iCONNECT ONLINE
Applying knowledge to development

Experiences in ICT for education, livelihoods and governance in six African countries

The iConnect website and monthly e-Bulletin is a major source for information on the application of knowledge and Information and Communication Technologies (ICTs) in sustainable development.

In 2005, as part of an effort to get more 'southern voices' into the current global discourse on ICT for development, iConnect formed a team of six coordinators in Africa who regularly commission articles by local journalists on the impact and the use of ICTs for development. The articles, written from a southern perspective, appear regularly on the iConnect website in English, French and Spanish. The articles published in this booklet were written by journalists in Burkina Faso, Ghana, Mali, Tanzania, Uganda and Zambia. They document ICT4D experiences in three sectors: education, livelihoods, and governance.

iConnect COLLECTED

Experiences in ICT for education, livelihoods and governance in six African countries

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Foreword

The iConnect website and monthly e-Bulletin is a major source for information on the application of knowledge and Information and Communication Technologies (ICTs) in sustainable development.

iConnect was established in response to a need for sharing experiences and lessons learned, in order to facilitate interaction with communities and people with an interest in development and the applications of ICTs. It is an initiative of the Netherlands-based International Institute for Communication and Development (IICD), supported in part by the Building Communication Opportunities (BCO) initiative. The United Nations Economic Commission for Africa (UNECA) works with IICD, as a longstanding IICD partner, on editorial and dissemination issues in the African component of iConnect. In 2005, as part of an effort to get more 'southern voices' into the current global discourse on ICT for development, iConnect formed a team of six coordinators in Africa who regularly commission articles by local journalists on the impact and the use of ICTs for development. The articles, written from a southern perspective, appear regularly on the iConnect website in English, French and Spanish. The articles published in this booklet were written by journalists in Burkina Faso, Ghana, Mali, Tanzania, Uganda and Zambia. They document ICT4D experiences in three sectors: education, livelihoods, and governance.

This publication aims to make the wealth of knowledge gained through iConnect available to a wider audience. Collectively the articles endeavour to demonstrate actual results experienced from a local perspective. It is hoped that these stories and reports will contribute to the evidence base regarding the real benefits of ICT for Development (ICT4D) and the ways in which new technologies are changing the African communication landscape.

Education

In 2000 world leaders made a commitment to "education for all" by the year 2015. The goal, expressed in the 'Dakar Framework for Action', acknowledges that ICTs "...have great potential for knowledge dissemination, effective learning and the development of more efficient education services. This potential will not be realised unless the new technologies serve rather than drive the implementation of education strategies."

The challenge of the new technologies: education and ICT in Burkina Faso

By Ramata Soré

Numerous challenges confront initiatives to integrate Information and Communication Technologies (ICTs) into the educational system in Burkina Faso. But despite challenges due to poverty, the lack of equipment, and the novelty of ICTs, the new technologies are essential to educating the country's youth. And teachers and pupils alike are enthusiastic about discovering new ways to communicate and to find information.

'ICT becomes a way for students to show their intelligence.'

Surfing youth

'I am very happy that I have discovered how to surf and chat on the Internet with friends in other schools,' says Mathieu Kabré, a pupil at the Marien N'Gouabi de Ouagadougou High School. Kabré can thank the Global Teenager Project (GTP) for his new computer skills. The GTP, established in Burkina in 1999 by the International Institute for Communication and Development (IICD), creates networks between schools located in Switzerland, Benin, Holland, Senegal, Burkina, Madagascar, and other countries. 'The project brings new information and communication technologies to high and middle schools,' explains Adama Traoré, the GTP coordinator for Burkina. 'The pupils have the opportunity to join in online discussions, known as Learning Circles, on a wide range of subjects.'

In 2004, more than a hundred pupils from a dozen Burkina schools met other students online by using email, chat rooms, and other technologies, in the process developing both ICT skills and intercultural knowledge and understanding. 'I have become a computer ace,' says Sara Touré, a pupil at one of the participating schools. 'And when I tell my friends that I know how to surf the Internet, they all want to be like me.' According to Traoré, 'Some former students have become managers or owners of cyber centres. Others have gone on to become computer technicians.' The GTP Learning Circles take place twice a year and last ten weeks each time.

Teaching online

World Links, a World Bank programme established in Burkina in 1997, is also working to integrate ICT in classrooms by means of projects that bring technical supervisors and pupils together. 'The World Links initiatives consist of enabling a group of pupils to search the net to find websites relating to the courses being given in class and which could help them to understand their lessons,' explains Abdoulaye Yatabaré, a teacher who is also Burkina's World Links project coordinator. Currently, twelve schools – in the political capital, Ouagadougou, and financial centre, Bobo-Dioulasso – benefit from the World Links programme.

World Links is working with the Ministry of Higher and Secondary Education and Scientific Research and the General Directorate of Vocational Education to bring ICT skills to students. Since January 2003, World Links Burkina has run a multimedia centre in Ouagadougou, for the use of the twelve thousand pupils from the local primary, junior and high schools.

Prioritising needs

While programs like the GTP and World Links are having an impact in some schools, the vast majority of schools across the country possess neither computer equipment nor Internet connections. The situation is even more dire in schools in the provincial areas, where perhaps twenty schools – out of nearly 450 junior and high schools – have computer equipment. And all too often this equipment consists of only a computer and a printer, and is used only when there is a computer-literate supervisor. Furthermore, this equipment is easily damaged by the heat and dust, and once damaged is difficult to repair. In schools that are so lucky as to have an Internet connection, many have been discouraged by its exorbitant costs or the slowness of the connection.
'I think the Internet offers some advantages. Looking up information and setting up school websites are perhaps the most important benefits. Unfortunately, people think of the Internet as an easy solution for some education problems,' says Patrick Somda. 'We must have priorities. In my class, there are more than 90 pupils, and we don't have teachers for some subjects. What is the fundamental priority between meeting these requirements and installing the Net in all the schools?'

The fundamental evaluation

Introducing ICTs in Burkina's schools will not be easy. It is not enough just to equip the school with computers. If ICTs are to make a difference, they must be integrated into the very heart of teaching, not presented as a subject isolated from the others, and one that very few pupils can take. ICTs have many possible applications: diversifying information sources, teaching languages using real communication situations, increasing the motivation of the pupils, and teaching maths, life sciences and earth sciences by using specialised software. 'It is therefore essential to prepare learning activities that allow skills and know-how to be developed: a critical and analytical approach is needed in order to reflect, learn and evaluate the process,' Traoré stresses. 'Without this evaluation, the training that we are providing loses its impact and importance.'

In sum, Traoré notes, teachers must ensure that ICTs serve a function in school projects, and they must encourage the pupils to question their knowledge. But teachers cannot achieve these goals alone. 'If the structures working at integrating ICTs in teaching do not combine their efforts, our work will be scattered and we will have nothing to contribute. Then, we will all be the losers,' says Yatabaré, who worries that a deluge of field initiatives will diminish skills and distract people interested in using ICTs in teaching. A successful integration of ICTs into Burkina's educational establishments demands that teachers and policy makers join together to thoroughly study pedagogical conditions, approaches and implications. The ICT initiative therefore must be a national one, emanating from the Education Ministry.

Developing skilled human resources: e-learning in Ghana

By George Koomson

Ghana aims to increase its per capita income from its current level of $400 to $1000 per annum within the next 10 to 15 years. An important part of the plan to bring about this development involves turning the country's large youthful population into highly skilled workers and increasing the percentage of the country's key technical and professional manpower. The plans identify e-learning as a cost effective and quick way of achieving these goals.

> 'When young people are empowered, they can do a lot of things.'

Building professional capacities

Among the emerging initiatives being undertaken by private, non-governmental and public agencies to provide educational content through various electronic channels to different demographic groups, the Learning Centre of the Ghana Institute of Management and Public Administration (GIMPA) is one of the most successful.

Since its opening in June 2000, the Learning Centre, based in Accra, the nation's capital, has delivered continuous professional training to public, private and civil society workers through a mix of channels, including video conferencing and the Internet. Professionals in the judiciary, local government and civil services have already undergone capacity-building training at the Centre. Its video conferencing capacity enables course participants to interact with some of the world's top experts. Video-conference training sessions are often held in at least two African countries simultaneously, so that participants can share experiences.

The Centre has been particularly helpful when new concepts or reforms are being introduced. It has run courses aimed at preparing professionals and stakeholders for the liberalisation of telecommunications, democracy and governance; for judicial reform; and for Information and Communication Technology (ICT) governance. It has also offered courses on such issues as public transportation.

The GIMPA Learning Centre is one of fourteen pilot centres around the globe sponsored by the World Bank to provide low-cost capacity-building programmes for professionals in both public and private sectors. Other African countries having such centres include Ethiopia, Uganda, Tanzania, Senegal, Benin, Cote d'Ivoire and Egypt. Some of the programmes run by the Centre are open to the general public, while others are only available to professionals in specific areas. Since its inception, the Centre has provided training to over a million people, according to Attah.

Educating Global Teenagers

While most training programmes at the Learning Centre take place at the GIMPA campus and primarily involve continuous education for professions, another e-learning programme, the Global Teenager Project (GTP), sponsored by the International Institute for Communication and Development (IICD), is running at various primary and secondary schools.

