



CHAPTER 10

THE NAKASEKE MULTIPURPOSE COMMUNITY TELECENTRE IN UGANDA

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INTRODUCTION

It might be asked, “The vast majority of African people have never made a telephone call, so how can the Internet benefit them?” And, as Chasia (1998) notes, it is also often said that most Africans have so little income that the minimal return on the heavy investment necessary to provide even basic telecommunication services in rural and outlying areas cannot be justified. The Nakaseke Multipurpose Community Telecentre (MCT) project was designed to challenge these ideas and provide a test bed for future investment in information and communications technologies (ICTs) for rural development.

LOCATION AND CONTEXT

Uganda has a population of 21 million, of which 88% live in rural areas and largely depend on subsistence farming. Nakaseke MCT is located in the 254 square kilometres rural Nakaseke Sub-County in the Luweero District of Uganda, about 50 kilometres north of Kampala. It actually serves two sub-counties (administration units), Nakaseke and Kasangombe, and a network of villages with a total population of 31,000 people (1991 census), over 1,000 of whom live in the proximity of the Nakaseke Trading Centre.

The penetration of the communication services in Nakaseke and Kasangombe, as in many other parts of the country, is very poor. In 2000, the Uganda Communication Commission estimated the national teledensity to be 0.28%, with television coverage being a low 10:1,000 and radio coverage 106:1,000.

HISTORY

The Nakaseke MCT is part of the broader MCT Pilot Programme launched at the co-ordination meeting for the African Information Society Initiative (AISI) in Addis Ababa

in 1996. The programme was a major component of the Harnessing Information Technology for Development (HITD), an element of the U.N. System-wide Special Initiative for Africa. Three international sponsors — the International Development Research Centre (IDRC), International Telecommunication Union (ITU) and UNESCO — with support from the Danish aid agency, DANIDA, subsequently undertook a study into the feasibility of MCT pilot projects and recommended Uganda as one of the participating countries. Uganda was then invited to develop a plan to set up a single pilot MCT, albeit taking account of the generic approach (Rose 1999).

The establishment of the MCT was also facilitated by the enactment of the 1997 Ugandan Communication Act, which among other issues provided for the liberalisation of the communications sector. Nakaseke was seen as an excellent site for a pilot programme because its telecommunications and other infrastructure had been severely affected by the civil unrest between 1980 and 1986, and the sub-county was in the process of reconstruction. It was also seen as an ideal community because it was sufficiently close to Kampala to allow for monitoring and technical support, and because the rural community showed great commitment and enthusiasm for owning and participating in an MCT. Uganda was therefore able to put forward a sound and comprehensive proposal and received international funding to initiate this three-year pilot project in early 1998. Nakaseke became one of five UNESCO/IDRC/ITU-supported telecentre projects in Africa, the others being in Benin, Mali, Mozambique and Tanzania.

The Nakaseke MCT became operational in March 1999. The general concept was to provide, in the face of scarce resources, a centre where the rural community could access information and communication resources — print, video, CD-ROM, telephone, fax, e-mail and the Internet/Web — and where it could be shown whether providing ICTs to rural communities could catalyse their development and improve the quality of their lives. The effectiveness of the MCT strategy was to be measured against the level at which the community had received increased access to ICTs, local content for capacity-building in ICTs and socio-economic development, and had participated in documenting and using indigenous knowledge (Mayanja 1999).

AFFILIATIONS AND STRATEGIC ALLIANCES

In pursuit of the above objectives, the MCT forged partnerships with institutions and individuals who had the required resources or who could provide access to potential users. At the international level, these included UNESCO, the Food and Agriculture Organization (FAO) and The British Council. At the national level, they included the Uganda National Commission for UNESCO, the Uganda Public Libraries Board, Uganda Telecom Limited, NARO (National Agricultural Research Organisation), Kawanda Agricultural Research Institute, local non-governmental organisations (NGOs) and the community and opinion leaders within the Nakaseke and Kasangombe communities.

These partnerships provided invaluable technical resources and support free of charge, which has in turn facilitated programming and content creation. For instance, the partnership with The British Council brought in £15,000 worth of library and information materials, while the FAO and NARO have collaborated in the development of a much-needed electronic agricultural information system for sharing information among researchers, agricultural extension workers and farmers in Nakaseke.

