

Uganda School-Based Telecenters: An Approach to Rural Access to ICTs

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The Context

The School-based Telecenter (SBT) approach developed out of a combination of motivational factors. In Uganda's rural communities like most parts of Africa, there is general lack of basic ICT infrastructure. By the end of 1998, Multi-purpose Community Telecenters (MCT) pilot projects had been launched with the support of IDRC/ITU/UNESCO at three different sites in Uganda. The broad mission of the MCTs was to study the efficacy of use of ICTs to promote rural community development.

Early impact assessments and studies about the MCTs indicated steep challenges in management, content generation and sustainability, among others. It had also become clear that ICT community access points were more relevant to the community if the target community was allowed to participate in planning and implementation in appropriate means. Connectivity for MCTs deep in rural areas had by 2000 proved a serious challenge to overcome through ordinary technologies.

In Zimbabwe, the World Links program¹ was at the same time experimenting with another approach -- School-based Telecenters -- with a twin objective of introducing ICTs in the process and delivery of educational content and also providing communities with access to communication facilities and ICT training in the after-school hours, evenings, weekends and holidays. Based on this experience, World Links commissioned the development of a new week-long training program on the Establishment of School-Based Telecenters which it first pilot-tested in February 2001.

The School-Based Telecenters

A national SBT project was formally started in Uganda in September 2001 with a revised week-long training program.

This training, delivered to headmaster representatives from fourteen secondary schools and one national teachers' training college, was partly built on the Zimbabwe experience but also crafted to accommodate a different national setting, local MCT experiences, and an innovative technological pilot opportunity -- a national satellite network to deliver high-speed Internet to schools in peri-urban and rural areas.

The network, established by World Links through support from the Bill and Melinda Gates Foundation, involves fifteen SBTs. Of these, eleven use Very Small Aperture Terminal (VSAT) satellite technology to link to the Internet with at least eight computers on a Local Area Network (LAN). These sites are geographically well distributed around the country in the districts of Jinja, Iganga, Mbale, Soroti, Lira, Arua, Moroto, Hoima, Kabale, Masaka and Luwero. The four other school sites will be connected via spread spectrum technology off the VSAT hub from the school in Jinja.²

The bandwidth (256 Kbps "download"/32 Kbps "upload") on the VSAT is shared among the participating sites and the cost is accordingly shared among the schools with a payment of US \$200 per month. (World Links is contributing the other US\$200 per month per site for a two-year period). The schools raise funds from charging students termly tuition fees and other community user fees. On average, each student pays US \$18 per year. A typical secondary school has between 800 and 1000 students around the year.

The Services and the Clients

Lowering the "student" user cost is one of the principal objectives for establishing a school-based telecenter. These sites will traditionally provide computer and Internet-oriented training and services rather than the basic telephony or other client facilities (e.g., photocopying, fax) featured at most MCTs. The principal differences: the site location within schools, whose fundamental mission is to enhance

educational outcomes, supporting income from government and student fees, and the principle donation of hardware and software by project partners to achieve these goals. The attractiveness of the school-based telecenter model is building upon these foundations -- and then reaping the added benefits: maximizing resource use in after-school hours, greater community-school linkages, additional income to meet recurrent and expansion costs, and the ability to sustainably add further technology-based services over time.

Generally, the computer- and Internet-based services vary depending on the needs and sophistication of the community.

All these telecenters train students and teachers in the use of the computers and Internet supported facilities as tools for learning and teaching. Lango College Telecenter in Lira District and Kigezi High Telecenter in Kabale also receive a number of community users for Internet supported services.

At Duhaga Telecenter of Hoima District, the user records for the last month indicate that there are clients from the community who have used the Internet to search on health, farming and business issues (e.g., rice prices; the area is known for upland rice growing).

Ndejje Secondary Telecenter in Luwero district provides access to community institutions. For example, Ndejje University is one of the principal users. Without a computer lab or Internet access of its own, the university students and lecturers access Internet related services and research at Ndejje Secondary Telecenter.

With their recently established school-based telecenter, many locals consider Moroto High Telecenter the most important communication center in the whole of Karamoja region North East of Uganda. The region is home to the famous native Karamojong nomads, brothers to the Turkana in Northwest Kenya. Government, the NGO community and civil society from within Moroto and as far as Kotido almost 100 Km away use the telecenter.

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In addition to general community users, selected SBTs will pilot high impact knowledge services for specific client groups. These include Telemedicine for the Moroto High Telecenter and E-commerce for Kigezi High Telecenter. The targeted training and product development activities at these sites are part of jointly coordinated pilot projects between the World Bank's Energy for Rural Transformation, World Links, and Knowledge Economy programs.