But not all the schools that sign on have Internet links on their premises. Instead, some must arrange alternatives, such as booking commercial Internet café facilities. The low level of telephony penetration in the country has also limited GTP's ability to reach rural areas. Even schools that have Internet access do not always get reliable service, and some complain that the cost of the dial-up connection is too high. GTP has on occasion borne some of the costs for connection, especially when the schools are in low-income areas. Other organisations, such as district assemblies, have also helped by providing free computers to some schools.

Despite the challenges, Malcolm says GTP has achieved more than originally envisaged. 'The programme has enabled children to use different software and to improve their research capacities, and has provided them with extra materials for their studies,' he says. The programme is also a form of intercultural exchange, as Ghanaian school children are able to interact with children in other countries, he points out. Furthermore, while the GTP is intended for school children, some teachers have also used the programmes to acquire computer skills. 'And school administrators have taken advantage of the programme to acquire database management skills, which is helping them to manage their work better,' he adds.

Some schools have also formally integrated the Learning Circles into their curriculum, while a number of participants have become adept in web development and have even won international awards for their work. 'This project has taught me that when young people are empowered, they can do a lot of things,' says Malcolm.

Distance Learning

By far the most ambitious e-leaning programme underway in Ghana is the President's Special Initiative on Distance Learning (PSI-DL). Launched on April 30, 2002 to 'demonstrate how an open college system bolstered by ICT would work throughout the nation,' the initiative, which comprises three phases, is about to enter its second phase.

The first phase focused on delivering English and Mathematic lessons to Junior Secondary Students during school hours on national television. The government chose to use television as the mode of delivery for the first phase because studies have shown it to be the most cost-effective way of delivering lessons to the widest number of pupils, explains Kwarteng.

The second phase, expected to start before the end of 2005, will involve using radio, television and the Internet to deliver vocational, technical and teacher training education. The third phase, focused on the teaching of English and mathematics, is slated to begin next year. In the meantime, Kwarteng notes the current successes with some satisfaction. 'The programmes have been very beneficial for students who had to rewrite their examinations,' she says. And teachers have written to commend her outfit for helping them to improve upon their teaching.

Eradicating the digital divide: ICTs and education in Mali

By Moussa Bolly

In Mali, people are searching for ways to turn computers into efficient pedagogical tools. While progress is slow at the national level, private initiatives are constantly exploring this field with greater or lesser success. And the experiment currently underway at Bamako's 'Les Petits Saints' (The Little Saints) elementary school is certainly one of the most promising.

> 'The impact of this computer training initiation is clear.'

Everything about 'Les Petits Saints' elementary school reflects the desire of the teachers to turn their protégés into Mali's future leaders. The pre-school and primary teaching establishment is distinguished by its improvised computer room. Children are fascinated by the computers, and under the supervision of a technician, they learn to use the screen as a blackboard on which the 26 letters of the alphabet march by.

'The society of the future results from the teaching given to children today. Therefore, we have to do everything possible so that children can have access to real teaching from when they are very young, in order to ensure they develop quickly and healthily,' declares Reverend Mahamadou Traoré, the Pastor of the Bethel Evangelical Church, who runs Les Petits Saints with his wife, Sarah. The initiation to computers begins during the last year of pre-school when the children are around five years old.

Solving the mystery

'The computer is often very mysterious for children. We have to solve that mystery by showing them what a computer is and how it can help them with their learning,' stresses the Pastor. The introduction to computers was included in the school's teaching programme when it opened in 2001.

'We organised the children into groups and took them to the Internet café to start using computers. That was very expensive, as we couldn't pass on the cost in the monthly fees,' says Sarah Traoré, who originally trained as a lawyer.

Enter the SchoolNet project, which provided the school with approximately twenty computers. SchoolNet, with the backing of silent partners such as the US Aid Department (USAID), has trained Mr. Traoré and provided a technician in charge of introducing the children to the computers.

An adapted introduction
Every care is taken to ensure that pupils receive computer training in line with their abilities. And the impact of this initiation is clear. According to the Inspector of the Pedagogic Activities Centre (CAP), 'These children are brighter than the majority of other children of the same age who have not had this privilege. It is therefore desirable that this experiment be extended to other establishments.'

But the Traorés have ambitious plans to turn their establishment into a laboratory investigating the use of the ICTs in schools and exploring how they can use ICTs to improve the quality of teaching in Mali. 'We are setting up a real computer room. Once it is finished, we are going to get an Internet connection that will allow the children to take advantage of the worldwide web to learn more about everything we teach them in class,' enthuses Sarah. Her husband adds, 'We are also looking into software that we will help us to eventually teach subjects such as maths, natural sciences, and others.'

New challenges
If schools are an ideal way of popularising ICTs in order to reduce the digital divide between the North and South, these ICTs can also be an effective and efficient pedagogical tool for education in African countries. As a result, both public and private players in the education field are developing a synergy of action in order to bring more structure to the teaching or introduction of the ICTs.

'At the level of the Ministry of National Education, there is no long-term programme for the teaching of the ICTs which would be transformed into specific subjects at elementary and secondary levels,' says Ousmane Berthé, the author of a report entitled 'Mali's ICT Training System.' The general belief is that the private education sector seems to be leading the way.

The State hopes to organise the field by setting up a development strategy for ICTs in schools, together with a mechanism to monitor and reliably assess their impact. These issues are addressed in 'Politique et Plan stratégiques TIC' ('ICT Strategic Plan and Policy'), a document validated during a national workshop in September 2004 (but still to be adopted by the government). This plan aims to introduce ICTs as pedagogical training and learning tools in order to narrow the digital breach at all levels, and to integrate ICTs into both formal and informal education programmes, as well as at the levels of research and school administration.

To meet this objective, ICT materials and connections must be established at a range of teaching establishments. Information and awareness-raising programme on the use of ICTs must be formulated, and schools, training centres and specialist institutes must be created. Preparing appropriate curriculum and pedagogical tools for ICTs is another core feature of this national structure, whose implementation has been entrusted to the AGETIC in partnership with the Ministry of National Education. All stakeholders acknowledge that these actions are fundamental to ensuring that ICTs are organised in the schools. And all believe in the importance of a national education policy that will help Mali eradicate the digital divide.

Bringing Kiswahili to the internet: ICT and education in Tanzania

By Aloyce Menda

Over the past twelve months, Tanzanian educators have become very much aware of the benefits of Information and Communication Technologies (ICTs). But, despite the reported rapid adoption of ICT into administration, education and several sectors of the economy, the greatest challenge still remains: demystifying ICTs to appeal to the majority of the people who still view them as tools designed for the minority elite.

> 'To address the cost challenge, the use of open source has been suggested.'

Addressing the language challenge

Language is a central issue. Kiswahili is spoken by over 80 million people in east and central Africa, making it one of the most widely spoken languages in sub-Saharan Africa. Students in Tanzania and Kenya are taught Kiswahili as a subject in schools, and it is arguably the region's richest language in terms of culture, semantics and phonology. Yet efforts have only just begun to make Kiswahili 'internet and ICT ready' for the benefit of the community that speaks it. The ease with which Kiswahili fits with ICTs will have a direct impact on the development of ICTs in Tanzania's education sector.

Experts argue that language and cost are the most prominent inhibitors to the use of ICTs in Tanzania's education system. For instance, rolling out a network for all secondary schools in the country would require an enormous investment in infrastructure and software. To address this cost challenge, several alternative models have been suggested, including the use of open source and so-called 'thin clients,' which are basically low-specification computers dependent on a much stronger server.

And to take on the language challenge, academics at the University of Dar es Salaam and officials at the Tanzania Commission for Science and Technology (COSTECH) have formed the Open Kiswahili Localisation Team – also known as KiliNux, from 'Kiswahili' and 'Linux' – aimed at bringing Kiswahili to the Internet as a strategy for demystifying ICTs. Early this year, the team presented their first edition of a Kiswahili spellchecker (www.o.ne.tz/spellchecker) that works natively with Jambo OpenOffice.org.

The spellchecker has been developed as the result of the compilation of numerous Kiswahili word lists. Jambo Spellchecker contains a total of 70,000 Kiswahili words and is released as free software.

The future of ICT in secondary schools

The Tanzanian Ministry of Education and Culture (MoEC) unveiled its project for compulsory ICT training in secondary schools during a stakeholder workshop entitled 'The Future of ICT in Secondary Schools – Strategising for Implementation,' sponsored by the Swedish International Development Agency (SIDA) and held in Dar es Salaam early in 2005. The workshop gathered participants from a broad spectrum of ICT stakeholders in Tanzania, including eighteen students from five secondary schools in Dar es Salaam, and provided a platform for developing an implementation strategy.

Some participants questioned the wisdom of adopting ICT in English, especially as the majority of the country's population can only speak, read or write in Kiswahili. 'How can ICT bring about rapid development in Tanzania by being adopted in our secondary schools, if most of the content is English, a language still considered foreign?,' one workshop participant demanded. Currently, about 70 per cent of all Internet content is in English; a mere twelve out of the world's 6,000 or so languages account for about 98 per cent of the total web content. The Kiswahili language, which constitutes over 80 per cent of the local media content in Tanzania, is not among these twelve. In other words, Kiswahili is among more than 5,900 world languages that constitute only two per cent of the Internet's content. As over 95 percent of the Tanzania population can only speak, read and write in Kiswahili or tribal languages, they are unlikely to comprehend most of the content on the Internet even if they get access to it.

