

## TANZANIA: ICT education project amid rural connectivity challenges

By: Aloyce Menda

Tanzania is a rural country with 80% of population and 70% of able labour force living permanently outside urban areas as peasant farmers. Like most developing countries, the Tanzanian rural masses lack satisfactory social services. For rural connectivity to make a difference in the community, it must be hinged on a social sector that touches on the lives and provides content that is relevant, cost effective and essential to the livelihood of the community. Education is one of essential social services in rural Tanzania, which is deprived of quality infrastructure, human and financial resources.

For instance, many rural schools lack tap water, electricity and basic telephone connections. This impedes the teacher and student's passion to utilize modern technologies necessary in teaching or for practical lessons. The modern Information & Communication Technologies (ICTs) are among the essential tools that most school administrations hesitate to acquire due to lack of electricity and telephone or high costs of connection.

### The development problem/obstacle addressed

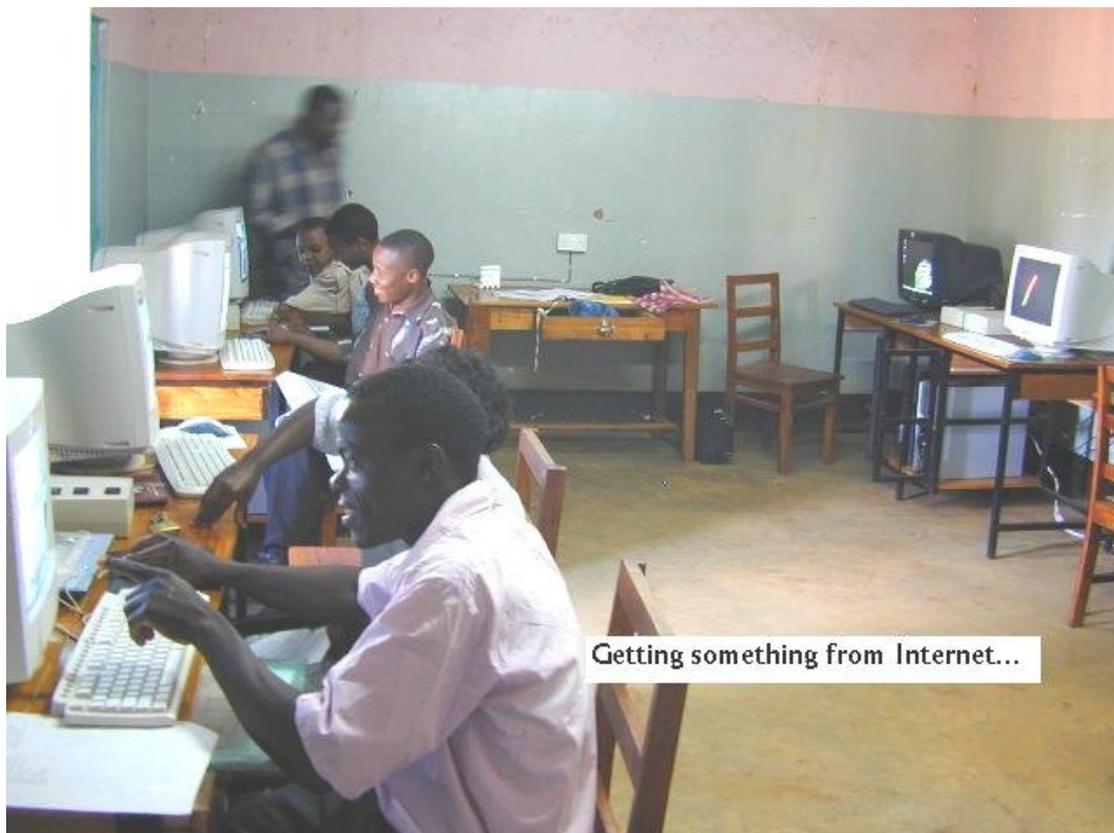
When the Tanzanian Government Ministry of Education and Vocational Training announced its project to adopt ICT as a teaching tool and compulsory subject in all secondary schools, there was no comprehensive study done to verify its practicability despite its acceptability by stakeholders in the education sector. The decision came after a series of stakeholder workshops and the last one was held in January 2005 in which participants strategize on implementation modality. The Swedish International Development Agency (SIDA) has already provided some fund towards implementation of the project.