FUNCTIONS

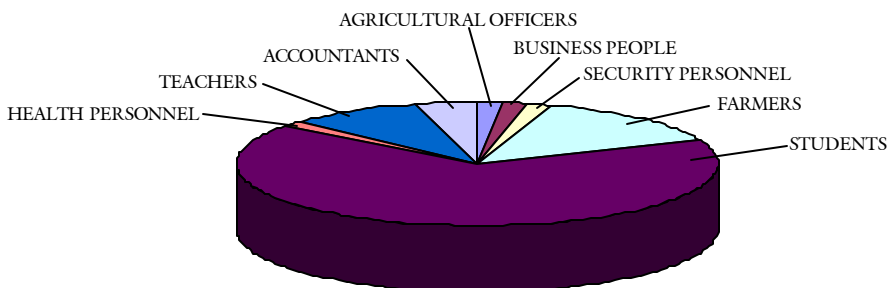
The MCT serves the two sub-counties (administration units) of Nakaseke and Kasangombe. Within these are 23 primary schools, six secondary schools, a university and a regional Primary Teachers Training College, none of which has ICT resources or resource centres and all of which are therefore entirely dependent on the services of the MCT. All of these institutions are centrally located around the Nakaseke Trading Centre. There is also the Nakaseke Hospital, a five-minute walk from the MCT, a district hospital for the Luweero and Nakasongola districts. This hospital is seriously under-resourced in terms of medical facilities and, prior to the launching of the MCT, lacked even the most basic ICT system to communicate with the districts it serves and the outside world. The MCT therefore needed to provide the medical and administrative staff with a communication facility. The MCT also serves a network of NGOs grouped under DENIVA (Development Network of Indigenous Voluntary Associations), the local administrative council, small businesses, farmers, women’s groups, unemployed youths and the community generally.

The MCT maintains a database of all users’ names, addresses, ages, gender and occupations. User forms are provided at all service points for the purposes of registration and to capture as much information as possible about each user. These data are later used in evaluations of services and to inform decision-making. All users thus registering are issued with registration numbers and cards by which they can identify themselves on all future visits. No further identification or registration is required as the numbers are automatically stored in the database. There are currently more than 500 registered MCT users (Table 10.1 and Figure 10.1).

Table 10.1: User groups of the Nakaseke Multipurpose Community Telecentre.

GENDER:	
Female	25.8%
Male	74.2%
AGE:	
<15 years	4.88%
15–20 years	54.47%
20–30 years	22.76%
>30 years	17.89%

Figure 10.1: Main occupations of user groups of the Nakaseke Multipurpose Community Telecentre.



The MCT offers a range of services:

- telephone and fax;
- resource centre and book box for schools;
- Internet and e-mail;
- ICT training and applications;
- topical video shows;
- outreach programmes and community development programmes;
- secretarial services;
- compilation and dissemination of indigenous knowledge;
- sports and entertainment;
- telemedicine; and
- demonstration site for modern agricultural practice and, in partnership with the FAO, linking of research centres with extension agents and rural farmers.

To develop the local capacity to appreciate, use and manage the MCT, more than 20 community members were trained in the use of ICT and as trainers during the period March – April 1999. Four of these trainees showed the particular commitment and capacity needed to sustain the training programmes, and to date they have trained more than 80 users, including schoolchildren. Their remuneration is calculated at a rate of 30% of the total revenue generated by the ICT training programmes. Such a strategy has provided the kernel of the MCT and a stable, solid foundation for the MCT's services (Pact Institute 1998).

The MCT has planned a series of outreach programmes to take the MCT services closer to the people. These are in response to MCT evaluations revealing low participation rates by communities farthest away from the MCT, and particularly by women. The activities include mobile ICT demonstrations, community reading centres and telecentre clubs in schools.

Those engaged in local community development programmes often require information from multiple sources including the Internet. Such information is searched for by the MCT's staff and/or information brokers within the wider community, repackaged by the MCT and disseminated back into the community in forms (such as audiovisual materials) appropriate to the target groups.

In support of the indigenous knowledge programme, the MCT collects local knowledge and practices in health and agriculture and repackages this in video, audio and print for interested members of the community. Materials on organic farming, medicinal plants and traditional birth attendants have been collected with the assistance of those with special local knowledge in the community. As well, the MCT has documented local indigenous knowledge on one of the Heroes of Uganda and a son of the community, I.K. Musaaizi, who is regarded as the father of nationalism in the country.