Low secondary-school attendance also poses a problem. 'How can ICT develop Tanzania if it is adopted in English in secondary education, and when less than 12 per cent of the primary students proceed to secondary schools?,' asked a participant. According to official government statistics, the Tanzania's gross enrolment levels for secondary education are among the lowest in the world, although the ratio is improving.

One proposal emerging from the workshop suggested that the Tanzania Institute of Education (TIE), the governmental agency responsible for curriculum development, start preparing Kiswahili content in anticipation of the adoption of ICTs for education. This, the workshop recommended, should be done at both the learning medium level and the 'ICT as subject' level.

In closing the workshop, Bujiku Sakila, the Deputy Minister of Education and Culture, announced that his ministry has devised a plan to introduce ICT in teachers' colleges. The objective, he explained, was to help tutors in teachers' colleges become computer-literate as a pre-condition for implementing ICTs as a teaching and learning tool, and he also called for assistance in the implementation of ICTs in both teachers' colleges and secondary schools.

Vision 2025: The future of Tanzania
Recently the government placed ICT among development priorities in the Tanzanian Vision 2025 document, a compass of the national development plan to 2025 which is compatible with the UNDP's Millennium Development Goals. The inclusion of ICT in Vision 2025 follows two critical government initiatives – the decision to reduce taxation on computer imports and, in 2003, to adopt a National ICT Policy emphasising ICT applications in all sectors of the economy – which are responsible for the recent rapid growth of the ICT sector.

The Uconnect school project and SchoolNet Uganda

By John Eremu

Yvonne of Uganda Martyrs Secondary School Namugongo smiles as information on the 2002/2003 household survey unfolds on the computer screen in front of her. Her colleagues are also glued to their computers as they take advantage of the information super highway over the lunch break. At Kaberamaido Secondary School, a rural school 450 kilometers east of the capital Kampala, the story is different. The students are gathered under trees to gossip the lunch break away on typical afternoons. Their school has not a single computer.

> 'Extending Internet connectivity may address the rural-urban imbalance in academic performance.'

The digital divide between Uganda's urban and rural schools is growing. And while the benefits of Information and Communications Technology (ICT) are enormous and schools could be the launching pad to a computer literate society, Uganda is still without a formal ICT policy, and thus risks missing the advantages offered by the technology. The country's would-be policy outlines an ambitious programme of ICT connectivity in schools. But colossal amounts of money are required for capital investment, and the policy has remained in draft form since 1997.

Although Uganda's school curriculum has an ICT component, it is not yet examinable, and students concentrate on subjects that are assessed in the national examinations. According to Albert Byamugisha, assistant commissioner for planning in the Ministry of Education and Sports, the Ministry is currently trying to establish a wide area network (WAN). If the ICT policy is approved, it will be rolled out in phases, starting with schools on the national electricity distribution grid. Nevertheless, several initiatives are already seeking to make ICT available to schools. Most notable are the Uconnect and SchoolNet projects, both implemented within the Ministry of Education and Sport's ICT framework.

The Uconnect school project – building an education network

The Uconnect project was incorporated in Uganda as a non-governmental organisation in 1996 to advance public education in Uganda by using ICTs, as well as to improve the quality and efficiency of communications. According to the project's coordinator, Joan Amaniyo, Uconnect has to date connected 64 secondary schools, the majority of them urban-based, to the Internet; as many as 145 have applied to join the project and another 28 have made initial contact. In addition, 34 primary schools have been hooked to the worldwide web through the project, while 75 have applied to join and an additional 15 have made contact.

Uconnect also trains teachers and managers in the use of communications software, especially e-mail and the World Wide Web, not only for education but also for health, agriculture and other sectors. In addition, Uconnect has developed services to deliver educational resources to schools According to Moses Abilli, the project's Systems Administrator, students and teachers can gain access to a range of educational resources online. Web content can be tailored to meet the individual needs of a particular student or the group needs of the entire student population.

SchoolNet Uganda – connecting educational constituencies

SchoolNet Uganda, incorporated as an NGO in December 2003, is a national network of professional educators and schools who aim to transform the Ugandan educational system and to prepare the youth of Uganda to enter a global economy based on knowledge, information and technology. SchoolNet Uganda works with educational institutions to establish ICT facilities and to develop the technical and pedagogical capacity necessary to use ICTs in schools. To date, the project has a membership of 42 secondary schools spread across the country, but is mainly urban-based. It also nurtures ICT talents through ICT holiday camps and website development competitions, and it encourages and assists users in creating local content. In the future, the organisation plans to expand to more rural schools and to establish a computer refurbishment and assembling center.

Currently, SchoolNet Uganda is involved in the Very Small Aperture Terminal (VSAT) Pilot Project, part of an on-going international initiative by the World Links Program to explore new concepts in technology and pedagogy to integrate ICT in education in developing countries. The pilot involves connecting rural schools to the Internet using VSAT (earth-satellite) technology, and represents the first ever satellite-based school connectivity in Africa.

Challenges to connectivity

Although the Uganda telecommunication sector was liberalised in 1996 and the Uganda Communications Commission (UCC) established in 1997 to spearhead the development of the telecom industry, less than one percent of Uganda's 26 million population has access to the Internet or ICT services. Uganda has 13,353 primary and 2,070 secondary schools, but only 106 secondary schools have been connected to the Internet through the Uconnect and SchoolNet projects. And while the two organisations have taken the ICT initiative to the rural communities through telecentres, services are still clustered in major urban centers such as Kampala, Mbarara, Masaka, Jinja, Mbale, Soroti, and Gulu. The low level of Internet connectivity in Ugandan schools is due to the overall poor communications infrastructure, a limited electricity distribution grid, and the high capital costs involved in setting up a computer laboratory.

For a school to benefit from either Uconnect or SchoolNet project, it needs a telephone line in the computer lab. Until recently, Uganda had only one fixed line national telephone operator, with a very poor and dilapidated network. This denied many rural schools a chance to obtain Internet services. Today, while other operators with more advanced systems have somewhat alleviated the problem of limited network coverage, these resources remain very costly for an average rural school.

On the other hand, most of the schools involved in the VSAT project are located in rural communities, and their monthly bandwidth expenses run at a relatively low $200. The National Curriculum Development Centre, through its Curriculum-Net project, intends to make various educational resources available online, and the VSAT Project enables the rural schools to access these materials. The VSAT sites can also act as information centers, through which the Ministry of Education can send circulars to schools and receive feedback, thus increasing institutional efficiency, which depends heavily on the capacity to communicate accurately and rapidly at a minimal cost. Ultimately, extending Internet connectivity to less advantaged schools may do much to address the current rural-urban imbalance in academic performance.

Building a future:
e-learning in Zambia

By Kabukabu Mambwe

Information and Communication Technologies (ICTs) play a key role in shaping social and economic development, but the technical complexity demanded by ICT tools has created a digital divide between the developed countries and the third world nations. In Zambia, the Global Teenager Project is helping students become fluent users of these technologies.

> 'We have been exposed to traditions and cultures in different countries and their environments.'

Creating opportunities: the Global Teenager Project

The key to bringing Zambia into the digital age lies in educating people to use and understand the basic ICT tools. The Global Teenager Project (GTP), launched in 1999 by the International Institute for Communication and Development (IICD), has enabled Zambian schools to bring the full potential of ICTs into the classroom. The Project imparts ICT and learning skills to secondary school pupils, at the same time increasing their understanding of other cultures by staging lively, global debates in cyberspace.

'The GTP unit on culture has been very interesting,' notes Bridget Walubita, a teacher at the privately-owned Bedsfield School. 'Discussion has ranged everywhere, with students talking about ways of managing education, looking at how culture has influenced their education, and even discussing whether students are allowed to wear trousers at school, to treat their hair, or to paint their nails.' Since her school joined in 2003, GTP has helped Walubita and her pupils to acquire ICT skills.

Twice a year, classes from different schools link via email to form 'Learning Circles,' the core activity of the Global Teenager Project. Learning Circles are web-based, virtual environments for intercultural exchange, and they provide a safe, dynamic and fun environment for GTP's educational programme.

For a ten-week period students discuss a theme of their choice – selecting from a shortlist of fourteen subjects, including health, culture, the environment, human rights, and globalisation – and the outcomes of their discussions are posted on the Virtual Campus, a site where students can exchange knowledge. The GTP workshop assists schools participating in the Learning Circle to understand the role of ICTs and to enable them to share their information with the growing network.

The project has eight participating schools, all in the capital city of Lusaka, but Mumbi Mwape, the GTP Country Coordinator for Zambia, notes that there is room to expand it to other provinces after learning from the experiences in Lusaka.

Teachers' evaluations: good grades for GTP

'The project has certainly increased ICT awareness among the pupils,' says Musonda Sakala, a teacher at Rhodes Park School, a privately owned school with 24-hour Internet access. The school has even introduced French in the Learning Circle so that pupils can participate with others in countries in Francophone countries.