From May 26 to 27, 2006, a two-day workshop titled Rural Access Points and Connectivity hosted by Sharing With Other People Network (SWOPNet) and supported by the International Institute for Communication and Development (IICD), was held in Dar es Salaam to deliberate on successes and challenges of rural connectivity in Tanzania. The workshop unveiled that practical implementation of the ICT education project is more complex than it was earlier anticipated due to rural connectivity challenges. About half of the 2000 government-registered secondary schools in Tanzania are in rural areas with feeble communication infrastructure.

When officiating the official opening of the workshop, the Tanzanian Government Minister for Infrastructure Development, Hon. Basil Mramba said there is a need for a paradigm shift in the provision of ICT services and especially so, connectivity in rural areas. The minister stressed that those focusing on rural areas need to develop connectivity models that are people centered and relevant to those communities. He assured the gathering that the Government was keen and committed to the establishment of rural tele-centres as one of the ways and

part of the Government effort to help the rural poor and other underserved segments of the population to have access to ICT. By so doing the government aimed at empowering them to meaningfully participate in the current era of globalization and knowledge-based economy.

The May 2006 workshop involved participants managing ICT projects in remote rural areas as well as experts on ICT connectivity and applicability. They narrated in depth the problems and challenges that the rural communities face in initiating and maintaining ICT projects. Edephonc Nfuka, the deputy managing director of the University of Dar es Salaam's Computer Centre (UCC), told the workshop that high costs of Internet connectivity and bandwidth impedes the progress of many ICT projects in rural areas.



Freddy Bohorquez, a connectivity expert from La Paz – Bolivia told the workshop that high costs of rural connectivity is a synonymous challenge in developing world. He said the best option to reduce cost burden is for users to share connection technologies whenever possible. He presented a model of sharing connectivity from a remote rural community centre in Bolivia where four partner projects shares connection technologies worth US\$ 11,100. Each partner contributed US\$ 2,775 to the total investment cost and a monthly fee of US\$ 125 to their service provider. The total cost burden to each partner is lower than what it would have been if each of them had a separate installation. "A single project is unable to cover cost of operation, unless it joined its needs with other local partners to share and lower the cost," concludes Bohorquez in his presentation.

Though the cost sharing model was accepted by all workshop participants, the critical issue remains on how it can be applied to cost-effectively connect all Tanzanian secondary schools under the ICT education project.

## Organizational aspects

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As far as the Tanzanian ICT education project is concerned the project managers can pick a lesson from Bolivia and vivid practical experiences from the operating tele-centres in rural areas of Tanzania. Nfuka cited the rural tele-centres of Sengerema in Mwanza, Dakawa in Morogoro, Ngara Lokole in Kagera, Kasulu in Kigoma and Logoba in Coast Region as learning examples in Tanzania. He said development partners like IICD (International Institute for Communication & Development) have contributed in the establishment of these tele-centres and that Tanzania is among 20 African countries set to gain from the community tele-centre project of the International Telecommunication Union (ITU).

He said currently the Tanzania Telecommunication Company Limited (TTCL) operates a national wide Internet backbone covering 21 regional administrative headquarters of Tanzania Mainland and some administrative district centres. "TTCL is also rolling out CDMA technology," he said adding that currently many other data operators are also extending their VSAT connectivity services and cost effective solutions to remote districts. Nfuka is optimistic that the ICT education project cannot be stalled due to feeble or total lack of cost-effective rural connectivity in Tanzania.