The MCT also provides telemedicine services for the Mulago and Nakaseke hospitals, enabling health workers to consult with each other by phone, fax and e-mail. This is improving the provision of health services, especially where professional capacities are scarce. The highest level of service provision involves a portable tele-in-vivo machine capable of acquiring and transmitting 3-D images to facilitate teleconsultation over a single data set.

To capture the interest of potential users, the MCT has also organised sports events, video shows and other free events.

COSTS AND FUNDING

The MCT receives budget support of up to 60% of its running costs from its international partners — the IDRC, ITU, UNESCO and DANIDA — and the Government of Uganda. The total international budget is US\$396,425. The national and local partners are investing about US\$124,000 over the three years of the project, including about US\$68,000 from Uganda Telecom for the telecommunications infrastructure. The MCT has also received donations and materials from other local and international organisations.

The remaining 40% of the budget is provided by the local community. As a long-term investment, the community is providing a permanent building for the centre at an estimated cost of US\$25,000. The community has also been assuming greater responsibility for building maintenance, staff salaries and allowances, security guards and other running costs.

The financial year 2000 – 2001 will mark the introduction of tuition fees by the MCT. All schoolchildren will be required to pay the equivalent of US\$0.59 per year towards the cost of the services provided by the MCT. More than 8,000 students are eligible to pay this tax, which will represent a major community contribution to the centre amounting to well over US\$4,000. This strategy has been embarked on with strong support from the community and is extremely timely, given that the pilot phase will end in March 2002. It also generates a stronger sense of ownership among the beneficiaries, and makes the MCT more accountable to the community.

Financial self-sufficiency is planned for within three to six years and it is anticipated that the community will gradually take over full responsibility of the operation of the centre.



Nakaseke Multipurpose Telecentre.

ACCOMMODATION

Nakaseke MCT is currently temporarily housed in a former community centre building. The T-shaped building contains three rooms, a large hall used for the resource centre, ICT training and video shows, plus two smaller side rooms: used for administration and as a business centre. Some of these services are currently restricted by the accommodation, a problem that will be largely resolved when the MCT moves into the new public library building that is to be its permanent home.

MANAGEMENT

The MCT is currently owned by the Nakaseke Sub-County Council. It is anticipated that after three years the telecentre will be put under contracted management on behalf of the community.

Three committees have been established to plan and manage the MCT: a Management Committee, a Local Steering Committee and a Core User Group.

The Management Committee, responsible for policy-making and co-ordinating donor support, is composed of representatives of the MCT's key stakeholders. This committee meets regularly.

The Local Steering Committee monitors and advises the Management Committee and Local Council on the implementation of the MCT. It has representation from the Public Libraries Board, Uganda Telecom and other agencies involved in areas covered by the project. It provides technical advice and support to the MCT staff and its members are only a phone call away. This group will also be the foundation for the community ownership management system after the pilot phase and, as such, will act as the technical arm of the centre.

The Core User Group is representative of the users and ensures that their interests are reflected in the design and service delivery of the MCT's applications.

A part-time Project Officer, based at the National Commission for UNESCO in Kampala, is responsible for the day-to-day project management and co-ordination among the local, national and international parties.

STAFFING

The MCT has a staff of four: the Manager, Assistant Manager, Information Officer and Assistant Information Officer. The Manager and Information Officer were hired from Kampala and are responsible for training their two assistants who are local persons paid for directly by the community. This strategy helps the centre develop local capacity and thus work towards self-sufficiency. The other members of the team are four local "ICT champions" who received their training in the initial months of the MCT and now manage the ICT training programmes, paid on a commission basis.

TRAINING MANAGERS, STAFF AND USERS

The MCT's staff is regularly provided with short refresher courses (especially the ICT trainers). A number of innovative strategies and critical skills have been developed as a result of such training interventions.

The Nakaseke team has also supported the development of telecentres at Buwama and Nabweru, which are supported by IDRC under the Acacia Initiative, and worked closely with two local NGOs (Madi-Okollo in northwest Uganda and Njeru in eastern Uganda) to help start similar initiatives. A number of development groups have also visited the centre with a view to learning from its experiences and establishing such centres in their areas.