At Lake Road PTA School, meanwhile, thirteen pupils participate in the GTP Learning Circle. The School, which joined the Project in 2004, has only 10 working computers, which are shared among 800 pupils. Teacher-in-Charge Robby Mukwato says the programmes are invaluable to both teachers and students, who have participated in topics such as culture and dance. However, he notes, school administration allows only one hour of Internet time to communicate to other participating schools. 'We had to go to Internet cafés to complete our work. One hour is not enough time,' he says.

Matero Girls High School, which joined GTP in 2002, has 14 computers, but rarely are all of them working. Still, GTP is a boon to the school. 'We are learning a lot which we can use,' says Teacher-in-Charge Rose Banda. 'The communication aspect of it is really working well. Students are gaining ICT skills, researching, surfing the Internet, and chatting with pupils at other schools.'

The student verdict: better access needed

But those who do participate praise the experience. 'I met a lot of friends through the Internet,' says Chinga Zulu, a recent graduate from Chongwe High School. 'I now know that some countries have similar traditions and cultures, and that HIV/AIDS is a global problem. And this is just part of what I learned,' he says. Unfortunately, access was a challenge to participating in the project. 'We never had the opportunity to be in the chat room,' he says. 'In our group only one person had the chance to send e-mails. And this opportunity occurred once in every two weeks.'

Cletus Sikwanda, another student from Chongwe High School, has participated in GTP since February 2002. 'We have been exposed to different traditions and cultures in different countries and their environments, and some of the former GTP students have been able to find employment owing to the skills they acquired from the Learning Cycle,' he says. But, like Zulu, he cites the lack of connectivity as a major problem that the school has been experiencing since 2003. When the project started, the school relied mainly on their co-ordinator from Microlink for sending and receiving e-mails and other Learning Circle news. 'Every time we wanted to send e-mails, we had to travel 45 km and some activities of the Circle – like the chat session – failed to take place because the school could not afford to transport us to and fro,' he says. Sikwanda also notes that the Learning Circle timetable occasionally clashed with the school calendar, as the Learning Circle would continue even on school holidays.

Zambia has yet to realise much of the potential of ICTs, but its draft ICT policy has placed priority upon achieving universal access by 2010. This ambitious goal hopes to ensure adequate, reliable connections to information and knowledge networks, so that the country will become a full participant in the global village. The GTP project brings hope for ICT development among students, creating a foundation upon which Zambia can build its development strategies.

Livelihoods

Livelihoods projects explore the potential of ICTs to provide business opportunities and to improve individual economic standards. Livelihood projects in rural areas often focus on agriculture where urban projects are more likely to focus on eBusiness. "Livelihood comprises people, their capabilities and their means of living, including food, income and assets. Tangible assets are resources and stores, and intangible assets are claims and access."
(Chambers and Conway, 1991)

Increasing exports through e-commerce in Burkina Faso

By Ramata Soré

In Burkina Faso, where e-commerce is still in its early stages, there are nevertheless enthusiastic supporters selling everything from dried fruit to traditional masks to customers around the world. The Internet has opened global markets to large numbers of Burkina Faso companies and merchants in the land of *'les hommes intègres'* (the honest people) as the Burkinabè are known.

> 'I don't need to travel around the world any more, with my masks and statues under my arm.'

Early adopters

'We were one of the first organisations, in 1998 and 1999, to use the Internet to find customers in order to sell our products in Europe,' states Charles Yvon Tougouma, coordinator of the Cercle des Sécheurs (CDS), distributors of dried fruit and vegetables such as mangoes, tomatoes and onions. Electronic commerce or e-commerce provides the means of buying or selling Burkina Faso products such as sesame, karité butter, gum arabic and cotton, etc. without leaving your home or office, thanks to the Internet. It has certainly opened new markets for large numbers of Burkina Faso companies and merchants.

'I am keeping up with the world in selling my masks and bronze statuettes over the Internet. My customers contact me by email. I don't need to travel around the world any more, with my masks and statues under my arm. That means tremendous savings in the cost of airplane tickets and telephone charges,' remarks Alphonse Ouédraogo, who owner of a Ouagadougou art gallery bearing his name. He is in touch with buyers in France, Italy, Switzerland, the United States and Denmark.

Ouédraogo first learned about e-commerce in 2001 from Trade Point Burkina. Since then, it has become his preferred way of doing business. Trade Point Burkina is a commercial information centre that provides information to traders about niche markets, potential customers and suppliers, supply and demand for products, business opportunities and the rules and conditions for trading, according to its Director Benjamin Baguian.

Internet trading enables e-business people to reach out to a large number of customers. The Internet multiplies the number of potential buyers, and enables many other customers to access a virtual market. In offering their products to richer markets through the wide reach of the Web, sellers have full scope to negotiate the best price for their products. This possibility led Boubacar Kouraogo, an oilcloth dealer who was looking for PVC tubing, to contact Trade Point Burkina. 'I was looking for the addresses of foreign suppliers and contacts to import tubing. I had heard that the Internet was effective and gave access to the whole world.'

All sectors of creative activity and production are open to electronic commerce, from the artisans who sell their creations or products, to large businesses. But while some merchants have found e-commerce to be a blessing, others see the Internet as mere hype and remain sceptical about using the Web for transactions. The main criticism: customers are used to sampling a product, to see, feel, taste or handle it before buying, which is not possible if you are buying online. When it comes to dried fruit, the CDS coordinator's answer is simple: 'One can always send samples to buyers.'

Profits from e-commerce

Being self-taught in terms of e-business, the CDS uses search engines such as Google or Yahoo to find its customers. Since 1999 this method enabled them to attract countless clients from Europe and America. Their market continues to grow. 'Our exports have increased by about 30%. At present, we are in negotiations with the American market and if it succeeds, our export rate will increase 100%. When we started on the Internet, we went from 200 million to 300 million CFA francs. In 2005, we hope to reach 600 million CFA francs,' observes Charles Yvon Tougouma of CDS.

Gallery owner Alphonse Ouédraogo attributes much of his success to e-commerce: 'My business income is growing. In 2000, before I began to use the Internet, I had revenues of 13,852,655 CFA francs; in 2001 that was 49,912,153, and in 2004, my sales were 30,330,137 CFA francs. This year, I expect to do better. I have six permanent employees and 10 part-time. With my profits, I have been able to build and enlarge my gallery. My investment to date is about 49 million CFA francs. I have also bought a delivery vehicle.' In addition to its financial benefits, the speed of using the Internet for commercial activity also saves time for businesses and reduces costs. 'Compare the speed and cost of sending documents by mail or by fax. With the Internet, we can send a large amount of information; our correspondent receives it very quickly and can reply immediately. It costs less too. Savings in time also mean financial gains,' according to Baguian of Trade Point Burkina.

Strengthening the agriculture sector

A tool of transparency, the Internet enables CDS, and its members located in the different provinces of Burkina, to communicate quickly and exchange documents concerning specific orders. In fact, many of the suppliers are located in areas that are not well served by regular mail and would not otherwise receive useful information on a timely basis. So, use of the Internet for internal communication strengthens the network of small agricultural producers and enables small farmers to find global markets for their products.

While there are advantages to using the Internet for commercial activities, creating a presence on the world screen is a huge investment for small businesspeople in a country like Burkina Faso. To create a virtual boutique, advertise products and sell them on the Internet involves enormous costs. Trade Point Burkina offers website creation and hosting services to its clients at a cost of 250,000 CFA francs. Websites that include a database cost 1,500,000 CFA francs.

Poor financial and communications infrastructure

The slow development of e-commerce in Burkina hinders efficient use of this tool by those who have seized the opportunity. In terms of financial transactions, it is not possible to pay a Burkinabè merchant by credit card. 'We still receive payment in the form of bank drafts,' says the CDS director.

Online payment services do not exist in Burkina. Also lacking are quality of service, protection of personal information and transparency of trade practices. In Europe and in the United States, the use of credit cards as a means of payment over the Internet is in decline. Ever more secure payment methods, such as electronic transfers, cell phone payment and micro-payment by means of an electronic wallet are being developed. In the global trading village, Burkina Faso cannot afford to be left behind.

Information intermediaries for agricultural livelihoods in Ghana

By John Yarney

The Agona Swedru Agricultural Information Centre and Radio Peace are information intermediaries that the Ghana National Agricultural Information Network System (GAINS) has selected to disseminate research findings to farmers in the Central Region of Ghana. John Yarney explores the impact on local communities.

> 'The fundamental problem for most of the villagers is... of being price takers rather than price makers.

From brochure to brochette

All three children of Ghanaian farmer Osei Kwabiah Amanfi have their school fees paid for thanks to the revenue provided by his grasscutter husbandry project.
The grasscutter is a fat, furry animal whose natural habitat is the tall grassland of the guinea savannah. Its meat is well loved by people in Ghana and many other African countries. Using simple and low-cost techniques the animal can be bred and raised in captivity and provides a valuable source of protein in the household diet as well as additional revenue.