## How to make cost-effective connectivity sharing

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The Bolivian lessons on sharing rural connectivity by Freddy Bohorquez and the practical experiences of tele-centres by Edephone Nfuka can form the knowledge base for the managers of the ICT education project. Selected schools for the ICT education project should form a network to share the bandwidth costs in order to lower connectivity costs and hence enhance project sustainability and prosperity.

## Impact Assessment

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Most stakeholders in the education sector believe the ICT education project will have positive impact as far as quality of education is concerned. However, there are some stakeholders who think ICT training should not be a priority because of poor communication infrastructure in some rural areas. They cite examples of schools that lack adequate text books, desks, libraries and teachers.

## Challenge

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What is worrying some stakeholders particularly the teachers involved and student parents is the source of income to sustain the project infrastructure after donor departure. They refer to a number of previous education projects which have expired shortly after termination of donor support. Other stakeholders particularly equipment dealers think ICT is changing too rapidly to the extent that by the time the project reaches maturity stage new innovations would be in place hence additional costs would be required to adopt and cope with the technological changes accordingly.

## Effects in the institution and/or sector

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According to SIDA the ICT education project will be implemented in schools that will show real demand. According to a senior SIDA official in Dar es Salaam it is a demand-driven project and only those schools that will apply are going to be

considered for funding. Based on that condition communities proximal to the schools and the academic staff should prove to SIDA their ability to utilize the resources to be donated for training as well as economic ventures.

The funded schools will be allowed to open Internet café and charge fees for users from proximal communities. The rural agricultural communities could therefore benefit from the project by gaining access to the Internet and search for lucrative markets hence better prices for their produces.

## Embedding

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Like the tele-centres the successful operation of ICT education project will require knowledge in a number of areas. They include:

- Organizational and financial management
- Technology
- Content creation or assembly
- Developmental needs and resources
- Various models of cooperation need to be developed to share and exchange knowledge in all these areas.
- One possibility is to ensure that all capacity development tools and materials are created as a common good readily available to everybody in the National tele-centre network.
- Materials may be circulated in print such as course manuals, newsletters or in electronic forms as web-publications, mailing lists or e-newsletters.

Quote(s):

“A considerable amount of knowledge is required in rural areas in order to bring about development and poverty reduction. Efforts to get rural people access or construct more relevant knowledge necessary for their development is hampered by

- Limited education and or Illiteracy
- Lack of experience in the mechanics of modern economy”

– Edephonc Nfuka, Deputy Managing Director, UCC.

## Lessons Learned

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General: Lessons learnt from rural tele-centres could assist the managers of the ICT education project to design strategy for solving the problem of high costs in connectivity. As outlined by Nfuka the high cost of bandwidth has been a major challenge facing all tele-centres. To address this, appropriate resource sharing models based on existing and projected demand is worth trying.

The cost could come down if all tele-centres form a consortium and purchases all their capacity requirements together and from a single supplier. Also a consortium could be a stepping stone for knowledge sharing within the tele-centre community and nurturing ground for community based networks. The same experience could be applied by schools expected to benefit from SIDA funds in the ICT education project.

With the expected national fibre optic backbone and marine fibre landing at the Dar es Salaam coast, the International bandwidth prices are expected to fall. But connectivity in itself will not make meaningful change to the community; this must be accompanied with timely and relevant content and as the saying goes...if connectivity is King then content is Queen!

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www.iConnect-online.org is a knowledge sharing platform for Information and Communication Technologies (ICTs) in sustainable development. iConnect draws content from its partners, links resources and expertise and encourages collaboration. For the International Institute for Communication and Development (IICD), the host of iConnect, this is a way to share experiences, lessons learned and ideas, and interact with communities and people with an interest in development and the applications of ICTs. These experiences can lead to a better understanding of the actual benefits of ICTs for Development (ICT4D). The core of iConnect will be a series of locally written articles on the impact and the use of ICTs for development. The articles have a strong focus on fact finding; objective information on ICT4D practices from a southern perspective: Southern content written by Southern people. i4d is the iConnect partner for Asia, and ECA is the iConnect partner for Africa, disseminating the articles to their public.

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