downloaded discussion texts from the school administrator. The texts are categorised by the students based on the relevance of the texts to the UNISE program as judged by the students themselves. Once the information has been sorted, it is bound in a resource manual that is made available to the student body. In this way, the students are given the raw information as it appears on the Internet, and can make use of that information in the way that best meets their needs (Ojwang, 1998).

The Uganda Rural Development and Training Program (URDT), an organisation working in rural, western Uganda, has used the Internet to acquire information on appropriate technologies which can be used to assist local

villagers. In one example, the organisation used the Internet to acquire information on solar panel energy, as well as solar panel product and pricing information, which was then presented to the villagers. With the information concerning their energy options before them, the stakeholders were able to assess their options and make the decision that best suited their means (Hardman, 1998). The result is that the village now has ten residents with solar powered energy, able to offer cold drinks and electric light to fellow villagers for the first time ever (Goertzen, 1998).

The above examples suggest that stakeholder communities are able to benefit from NGOs' use of the Internet and email. While the stakeholders, themselves, may not have Internet connectivity, NGOs are still able to disseminate the information acquired from the Internet to them for their own use.

8.10. POSITIVES OF INTERNET USE

Cost savings were reported as the number one benefit for NGOs using email in place of other communication modes such as fax and telephone. As stated earlier, the cost for one organisation's transmission of nine faxes to destinations outside of the country more than paid for the cost of an email account for one entire month. Other organisations noted that prior to having the ability to use email to contact their rural field offices, a driver would have to be sent from Kampala to the field sites to pick-up or deliver a needed document. With the use of email, the need for such transportation was reduced, thereby reducing program costs. Another NGO representative related how he had to make a three-day return trip to their field site in order to retrieve a document needed for the writing of a project proposal. The staff member noted that if the NGO had email connectivity at the field site, such costly journeys for information retrieval would not be necessary.

Most NGO representatives expressed the opinion that the use of email as a communications tool was a convenient way of communicating with others. Respondents pointed out that, whereas with regular post correspondence, a letter from Uganda to another country in Africa might take one month of travel to reach its destination, staff can send an international email message one day and often have a reply by the next morning. Such immediacy of correspondence led one representative to remark that email was, "more personal" than mail correspondence (Were, 1998).

For some of the NGO staff interviewed for this report, the convenience of email made for an easier workload. One representative noted that email enabled the individual sending the correspondence to bypass the need for a secretary to draft and re-draft letters before they were sent. With email, one individual could independently manage the entire letter-writing process much more quickly, and expect to have a response to the message as early as the next day. Other NGOs

stated that the improved communications within their own organisations was a benefit. One NGO executive explained that with email, her organisation's African field offices could now engage in on-line discussion groups with their headquarters in London. With email, she said, "Discussions may take two weeks (to occur), but compared to the cost of a telephone call there is no comparison" (Komagum, 1998).

8.11. PROBLEMS EXPERIENCED WITH THE INTERNET

The most common difficulty associated with the use of the Internet was the sending and receiving of attached files over email. Some of those who expressed this complaint stated that they were able to solve the problem simply by sending an email to the sender of the document and asking it to be re-sent in another format. Two representatives reported that they often solve the decoding problems by physically taking their lap top computers from their offices to the offices of their ISP, where the staff are competent in dealing with such difficulties. One NGO reported that when they have difficulty sending or receiving attached documents, they usually end up faxing the document to save the time and trouble of solving the problem.

General accessibility to the computers with connectivity was also mentioned as a problem for NGO users; this may be related to a number of circumstances. Firstly, as 70% of the NGOs surveyed had only one computer with connectivity in the office, it is obvious that conflicts will emerge when one individual wishes to use the Internet while another wishes to continue the administrative work being done on that same computer. Secondly, many of the offices had either one telephone line in the office with which to share the Internet and the telephone, or else the Internet was using the same telephone line used by the office fax machine. In such situations, the use of the Internet requires the co-operation and patience of not only those using the Internet, but also that of the other staff who rely on the technologies put out of use by the Internet.