Management Structure

SchoolNet Uganda, World Links' national operating partner, provides the administration and coordination roles for the nationwide program. A national coordinator, technical coordinator, and the community development and small business specialist are available to provide technical back stopping to the network.

At the school level, every SBT has a local ICT Coordinator who also doubles as a classroom teacher. A few telecenters have ICT Coordinators who are not teaching staff. The role of the coordinators is to oversee the daily operations (both technical and pedagogical) of the Telecenters and keep communication with other partners open at all times.

All SBTs have management committees charged with the task of designing broad program direction. Different users are represented on this committee and particularly teachers, Board of Governors and Parent Teachers Associations (PTAs). The Head teacher is normally an ex-officio to the management committee.

The World Links Organization provides strategic linkages and networking with related initiatives at the international level.

School-based Telecenters have overcome one of the biggest challenges of the Community Telecenters -- administrative stability. The SBTs take advantage of the host schools' administrative detail, which have contributed to sustainability planning.

This approach helps to provide the community with access to ICTs facilities without necessarily carrying directly the total burden of management and operation of the facilities. Instead the community meets the cost indirectly but also collectively through the tuition fees of their children. The host school transfers such fees to the operation of the Telecenter and charges some user fees at the point of service to augment the operational budget.

Achievements

In the five months of implementation (since January 2002), each of the eleven schools in the pilot project have a functional satellite node through which they are accessing the Internet. Additionally, the program has achieved the following:

- The program has received full support from the Ministry of Education that paid duty taxes for the clearance of VSAT and associated software and equipment. The School-based Telecenter directly contributes to the Ministry of Education's ICT Policy for Education that was launched in 2001.
- The head teachers have taken up responsibility to meet the running costs of the program at the Telecenter level. The Boards of Directors of participating schools are supportive of the initiative giving it an opportunity to be mainstreamed.
- All ICT managers/coordinators have been trained in basic business planning, technical management and pedagogical aspects of ICT integration in education.
- Teachers and students in host schools are undergoing IT training in integration of ICT resources in the learning and teaching process with a view of making education more relevant and enterprising. The education community in neighboring schools is benefiting from the same training programs.
- In several communities where there was no communication system to talk of before the SBTs were established now view the facilities as one of the critical elements of the community's development. This is true for Muni NTC Telecenter in Arua district, Moroto High Telecenter in Moroto district, Lango College Telecenter in Lira district, and Duhaga secondary Telecenter in Hoima district. In Lira district local authorities are interested in distributing Internet related services from the Telecenter installation to wider community access.
- Regarding community access to the Telecenter, the IT coordinator at Kigezi High Telecenter, Ms. Gloria Akatukunda reported in April 2002 that "...Our out-of-school market still remains for people who want to send

and receive email although there are some few people who do research..." While in Duhaga, the clients include doctors, nurses, accountants, forest officers, pastors from various churches, students on vacation and farmers.

Challenges

There are several ongoing challenges to the project. These include the following:

- **Lack of reliable electric power** -- Muni NTC and Moroto High Telecenters are located in northern Uganda where electric power distribution is still very limited and is switched on from 7.00 p.m. - 10.00 p.m. These Telecenters can only use fuel generators for power, which is expensive. One possible solution being explored is solar-powered systems for both Telecenters.
- **Adequate Time** - Personnel who double as class teachers manage most of the planning and implementation of the SBTs. This often puts a lot of pressure on them, which can subtract from their traditional teaching loads and leave inadequate time for the effective management of the telecenters in the after-school hours. Further reducing teaching loads and/or underwriting full-time managing staff to alternate between day and after-school use are possible solutions being explored to this problem.
- **Identifying Community Needs** – An early challenge has been fitting relevant services for the community within the context of the school-based Telecenters. World Links and SchoolNet-Uganda staff will continue working with the schools to help them identify client and service opportunities, particularly those unique to their location and communities.

Conclusion

The School-based Telecenter is a potentially strategic initiative that will have an impact on ways of helping the rural communities functionally cross the digital divide. Plans to develop an evaluation framework for the program is underway and very soon the vitality of the program will be confirmed.

¹ World Links is a joint initiative of the World Bank Institute's World Links for Development Program and the World Links non-profit organization (<http://www.worldbank.org/worldlinks> and <http://www.world-links.org>)

² Bloome, Anthony, "Wireless School Internet Connectivity," *TechKnowLogia*, January – March 2002