Amanfi was introduced to his new pet project by chance. He had been visiting the Agona Swedru Agricultural Information Centre, a collaborative project between Ghana's Ministry of Agriculture and the International Institute for Communication

and Development (IICD), when he saw a brochure about grasscutter rearing prepared by the Centre. He decided to try it out with the encouragement of the staff of the Centre.

Linking national and local information systems

The Agona Swedru Agricultural Information Centre, where Amanfi picked up the grasscutter brochure, and the Winneba based community radio station, Radio Peace, are two information intermediaries that the Ghana National Agricultural Information Network system (GAINS) has selected to disseminate research findings to farmers.

GAINS is the library and information system component of the government of Ghana/ World Bank supported National Agricultural Research Project (NARP) and links the libraries of all the agricultural research institutions under the CSIR, the faculties of agricultural libraries of the universities, the library of Biotechnology and Nuclear Agricultural Research Institute (BNARI) and the Ministry of Food and Agriculture (MOFA). The network was established to strengthen the information infrastructure to support agricultural research management which will eventually lead to increased production.

Impacts

According to Joel Sam, coordinator of GAINS, there have been many positive outcomes from the network. Researchers who access the network, for instance, have access to current information in their field and have been able to generate research that will impact positively on the country's agriculture.

According to Emmanuel Osei-Bonsu, Principal technical officer of the Centre, between 6 to 20 farmers come to the Centre weekly to be trained in cultivation practices, especially those related to citrus. A group of physically challenged people from the area went through training in mushroom cultivation and won the district's farmers award last year in the non-traditional crop category.

But the farmers have more specific information needs, mainly for strategic business information. According to Osei-Bonsu, between 25 and 30 farmers come to the Centre weekly requesting information on product specifications on the international market, before they go into production. They also request information on how they can market their produce.

Research findings from a neighbouring community

The creative use of information intermediaries to satisfy the information needs of farmers in the vicinity of Agona Swedru is contrasted with what happens in another agricultural town in the same region, Twifo Praso. Twifo Praso, 70 km north of the regional capital Cape Coast, is typical of many of Ghana's agricultural towns, characterised by smallholdings of cocoa or oil palm land, mixed with vegetable crops.

Two villages near Twifo Praso were the focus of a two-year research project on ICTs and poverty reduction, funded by DFID and based at the London School of Political Science. According to the researchers, Slater and Kwami, the creative use of ICTs can impact positively on the residents of communities whose livelihood is at a subsistence level, with seasonal inflows of cash at harvest times, oscillating with periods of high debt and lack of cash. Daily life is sustained through household vegetable production supplemented by weekly marketing of small surpluses.

The researchers identify two information needs of the farming community which ICTs might play an important role in filling. The first is the commonly expressed need for market price information. At present this information is collected but not made public, and most knowledge of market prices is conveyed by word of mouth.

The second major issue, according to the researchers, is that agricultural development depends on retaining more value-added processes in the locality, through increased processing of raw materials by local people. They observe that, although agricultural development is obviously a hugely complex issue involving problems of technical knowledge, organisation, capital, coordination, marketing and so on, ICTs may enter into the process in a range of ways.

Slater and Kwami: 'we have to look at ICTs not simply in terms of broadcasting information but rather in terms of an integrated media and transport system in which people can act more effectively in their best interests.'

Mamadou Kéita, e-commerce pioneer

By Almahady Moustapha Cissé

The owner of Galerie Indigo, Mr. Mamadou Léo Kéita, is one of Mali's e-commerce pioneers. He remotely managed a successful art and crafts business in the USA from his home in Bamako, and he has built up a successful business exporting African art and craft to customers around the world. Almahady Moustapha Cissé explains how he did it and explores some of the policy challenges that hinder the development of e-commerce in Mali.

> 'The arrival of the Internet was a great relief … e-mails were much more immediate than a fax.'

A difficult beginning

In the space of a few years, the Galerie Indigo, located in the centre of the city of Bamako, has become a must-visit location for art lovers. The promoter's goal is to turn his gallery into a window on African Art and expression. His target audience is made up of tourists, expatriates and Mali residents living abroad.

Like most successful entrepreneurs, Mamadou Léo Kéita is independent and unafraid of risk. 'After working for other people for many years,' he said, 'I decided to go into business for myself.' Kéita overcame obstacles of capitalisation, poor elecommunications infrastructure and a policy vacuum around e-commerce to build up a successful art and craft export business in one of the world's poorest countries.

Kéita started from next to nothing in 1992, by carrying out his own feasibility study of the project. Based on the study, a bank agreed to lend him six million CFA francs, provided that he personally provided some two million CFA francs. Kéita could only come up with some 600,000 CFA francs in cash. The balance of his investment took the form of works of art. 'The lack of fresh capital made the start-up very difficult because the business needed operating capital,' said Mr. Kéita.

Breakthrough with ICT

The gallery opened for business in February 1992. But, says Kéita, for the first four to six months there were no customers. The early years were difficult. The real turning point came in 1997, when the Internet arrived in Mali. Kéita realised immediately the potential of this new tool for enhancing the export part of his business. 'The arrival of the Internet was a great relief … e-mails were much more immediate than a fax.'

In the same year, Kéita was invited to exhibit his collection in Indiana, in the United States. After the exhibit closed he had the brilliant idea of creating a boutique in Indiana which he stocked with articles from the exhibition. The boutique, Indigo Indiana, became a showcase where US customers could see and feel the items before purchasing them via e-commerce from Kéita back in Bamako. 'I had my customers whom I was able to deal with from Bamako thanks to the Internet. Better still, with my electronic banking card, I was able to collect my money at the bank window.' The experiment lasted until 2003, but sales declined after September 11, 2001, which dealt a blow to the market. 'After September 11, there were difficult times,' says Kéita. Regardless, the Bamako-based Galerie Indigo is thriving thanks to e-commerce-assisted exports. In the space of a few years, the Galerie Indigo, located in the centre of the city of Bamako, has become a must-visit location for art lovers.

Impacts

Galerie Indigo's success in one of the world's poorest and least 'e-ready' countries can set the example for other e-commerce entrepreneurs. But the real impact of businesses like his may be to raise awareness of Mali's rich cultural and artistic heritage. Kéita's goal is to turn his gallery into a window on African art and expression.

Galerie Indigo in 1999 generated US$ 48,000 in revenues, US$29,000 of which was derived from exports, and five times more than its original capital investment. Galerie Indigo has gradually penetrated overseas markets and now sells to clients in many countries of Europe, South America, and North America. At the same time, Kéita has expanded his network of suppliers to include artisans in Ivory Coast and Burkina Faso as well as Mali.

In addition to generating revenue for hundreds of traditional artisans in three countries, the gallery in Bamako now employs a permanent staff of eight, including two receptionists. The business also includes a workshop located in another part of the city, which employs six people during busy periods.

At first glance, the Galerie Indigo in Bamako appears no more than a handicrafts boutique. In reality, it is the sales point for a network of some one hundred associations of artisans, cooperatives and individuals from Burkina Faso, the Ivory Coast and Mali. The products chosen for export include traditional fabrics, Tuareg carved wooden boxes, leather bags, silver jewellery, knives, cushion tops, wrought iron articles, wooden utensils and statuettes and traditional jewellery of these three countries.

The distinctive characteristic of this business is the ambition of its manager to progress in the arts and crafts sector, which is well known for its many difficulties, not least the informal nature of the economy in which most artisans operate and their cultural isolation from the prospective buyers of their work. The international market demands products of a uniform quality and finish, which can only be achieved through an intermediary who understands and respects both the needs of customers and the artists' traditional way of working.

Legislative vacuum

Electronic commerce is almost non-existent in Mali. Apart from the experience of Mamadou Kéita, very few business people have ventured into this area. According to Miss Assitan Coulibaly, a legal specialist who presented a Master's thesis in 2002 on 'Legal and judicial aspects of electronic commerce,' there is a legal void on this subject in Mali. She deplores the fact that 'there is no law regulating this sector.' She points out that there was a tentative attempt in 2001, by the Mali Chamber of Trade and Industry with its 'Trade for Trade' project, but the project did not succeed. In her opinion, there are certain pre-conditions for electronic commerce to succeed.

First, there must be high-speed Internet connections, secure payment methods and participation by the country's banks. Finally, the government must adopt legislation dealing with electronic commerce and electronic fraud. 'People turn to electronic commerce to save time,' says Miss Coulibaly. 'If there are slow Internet connections and outdated bank management structures, conditions are far from satisfactory for electronic commerce in Mali.'

ICT for improved crop marketing in rural Tanzania

By Aloyce Menda

In 2001 the CROMABU project (www.cromabul.com) was designed to gather and disseminate relevant information regarding crop prices in local and international markets. Based in the Magu area of Mwanza, near the southern shores of Lake Victoria, CROMABU is supported by the Dutch International Institute for Communication Development (IICD).

> 'The Internet enables small-scale farmers to secure direct buyers from abroad.'

Agriculture in crisis

Covering 937,062 square kilometers, Tanzania has a huge potential for agriculture with an estimated 43 million hectares suitable for farming. However, only an average of 6.3 million hectares are cultivated annually, mostly by small-scale farmers. Large-scale commercial farms account for less than four per cent of all farms in Tanzania.