Another problem expressed by NGO representatives was the increase in individual workloads as a result of having the Internet. Some representatives stated that the demand for faster replies to email correspondence forced them to respond more quickly than if the correspondence had been through regular post. Furthermore, some representatives reported that, when coupled with their already heavy work responsibilities, the demands of attending to email and Internet were too much for the staff to handle. With staff responsibilities already stretched to the limit in short-staffed offices, the Internet was proving to be yet another burden to be dealt with.

9. Lessons Learned

9.1. LIMITED COMPUTERS AVAILABLE

70% of the NGOs involved in this survey have just one computer available in their offices on which to use the Internet. Based on the responses of these organisations, two aspects of this theme are recommended for further study. Firstly, investigation is needed to determine whether there exists a relationship between the number of NGOs that have one computer with connectivity and the number of NGO representatives who reported that their regular responsibilities prevented them from using the World Wide Web. Secondly, further investigation is needed to determine whether a relationship exists between the location of the NGO's Internet computer(s) and the staff's frequency of Internet use. More information is needed to ensure that organisations are equipped with the tools required to operate the Internet efficiently and effectively.

9.2. EMAIL USE DOMINATES

In virtually all cases, email is the main use of on-line connectivity for organisations and their staff. It is a telling statistic that while the majority (61%) of NGOs surveyed have access to the World Wide Web, over one-third of that number reported having had either very limited use of the Web, or none at all. If donor agencies and organisations are to assist NGOs in acquiring Internet facilities and equipment, they should do so in a way that does not overburden the staff with more work. If it is necessary for an office to have two or more computers to enable its staff to benefit from the resources of the Internet and maintain their current work-levels, then that is something that should be done.

9.3. INTERNET MEANS COMMUNICATIONS COST SAVINGS

The majority of organisations surveyed reported that they chose to obtain Internet connectivity because of their need and desire to have cheap and efficient communications with international organisations and donors. While no economic study was done to determine whether cheaper communications had actually been achieved, most of the representatives pointed to reduced costs in terms of faxes that could now be sent as emails with attached documents. Most representatives were satisfied that their organisation's decision to use the Internet was a wise one.

9.4. MINIMAL USE OF EMAIL FOR LOCAL COMMUNICATIONS

Email communication is used primarily with international partners and organisations. Local communications are carried out using either the telephone or personal visits, due to the lower numbers of local email and Internet clients.

9.5. FEW NGOS WITH FIELD SITE CONNECTIVITY

Of the eighteen organisations that reported having field sites, only five (28%) have sites with email or Internet connectivity. Furthermore, six organisations (33%) reported that their field sites had no form of on-site voice or data transmission equipment available for their staff. Perhaps through a greater use of their own headquarters' systems, organisations will begin to realise the benefits of having connectivity with their field sites. Indeed, those organisations with connectivity at their field sites reported that having the option to send attached files over the email, and thereby avoiding the inconvenience of sending a driver or courier to transport the documents, saved the NGO in terms of staff resources, time and money.

9.6. NGO STAFF BENEFITING FROM THE USE OF THE INTERNET

Organisations which have integrated the Internet into their daily programming appear to be benefiting from the access to new and relevant information. Even representatives who reported minimal frequencies of Web use produced documents that had been downloaded from the Web for their own benefit. The Web gave NGO staff access to recently published documents that greatly enhanced their resource centres. Prior to their access to the Web, many of these organisations relied upon publications from their own resource centres that were as many as twenty years old to assist them in their programs.

9.7. INTERNET BENEFITING CONNECTED/UNCONNECTED STAKEHOLDERS

Use of the Internet appears to be assisting NGOs in acquiring and disseminating information to unconnected stakeholders. Organisations stated that they were now able to obtain relevant information and documents for their programs and stakeholders more quickly. Furthermore, organisations appear to be in the habit of downloading, printing, and distributing on-line information to both field staff and, indirectly, to their rural, unconnected stakeholders. Further study is required to determine the extent to which such communication is really occurring, and the success of bringing the Internet and its opportunities into the sphere of the unconnected rural stakeholders.