PUBLICITY

Publicity is critically important to the MCT project. A year before the launching of the MCT services, an extremely energetic awareness campaign was conducted, involving community leaders and other opinion-shapers and creating focal points and champions within the local communities. This campaign, supported with brochures, posters and

guides in both Luganda and English, generated a lot of interest in the community and provided invaluable feedback to the planning process.

In recognising the potential for interesting possible users by word of mouth and through people familiar with local needs and culture, another top priority was the creation of a core group of ICT users in Nakaseke. The idea was that this group would then interest others in the use of ICT or act as information brokers for those with no capacity to access the ICT services on their own. This approach is seen as critical to helping people use ICT, improving general living conditions in the community, and achieving the sustainability of the MCT.

Contact with the community is today maintained through the Core User Committee and Local Steering Committee. The MCT also maintains a suggestion box for feedback from users.

ACCESS

The MCT is open Mondays to Saturdays from 8:00 a.m. to 6:00 p.m. The community has, however, requested that the hours be extended to 8:30 p.m. on those days, and that Sunday openings be considered as well.

As described above, users are required to register on their first visit and are then able to gain access by using their registration cards on all subsequent visits to the MCT. The value of this automated system lies in its anonymity and simplicity. Earlier attempts to have clients fill in their details on forms for every visit simply met with resistance and scepticism.

TECHNOLOGY

Uganda Telecom provided a special telecommunications link to Nakaseke, waiving the normal requirement for justification in terms of economic potential and financial viability. A number of technology options were experimented with to provide ICT services at Nakaseke. The area had no communication infrastructure and the telephone link had to be extended with copper wire from 16 kilometres away. This line was hooked on a “Pair Gain,” equipment that has the ability to multiply a single line into multiple lines. However, this system became over-strained after several months and collapsed.

An “Amper Licea” on a 13-element Yagi Antenna was later installed. The MCT is in a “pseudo tele-shadow” of the Mobile Telephone Network (MTN) cellular network. The Yagi Antenna amplifies the cell presence and strengthens the signal. This technology, which is still in use today, supports telephone, fax and Internet/e-mail at 9.6 Kbps with considerable success. It has been shown to be a perfect solution for isolated areas with limited cellular presence. Nakaseke MCT was the first institution to use the Amper Licea in Uganda. The Buwama Telecentre has since adopted this technology.



The community is served by a hydroelectric power system that is very erratic and can be off for up to 78 hours in a week. The MCT has a back-up system of four 117A deep-cycle batteries, a battery charger of 70-amp, 24-volt DC and two 500-watt inverters. In the event of power failure, this system provides up to five hours of power, depending on the volume of use. A solar power system is being considered as a better alternative.

The MCT is equipped with eight computers on a LAN, including one Toshiba Satellite 2520. Half of the computers are Pentium IIs, while the others are 486 processors donated by a local NGO-Uganda Connect project. This interesting mix of computer processing speed demonstrates that 486 processors are still very useful in basic computing applications. It also shows that ICTs for rural communities can make use of “laid off” computers with a mix of Pentiums to benefit from applications requiring multimedia capability.

RESEARCH AND EVALUATION

As Heather E. Hudson describes in Chapter 15 of this book, the Pact Institute methodology (Pact Institute 1998; Versel 1999) was used to identify users’ needs and characteristics and the usage patterns in three months of the MCT’s first year of operation. A number of conference and research papers have been written on the Nakaseke MCT, including those by Dahms et al. (1999) and Fuchs (www.futureworks.ca). More documents can be accessed from the MCT’s Web site, www.nakaseke.or.ug.

The MCT has yet to undergo a major summative evaluation. A mid-term evaluation is due at the end of July 2000. However, internal evaluations have been carried out and these have pointed to:

- low usage of the centre by women;
- constraints imposed by the poor telecommunications infrastructure and low bandwidth;
- a demand for local content creation; and
- the very real need to tackle illiteracy in the community.

CONCLUSIONS

The very fact that the MCT was dealing with computers and ICT motivated many members of the community to participate, partly out of curiosity’s sake. However, it also deterred some who looked upon it as too academic an initiative. Localising the ICT applications to a level understandable by all community members — providing telephone access, video shows, and games and sports for young people — helped to sell the idea of the centre.

The MCT is demystifying computers and, by making daily newspapers available, is helping to keep the community up to date with what is going on in the country. Consulting with community leaders and opinion-shapers during the mobilisation process and organising consensus-building local workshops and community meetings also helped to bring the telecentre concept much closer to the beneficiaries. To some extent, it may be said that the MCT has now become mainstream with the general activities and local politics of the community.