Tanzania resembles many countries in sub-Saharan Africa in that it suffers from economic problems due to rampant rural poverty and poor performance of the agricultural sector. Proper application of modern technologies such as ICT can rapidly reduce these problems, says the United Nations Development Programme (UNDP) in its 2001 Human Development Report (HDR).

Deemed the backbone of the Tanzanian economy since independence from Britain in 1961, the agricultural sector is poorly performing and its current contribution to GDP is only 50 per cent, though it employs over 70 per cent of national labour force. According to government statistics, an overall real agricultural GDP has been growing at an average rate of only about 3.5 per cent per annum since 1981. The current national crop marketing system does not guarantee enough returns to offset production costs and hence discourages small-scale farmers who constitute the bulk of producers in this sector.

CROMABU

The CROMABU project is aimed at empowering small-scale farmers economically by enhancing their access to price information and insights in trade flows. While stakeholders in the agricultural sector are demanding the government ensure a fair-competition policy for agricultural marketing and distribution, CROMABU is levelling the ground by use of modern ICT to empower farmers.

According to CROMABU manager Mrs. Naomi Massele, a professional agriculturalist with experience in management of rural agricultural and industrial projects, CROMABU consists of three components. These are the Internet Café that serves the targeted community; price information services; and community development through information and training. CROMABU's development phase will end in September 2006 and the project is regarded by IICD as a pilot to be replicated in other rural areas with crop marketing problems. Mrs. Massele explains that the project targets 16 villages directly, but the information from it circulates more widely. Information on crop prices gathered from local markets and prices of foreign markets downloaded from the Internet sources are compiled by CROMABU and stored in a database. From this, a simple price index is prepared in the Kiswahili language and disseminated to farming villages. Youth, particularly ex-students from primary and secondary schools, are the key channel of communication between the CROMABU and the targeted small-scale farmers in Magu; they are employed as agents and use bicycles to collect and distribute all relevant documents to the villages.

Using ICT effectively

According to experts, four characteristics describe the powers of modern ICT in poverty reduction:
• Interactivity: For the first time ICTs are effective two-way communication technologies.
• IPermanent Availability: ICTs are available 24 hours a day.
• IGlobal reach: Geographic distances hardly matter any more.
• ICost-effective: For most areas the relative cost of communication has been shrunk to a fraction of previous values.
The CROMABU project is aimed at doing exactly that. Within an NGO set-up, the project generates income from its community-training centre for peasant farmers and youth groups. It also charges fees from institutional clients in Magu such as NGOs for training and the Internet Café.

Benefits for small farmers

Small-scale farmers have benefited greatly from the project. The Internet services have helped them get the best market prices for their produce, namely cotton, groundnuts, maize, beans, finger-millet and sunflower. When prices are low in Tanzania, the Internet enables them to secure direct buyers from abroad - some of whom are sometimes ready to pay above the world market price.

Before 2002, middlemen (madalali) in Magu were conspiring to lower crop prices in order to reap unfair profits. The price of good cotton, for instance, currently ranges from Tanzanian shillings 200 (US$ 0.2) to shillings 250 (US$ 0.25) per kilo, while before the project it could be as low as shillings 150 (US$ 0.12) to shillings 180 (US$ 0.18) per kilo. Recent press reports said that small cotton farmers in the neighbouring Bunda district situated about 450 kilometres from Magu refused to sell their product for shillings 180 (US$ 0.18) per kilo to any buyer. They heard that prices are much better in Magu and hence would rather retain their cotton, which after all is a non-perishable product. They anticipate that buyers offering good prices will eventually come!

Since modern ICT facilitates efficient creation, storage, management and dissemination of information by electronic means, they are powerful tools for fighting some of these impoverishing forces. If a poor African can send a 40-page trade document from Tanzania to Cuba for just 40 US cents (Tsh 400) instead of US$ 50 (Tsh 50,000) for courier, then there is no doubt that modern ICT are cost effective and hence efficient in poverty reduction.

Lessons learned

Despite the remarkable success of CROMABU, content issues remain a challenge. Most web contents are in English, which is a language of the elite in Tanzania. Kiswahili is the official national language of 34.6 million people of Tanzania, and over 95 percent of the population can only speak, read and write in either Ki-Swahili or tribal languages, and hence cannot comprehend most of the Internet's contents, even if they get access to it.

Village phones open up Uganda's hinterland

By Davis J. Weddi

To a lay person in Uganda, it is difficult to explain how ICTs fit into agriculture. But today, shrewd farmers in the rural Kayunga District of Central Uganda understand that ICT is the key to vital information that helps them to plan their crop production and gain access to markets. The Farmers Information Communication Management (FICOM) project is a pilot project which, although new, seems to be a success. It is carried out under the auspices of the Uganda National Farmers Federation (UNFFE), the largest farmers advocacy membership organisation in Uganda.

> Farmers use locally developed SMS services to send and automatically receive updates on market prices.

Lost crops due to poor communication

Kayunga District has some of the most unreachable villages in the country. Visiting the area involves a tough hassle given the terrible neglected road system. Hellene Karamagi, who heads an organisation Information Communication Technologies for Africa Rural Development (ICTARD), visited Kayunga last year and explained that on her first trip to the remotest parts of the district, she found heaps of pineapples rotting by the roadside for lack of access to markets. Farmers told her that they were waiting for buyers from Kenya and other parts of Uganda, including Kampala. But the buyers were delayed and some of the produce was starting to rot. Karamagi's instincts were set rolling and she determined to find a real solution for these farmers. One of the immediate issues was that there was a huge deficit in communication between the rural farmer, UNFFE headquarters, and the member districts. The problem is not limited to Kayunga District alone; it is common across rural Uganda that farmers whose produce is ready for market have ended up failing to sell due to a lack of means of communication with the market.

Improving communication from the ground up

This situation prompted UNFFE to initiate the FICOM pilot, to enable such services as necessary information gathering and effective dissemination to the rural farmers, the districts and UNFFE headquarters. The information gathered and disseminated had to be relevant to the farmers to enable them to make informed decisions when planning their crop production. The project is implemented by ICTARD and receives funding from Syngenta Foundation for Sustainable Agriculture based in Basel, Switzerland.

FICOM began with the aim of easing UNFFE internal communication and connection to the districts and other affiliated members in Jinja, Luwero and Kayunga, and among the grassroots farmers who in turn would find it easier to communicate among themselves and with the entire world. ICTARD set out to improve exchange of customised agro- and health-related information between district farmers' associations and the local, national and global agricultural players. ICTARD also seeks to improve access to existing agro-market solutions using ICT and see to it that additional income is created for farmers groups by providing phone services to the rest of the community. Another goal is to empower farmers' groups with adequate skills for sustainability of the project. In addition to the organisations named above, other vital stakeholders had to be called in to make the FICOM project a reality. They include the Ministry of Water, Lands and Environment (Meteorology department) and the National Agricultural Research organisation (NARO).

Building on what already exists

Faced with the challenge of improving communications throughout the UNFFE umbrella organisation and among grassroots farmers in the district, ICTARD chose to put emphasis on existing communication channels like the village phone, by increasing their number and distribution around the three concerned districts. Sixteen village phones were distributed and form a key part of the information and communication system. Another feature of the project was the use of Worldspace digital radio, through which detailed information on weather conditions in the country is disseminated.

First fruits

The farmers themselves have maximized the use of the village phones to access market information from any part of Uganda. They use locally developed SMS services to send

and automatically receive updates on market prices. Because of this, farmers no longer have to wait for buyers and middlemen. They have direct contact with the buyers and no more middlemen are involved. Some farmers are now able to sell to the big supermarket chains in Kampala, including Uganda's Metro and Uchumi. They have eliminated unnecessary transport costs. Instead of paying 5000 shillings (about US$2.5) for transport to look for buyers or be paid with a lot uncertainties, farmers now first make a call to ascertain payments and other related activities.

According to ICTARD, the new solutions have improved the farmers external relations. Farmers' groups have been able to communicate both internally and externally, some have managed to get development funds and other related benefits, and they also now have accessible contact addresses for easy communication. Some farmers have also seen the widening of their income base. Instead of depending on only agricultural activities for income, farmer groups are now realizing a side income from the village phones, where there is possibility of earning money by charging for phone calls made. The village phones are also offering employment opportunities for telephone operators. The rural farmer associations are now being empowered with basic computer, business support and management training for sustainability purposes. This training includes:- basic computer knowledge, downloading and viewing of information from the world space channel; business support training; book keeping, customer care, marketing and business planning, conflict management, avoidance and resolution.

Lessons learned
A big lesson is that ICTs are no longer the isolated reserve of literate people. The notions that ICT requires ICT literacy, that the technology is very expensive, and that the rural people cannot easily adapt to the technologies, are now open to debate. ICTARD says: 'with proper planning, the right approach to ICTs can play a big role in poverty eradication in the rural areas.' Another lesson according to ICTARD is that the village phone is the most sustainable means of communication and access to market and other information to improve the livelihoods of rural farmers. Previously, there were phones in the villages but on a very limited scale. The project increased the number of phones and provided the farmers with additional information on how to use them productively. The village phones are very user-friendly, though the phone operators still have to learn some detailed phone functions.
At the end of the day, the final product is improved communication for rural farmers in Kayunga, Jinja and Luwero districts. There is nothing more valuable to the farmers than information relevant to their prevailing needs, including technical and advisory assistance and market information.