9.8. PROBLEMS WITH INTERNET TRAINING AND HUMAN RESOURCE DEVELOPMENT

Organisations expressed difficulties in their ability to send and receive attached files through email, and a lack of awareness of the Internet tools available to facilitate easier use of the technology, such as “bookmarking” Web sites. ISPs have a responsibility to provide their clients with the training and the tools that are necessary to operate their Internet systems effectively and efficiently. All of the ISPs in Kampala boast of strong customer service and training when new clients register with them, yet the comments of many NGO representatives appears to indicate that the quality and quantity of training offered to new users of Internet systems is not sufficient. The degree of training provided to all Internet clients may need to be reassessed and improved upon. If clients are unable to perform basic operations with their Internet and email services, they are missing out in their ability to harness the benefits that the Internet can offer them.

10. Conclusion

This research was undertaken to achieve an understanding of the issues and challenges facing NGOs in Uganda as they adapt the newly emerging technology of the Internet into their developmental work. More importantly, it was an attempt to understand the degree to which the NGOs’ stakeholders, those with and without connectivity, are able to benefit from the NGOs’ use of the Internet. This study succeeds in presenting initial evidence that NGOs are using Internet technology to not only benefit themselves, but to also benefit the connected and unconnected stakeholder communities that they work with. NGO representatives reported using the Internet as a tool with which they could forward documents and information to their stakeholders that had connectivity.

By downloading and distributing information relevant to their unconnected stakeholders, NGOs are demonstrating that the absence of stakeholder connectivity does not prevent Internet-acquired information from reaching them. Indeed, many of those stakeholders who are reported to receive Internet-acquired information from NGOs have neither Internet connectivity nor any previous computer experience. In terms of receiving Internet-acquired information, the only difference between stakeholders with connectivity and those stakeholders without it are the mediums that are used to actually deliver the information to them.

The contents of this report are based entirely on the comments and observations provided by the NGO representatives who participated in the research. It is the intent of this author to investigate further the information communication patterns practised by NGOs with Internet connectivity, to

document exactly what the impacts of NGOs' Internet connectivity are on the unconnected stakeholders with whom they work. It is only through understanding how information that is received through the Internet flows within an organisation, and how that information is able to be shared with the stakeholders who are meant to benefit from it, that the true impacts of the Internet will be known.

11. Bibliography

- AAAS.: 1993, *Electronic Networking in Africa: Advancing Science and Technology for Development*, American Association for the Advancement of Science, Washington, DC.
- Balidawwa, E.: 1998, Internet Manager, Starcom Ltd., Kampala, Uganda, Personal Communication, March 6.
- Byanyima, W.: 1998, Chairperson, Forum for Women and Democracy (FOWODE), Kampala, Uganda, Personal Communication, February 23.
- CIA: 1995, Uganda: Information, Paper published on the World Wide Web and available at <http://www.info.usaid.gov/Horn/uganda/cia/uganda.html>.
- CIDA: 1996, CIDA and Uganda, Paper published on the World Wide Web and available at http://www.acdi-cida.gc.ca/cida_nsf/852562900065548b8525625b00126ec3/1984c7477d06a1af85256448006afcf4?OpenDocument.
- de la Brosse, R.: 1995, The Internet and the South, *Panos*, **16**, October.
- Desonge, C.: 1998, Physician, Médecins du Monde. Masaka, Uganda. Personal Communication.. February 21.
- du Toit, C.: 1995, Developing Information: An NGO Case Study, in P. Fitzgerald, A. McLennan, and B. Munslow (eds), *Managing Sustainable Development*, Oxford University Press, Cape Town, pp. 608-625.
- Ereemye, I.: 1998, Program Officer - Training, National Association of Women's Organisations in Uganda (NAWOU), Kampala, Uganda, Personal Communication, February 27.
- Frederick, H. H.: 1993, Electronic Democracy, in Harasim, L. M. (ed.), *Global Networks: Computers and International Communications*, MIT Press, Cambridge, pp. 283-295.
- Goertzen, H.: 1998, Volunteer, Uganda Rural Development and Training Program (URDT), Kampala, Uganda, Personal Communication, February 9.
- Gomez, R.: 1997, *Electronic Agora or Disneyland Democracy?*, Partial results of a study on the uses of computer-mediated communication (CMC) among NGOs in Latin America, Cornell University.
- Graham, M.: 1997, *Use of Information and Communication Technologies in IDRC Projects: Lessons Learned*, Evaluation Unit, Corporate Services Branch, International Research Development Centre, Ottawa.
- Hardman, E.: 1998, Appropriate Technology Officer, Uganda Rural Development and Training Program (URDT), Kampala, Uganda, Personal Communication, January 30, 1998.
- Hyden, G.: 1995, Bringing voluntarism back in, in Semboja, J. and O. Thirkildsen (eds), *Service Provision Under Stress in East Africa*, Centre for Development Research, Copenhagen.
- Kimbowa, R.: 1998, Program Officer (Agriculture and Forestry), Joint Energy and Environment Projects (JEEP), Kampala, Uganda, Personal Communication, March 11.
- Komagum, H.: 1998, Program Manager, Mission Aviation Fellowship, Kampala, Uganda, Personal Communication, February 25.