The MCT has been positively influenced by:

- the zeal and interest of the local leadership in making the MCT a sustainable reality;
- the fact that it is the only such centre in the whole district, which was a source of pride for the community and gave the MCT a monopoly status;
- the partnerships that have been forged both at local and international level and that have brought in a lot of useful experiences and support; and
- the creativity and dedication of the staff and stakeholders.

The MCT has been constrained by:

- the poor telecommunications infrastructure that has particularly affected the telemedicine and other heavy file transfer applications;
- the erratic electric power supply;
- the high rate of illiteracy in the community; and
- restricted accommodation for facilities.

However, those running the project have been greatly encouraged by the feedback from users. For example, here is what Godfrey Mugabi has to say about the MCT:

I am one of the 20 students who participated in the ICT training of trainers programme during the period March – May 1999. I had never used a computer before, but I had heard a lot about it. I heard that the computer is a very clever machine, all knowing and capable of anything. I had never touched a computer, neither was it anywhere in our community. When the telecentre was launched in March 1999, I was very excited and joined the trainees for a training of trainers course. We were taught how to use computers in a variety of ways like typing letters, making reports, communicating by e-mail/Internet and making Web sites of our own. Fortunately, our trainers used a mix of local language (Luganda) and English, which helped us to understand faster and better. I recall the name given to the mouse, as Kamese because it looks like a small rat that is locally called Kamese. At the end of the second month, we were able to use computers freely and some of us designed simple Web sites.

During June – July 1999 we had our first programme as trainers. We worked with our trainers during the programme and it helped us to fine-tune our new skills. Today, I with three other colleagues have continued with the rest of the community in ICTs. Not only with computers but also other information-related equipment at the telecentre. The biggest challenge we have is the high levels of illiteracy in the community. We still have to translate several things into the local language.

The next few years will undoubtedly witness the establishment of even more telecentres in rural and remote areas of Africa. However, only those centres that are built upon the existing social structures of the communities they serve will be sustainable, both in terms of achieving equal access for remote communities and meeting the challenge of ever-changing technology.

It seems likely that it will take a long time for the private sector to show any interest and roll out ICT services in remote and rural Africa, and that the so-called “high-cost

service areas” will always be left out of the equal access equation. Governments and other agencies need to put in place policies and proactive strategies to stimulate partnerships between public providers, the private sector and the rural communities and to provide technology and locally relevant content and services into the disadvantaged regions. Telecentres, too, will probably need public-private partnership.

Ultimately, however, it will be the applications, the creation and repackaging of knowledge and information that will continue to be the greatest challenge to the relevance and sustainability of telecentres. The technology and infrastructure may be compared to a pipe, and the water running through it to the content and applications in an MCT. Unless the water supply is regular (reliant) and clean (relevant), the residents may never turn on the pipe. Governments need to take the lead in providing public information on the Internet — about taxes, grant schemes, policies, new legislation, people’s rights and so on — to add value to the technology. The Government of South Africa has shown the way in this regard. Content creation in developing countries will always be challenging, given the diversity of the users and their high illiteracy in English, and will require translation of much of the available information.

Some telecentres will only be simple user-pay phone shops. Others will be multipurpose, one-stop centres with a variety of ICT tools and services. On the basis of the Nakaseke experience, it will be important for the telecentres to employ a creative combination of commercial skills to ensure that they are sustainable, profitable, and innovative in developing people-sensitive strategies to reach the un-reached. Those who sponsor and invest in telecentres need to give careful consideration to:

- *User needs and translating these into services and content* — This is a key consideration in determining an appropriate model for a telecentre. It is important at the earliest possible stage to articulate the core service—that which is most critical to the community or will most quickly attract users—and then structure the other services around this.
- *Sustainability* — It is vital to determine at the outset those factors, measured by qualitative and quantitative variables, that will ensure a sustainable service.
- *Resources* — The hardware, software and “humanware” necessary for accomplishing the task must be in place.
- *Strategic partnerships* — These can facilitate networking, content creation, applications and the mobilisation of users.
- *Local champions* — Whether individuals, institutions or both, having these will create the initial impetus and support for the MCT and form an invaluable stakeholder group and initial client base that no “outsiders” can ever achieve.



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