Electronic banking prepares the way for e-commerce in Zambia

By Michael Malakata

The growth of e-commerce depends on good communications infrastructure, an effective legal and regulatory framework and the development of electronic banking solutions by financial services providers. While lack of infrastructure and weak technologies are a major hindrance to e-commerce development in Zambia, Zambian banks have taken the lead in developing electronic services to support e-commerce and to ease the difficulties experienced by clients in accessing bank services.

> The growth of e-commerce depends on good communications infrastructure, effective legal and regulatory framework and the development of electronic banking solutions by financial services providers.

New services by major banks
One of Zambia's largest banks is Finance Bank, which has its headquarters in Lusaka and branches throughout country. Finance Bank has more than 5000 clients and about 2000 clients are benefiting from the bank's electronic services. Information Technology Director Shahzad Ghazi says that apart from issuing Automated Teller Machine (ATM) cards to clients, the bank has introduced the 'Customer Access System' and 'MoneyGram' services, both of which are computer-based.

The bank is using its resources to develop e-commerce for the betterment of the clients and to adapt to the growing trend in e-commerce that is taking root in today's business, says Ghazi. 'The Customer Access System allows customers with a computer connected to the Internet to access their accounts from anywhere in the country or in the world, permitting them to find out their bank balances, among other uses,' said Ghazi.

The Zambia National Commercial Bank (ZANACO) has not been left behind. According to ZANACO Marketing Manager Daisy Diangamo, to access one's account one simply needs to go to ZANACO website. ZANACO Internet banking allows customers to verify their bank balance, foreign exchange rates and the status of cheques. With an e-tracer service, an account holder can receive up-to-date bank statements by email.

Security and confidence
Many people are nervous about e-commerce because the transactions are paperless and the communications take place on public networks such as the mobile phone

network and the Internet. There are always fears that cyber-criminals might hack the system and steal money. However, technology is also at the heart of the security measures that are taken by the banks. Ghazi of Finance Bank says so far no single fraud case has been recorded. Daisy Diangamo of ZANACO explained that electronic services are safe as all the e-mails are encrypted, meaning that only the client is able to read them; hence the system is not under threat.

A growing proportion of the clients of Zambian banks are using electronic services, but there is potential to expand the services to clients in rural areas; that is those who have bank accounts. Electronic commerce needs to be adapted to the local situation, including the large number of people who need financial services but who have a very small income.

E-commerce via mobile phones has great potential in the Zambian market mainly owing to convenience, flexibility, and increase in the use of mobile phones. Mobile telephones let customers carry their bank in their pocket. Daisy Diangamo of ZANACO bank said that hundreds of retailers for beverages from Zambian Breweries now pay delivery drivers by sending text messages on mobile phones to the bank. The bank then verifies the message and the payment is made.

Sector impact
Profitability of the banking sector in Zambia is hindered by high labour costs and very small markets, making it difficult to achieve economies of scale. E-commerce enables the banking sector to cut costs by reducing the amount of labour involved in processing transactions on paper and handling bundles of cash. The greater efficiency and lower costs offered by e-commerce is therefore an important contribution to the country's economic infrastructure. The example of Zambia shows that e-commerce and electronic banking has potential in low-income countries. Not only can it help the banking sector to cut costs and operate more efficiently, but also the emergence of applications such as mobile phone banking mean that financial services can be made available even to clients in remote regions where there are no bank branches.

Governance

The strategic objective of e-governance is to support and simplify governance for all parties -government, citizens and businesses. The use of ICTs can connect all three parties and support processes and activities. In other words, in e-governance uses electronic means to support and stimulate good governance. Therefore the objectives of e-governance are similar to the objectives of good governance. Good governance can be seen as an exercise of economic, political, and administrative authority to better manage affairs of a country at all levels, national and local.

Can ICT improve public service delivery in Burkina Faso?

By Ramata Soré

In Burkina Faso, a country with very low ICT penetration, some government services have been put online, but the lack of access by the majority of the population means that e-government must be balanced with traditional means of disseminating public information. 'I applied for the job of health agent, and saw the results while searching on the civil service website before these results were broadcast on national radio,' said Marion, an aspiring civil servant, illustrating the two-tier strategy that is a necessity in Burkina Faso.

> 'ICTs can enable elected officials to better fulfil their role as representatives of local constituencies.'

Overcoming obstacles

Access to advanced ICTs in Burkina Faso is very low due to infrastructure limitations and a lack of training and financing for such tools. In less developed countries like Burkina, traditional media such as print, radio and TV are still indispensable for reaching the public and must be part of the government's information and communication strategy. Otherwise, e-government will result in 'two-tier' government, with a large part of the population left with less access to government information, not more.

The perception that Burkina Faso is not totally ready for e-government extends even to DELGI, the informatics ministry responsible for the overall strategy. One official there said that Burkina is responding to outside pressure in instituting e-government: it was 'an international imposition. We had to put information [online] because the Westerners did it and asked us to do the same.'
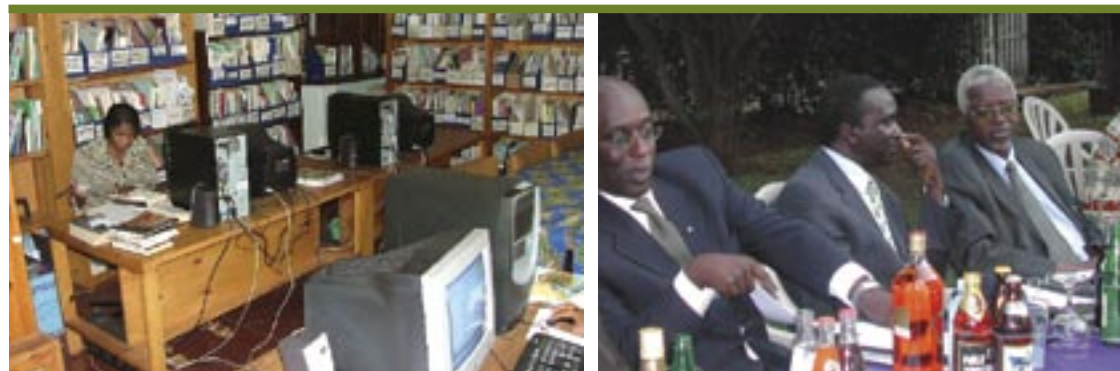
To put the Burkina Faso online presence in context, a UNDP study of 190 countries showed that 169 of them had government websites. Of these, 17 were sophisticated enough to handle electronic payments, 32 of the sites were simply a web presence with information about such things as government ministers, and 55 sites allowed people to download documents and interact with ministries by email.

The Burkina Faso government's online presence online falls into this intermediate category. Although it is not very interactive and does not include facilities for applying for identity cards and paying taxes, for example, the sites are nevertheless helping to improve transparency and efficiency. The Ministry of Finance has published on its website various useful documents including forms and information about its operations. Mahama, a law student, says 'It is easier to get an answer from a government official by email than to visit the office.'

'E-government is in an embryonic state in this country,' says Augustin Coulibaly, a senior staffer at the Ministry of Finance. Complex transactions like online payment and applying for identity require a high level of security, confidentiality, and verification of identity. At the minimum, the information online needs to be absolutely accurate and up to date, or the web site is worthless, says Coulibaly.

DELGI is responsible for putting in place a programme of modernisation of government services. It is installing a public service intranet/extranet and rolling out a national network to respond to the communication and information needs of a public administration that is undergoing a decentralisation process and that therefore requires good information links between the capital and the regions.

The Ouagadougou infrastructure consists of an Internet server allowing 32 phone connections and a dedicated line with a capacity of 512 Kb/s. This permits Internet access, hosting of the government websites, and connections between local networks. Eleven public institutions now have Internet access. The more this resource is used to deliver better quality public services, the more ICTs will be appreciated by the Burkinabè public.

A tool for democracy

ICTs can make it possible to carry out participatory consultation processes with citizens and business regarding administrative and political decisions. For this to happen, Burkinabès would have to undergo a change in mentality. Representative democracy needs ICTs in order to enable a fluid public discourse. 'ICTs can enable elected officials, to better fulfil their role as representatives of local constituencies by allowing them to monitor legislative processes from a distance,' says Professor Augustin Loada, executive secretary of the Centre pour la bonne gouvernance (CGD).

In November 2005 there will be elections in Burkina Faso. Only four out of 136 political parties have websites. The information on these sites is similar: history of the party, an account of current activities… After the elections, parliamentary websites will be able to publish information about the winning candidates, including biographical and contact information. This objective information is not to be confused with the political websites posted by individual candidates and elected officials, which are designed to sell his or her message to voters.

ICTs are a tool for public participation. By nature the technology is immediate and facilitates a rapid, almost instantaneous public reaction to current events. 'Discussion forums can have an impact on the evolution of legislation or public policy in general,' says Professor Loada. Public commissions can use the online forum to monitor public opinion. Minorities and dissenting groups can use the Internet to make their opinion known and to lobby for change. ICTs do not create such freedoms, but they can bring about greater expression of diversity and difference of opinion in society. What's new about ICTs is their interactive nature, which enables each citizen to publish his or her opinion instantaneously and throughout the world.