- Mukalazi, S.: 1998, Way Cleared for Sale of Uganda Telecommunications Giant, *The East African*, January 19-25, p. 2.
- Musisi, C.: 1996, MUKLA: Evolution of a Homegrown Network in Uganda, in National Research Council (ed.), *Bridge Builders: African Experiences in Information Communication Technology*, National Academy Press, Washington, DC, pp. 157-176.
- Musisi, C.: 1998, Director, Africa On-line, Kampala, Uganda, Personal Communication, February 27.
- Musisi-Kabuye, F.: 1998, Director, Uganda Rural Development and Training Program (URDT) Institute, Kampala, Uganda, Personal Communication, March 6.
- Ndegwa, S.N.: 1996, *The Two Faces of Civil Society: NGOs and Politics in Africa*, Kumarian Press, West Hartford, Connecticut.
- Negroponete, N.: 1998, The third shall be first: The net leverages latecomers in the developing world, *Wired*, January 1998. p. 96.
- Nyirira, Z.M.: 1997, *The ACACIA National Strategy for Uganda: Background, Vision, and Implementation Strategy*, Paper prepared for the National Workshop for the Development of a Ugandan National Strategy for the Utilisation of Information and Communication Technologies for Community Development, December 8 - 10, Kampala, Uganda.
- Ojwang, P.: 1998, Lecturer, Community Based Rehabilitation Program, Ugandan National Institute for Special Education (UNISE), Kampala, Uganda, Personal Communication, February 10, 1998.
- Richardson, D.: 1996, *The Internet and Rural Development: Recommendations for Strategy and Activity*, Paper published on the World Wide Web and available at <http://www.fao.org/waicent/faoinfo/sustdev/CDDirectct/CDDO/contents.htm>.
- Sabiti, A.: 1998, Program Officer, COOPIBO, Kampala, Uganda, Personal Communication, February 11.
- Somaiya, A.: 1998, General Manager, Infomail Ltd, Kampala, Uganda, Personal Communication, February 4.
- UNESCO: 1996, *Conference of Ministers of UN Economic Commission for Africa, May*, Paper published on the World Wide Web and available at <http://www.unesco.org/cii/telematics/cm22-6.htm>.
- Virani, Z.: 1998, Country Manager, Aga Khan Foundation, Kampala, Uganda, Personal Communication, February 24.
- Van der Grift, V.: 1998, Communications Officer, Redd Barna - Save the Children (Norway), Kampala, Uganda, Personal Communication, February 24.
- Were, J.: 1998, Assistant Documentation Co-ordinator, Isis-Wicce, Kampala, Uganda, Personal Communication, February 5.
- Woherem, E. E.: 1993, *Information Technology in Africa: Challenges and Opportunities*, African Centre for Technology Studies, Nairobi.
- World Bank.: 1996, *From Plan to Market: World Development Report 1996*, Oxford University Press, Oxford.
- Wresch, W.: 1996, *Disconnected: Haves and Have-nots in the Information Age*, Rutgers University Press, New Brunswick, NJ.
- Young, V., G. Brown, and J. Laursen.: 1997, *ICT Development: Testing A Framework for Evaluation, Volume 1*, Final Report, Performance Review Division, Canadian International Development Agency, Ottawa.
- Zijp, W.: 1994, *Improving the Transfer and Use of Agricultural Information - A Guide to Information Technology*, World Bank, Washington, DC.