ICTs are a goldmine of unexplored potential to improve the economic productivity and quality of life of Burkina Faso's citizens. They can transform government into governance and change the relationship between government and citizen from one of master and servant to one of service provider and client. This process is still proceeding slowly in our country. The State still has problems of capacity, content, management and regulation to overcome before it can fully adopt ICT into its operations.

The Ghana.gov project

By John Yarney

In Ghana today, anyone can sidestep the hindrances associated with bureaucracy and access government information such as the country's budget statements via the Ghana government's portal at www.ghana.gov.gh. This access is one of the benefits of the government portal project, according to Alphonse Koblavie, Deputy Director of information of Ghana's Information Services Department and leader of the team implementing the portal project. 'The public can access government information anytime and anywhere provided they have net access,' he explains.

> 'The public can now access government information anytime and anywhere.'

Government services go online

The portal project has operated on a pilot basis since 2003, when Ghana's Ministry of Information entered into an agreement with the International Institute for Communication and Development (IICD) to enhance the existing official National website at www.ghana.gov.gh, creating online delivery of government services to the people. The portal's managers are now on the verge of executing the first phase of the actual portal project, which will include enhancing the content of the portal, adding more pages, and networking all the regional information offices of Ghana's Information Services Department.

The project's implementers defined two objectives for the pilot: first, to demonstrate how the government of Ghana could make effective use of web technologies to disseminate government information; and secondly, to examine the potential demand for government information and other e-government services among citizens and to consider how that demand could best be met at the local level. The project leaders would then advise government on appropriate strategies and actions to be taken to extend e-governance at the national and local levels.

Currently, the portal provides briefs on all branches of government and links to institutions that have websites. It also has an archive of draft policies, reports, speeches and other official documents in addition to its news pages. And it displays general information on events, visiting, investing and studying in Ghana.

Citizen interest vs. cost barriers

According to the project's implementers, the reaction of the Ghanaian citizenry towards the Ghanaian government portal has been favourable. On average, at least 15 enquires are directed daily to the government through the portal.

Increasingly, the portal is also serving as a link between would-be foreign investors and Ghana's Investment Promotion Centre (GIPC). Managers of the website say they receive a significant number of investment enquiries, and they suggest that foreign investors find the site credible because it originates from the national government.

But despite these positive reactions, the bulk of the citizenry cannot access the service because of illiteracy or lack of connectivity to the Internet. Most Ghanaians receive information via the radio. A survey – the third round of the Afrobarometer survey conducted in Ghana by the Ghana Centre for Democracy and Development (CDD) – confirmed this reality. The survey, which measures indicators such as governance, economic reform and quality of life, found out that 67 per cent of respondents received their information from radio, and 83 per cent of respondents said they trusted that source, and especially the national broadcaster. Newspapers and TV followed radio respectively.

'A lot more people have access to radio than to other media. We did not even include the Internet [in the survey], but if we had it would have made a poor showing,' said Edem Selormey, Afrobarometer Team Member. Selormey notes that very few people have access to the Internet, whereas radios are inexpensive and people can listen to programmes in their local dialect, thanks to community radio and local language programming on most FM stations.

Ghana's portal project has made some arrangements to deliver its services to citizens who do not have Internet connectivity, but so far these plans do not reach far enough. However, all of the country's ten regional information offices can use the portal to locate and provide information to disseminate by other traditional means in their jurisdictions.

Project challenges

There are fundamental issues beyond combining traditional and new media to deliver government information and services to the citizenry. Of course, funding remains a key issue. According to the portal's managers, the first phase has stalled because of the delay in receiving funds from partners.

Human resource issues also remain critical to the project's survival. According to managers, remuneration and motivation for staff of the project could be much better, and there remains the need to develop the technical competencies of the team. 'You can bring new ideas,' stresses project leader Koblavie, 'but you still need a team to implement and sustain it.'

Furthermore, equipment must be regularly updated to keep to the project afloat. Implementers reason that because of the 24-hour operation of the project, it is essential to replace equipment every one and a half years. Finally, gathering information from the relevant governmental institutions remains a significant challenge. However, the advances made to this point suggest that with support the project will continue to provide important benefits.

Ambitious plans for e-governance in Mali

By Almahady Moustapha Cissé

Mali's ambitious government ICT project seeks to use the new Information and Communication Technologies (ICTs) as a development and anti-poverty tool for achieving the Millennium Development Goals. The main objective: to make ICTs an instrument of good governance.

> 'ICTs made it possible to localise the invasion of desert locusts.'

According to Gaoussou Drabo, the Minister for Communication and New Information Technologies, ICTs can serve as tools for opening up isolated areas of the country to the outside world, thus contributing to the fight against poverty and helping the democratic process to take root. This vision drives the government's ICT project.

The project has two components. The first is modernisation of the government and the establishment of a network encompassing all ministerial departments and public services, including their subordinate directorates at national and regional level. The second involves connecting the country's 703 municipalities to the Internet.

According to Moulaye Sidaly Haïdara, Managing Director of the Implementing Agency for Information and Communication Technologies (AGETIC), the first objective, creating a government network, is well under way: 'To date [as of September 2005], we have connected 14 departments and central services…. By the end of the year, we expect to have completed the 16 remaining departments.'

Mali has 27 ministerial departments and three central services – the Presidency of the Republic, the Primature (Prime Minister's Office) and the government's General Secretariat – making a total of 30 entities to be connected. 'If we complete this task, a large proportion of all government administrative work will be done online,' he noted.

This huge project will be spread over three years, from 2005 to 2007. The Managing Director of AGETIC reveals that the project in fact began in 2004-05, using domestic financing. For the next three years, 2006-08, the European Union will provide funding to the amount of 6 billion CFA francs.

ICTs foster good governance

'In development circles, we are always talking about good governance, and this notion is included in the government's Intranet project,' says Touré Aïssata Lady, an AGETIC official. By way of example, she points to the contribution made by ICTs in managing the locust invasion that afflicted Mali in 2004: 'ICTs made it possible to localise the invasion of desert locusts thanks to the GPS system.'

According to Ousmane Bamba, a lawyer and expert on ICTs, these technologies can facilitate the democratic process. 'With ICTs, we can ensure fair elections through the use of an electoral database based on biometrics,' he says. The financial advantages will also be substantial, says Bamba, citing a study showing that in Mali the state spends the colossal sum of 6 billion CFA francs per year on communication via telephone and fax.

As Mamadou Iam Diallo, technical advisor to the Ministry for Communication and New Information Technologies, notes, 'The intranet allows the government to communicate both internally and with users.' Diallo contends that ICTs are the right strategic choice for development, since, as he argues, the main costs incurred will be those for the initial investment. His conclusion: information technology, and ICTs in general, are tools that can foster good governance and development.

Connecting municipalities

The second major component of Mali's ICT project involves connecting the country's 703 municipalities to the Internet. Wiring all local communities is a long-standing dream first voiced in 2000 by former President of the Republic Alpha Oumar Konaré. 'This dream is now becoming a reality,' declares AGETIC head Haïdara with a smile.

Connecting towns to the Internet will give users direct access to information on their civil status and to many other kinds of data that they can currently obtain only by going through a multitude of bureaucratic procedures. In view of the size of the country, the government has broken down the project schedule into phases.

In March 2005, during the testing phase, three municipalities were connected to the Internet: Ouélessébougou, 80 km south of Bamako; Kati, 13 km north of the capital; and Commune VI in Bamako District.

Gaoussou Drabo, the Minister for Communication and New Information Technologies, visited these communities in person on the occasion of the reception of the ICT equipment. 'Bringing the Internet to local communities strengthens the decentralisation process and makes communities less isolated,' read a banner at the entrance to the town hall of Ouélessébougou, the first town to receive the minister. Each municipality has set up a community cyber area, equipped initially with five PCs and a server. The computers are networked and connected to the Internet. 'Our connection to the Internet is a wind of modernity blowing through our town. I am sure that it will resolve our communication difficulties and make up for the shortage of information that we experience every day in managing municipal affairs,' said Souleymane Dougnon, the mayor of Commune VI of Bamako District, thanking the Ministry for Communication and New Information Technologies. His counterpart in Kati, Yoro Ouologuem, expressed the same feelings of satisfaction and gratitude. In his view, connecting municipalities to the Internet means the dawn of a new era for local authorities. The initiative should be encouraged and extended to all communities in the country, he asserted.

The availability of electricity and telephone services, but even more importantly the involvement of the local population, was the selection criteria used for the test phase of the 'Internet in local communities' project. In years to come, the project will cover all the municipalities in the country in order to fulfill its aim of enabling citizens to communicate with one another and with the government. Once connected, each municipality will manage its own community cyber area, where local development stakeholders will gather to inform themselves, to obtain training and to communicate with one another and with the rest of the country.

This project is one of the pillars of Mali's national policy concerning ICTs, with its primary objectives of popularising ICTs through community cyber areas in the towns and developing applications to support socio-economic development. 'Above all,' says Minister Drabo, 'we are strengthening the decentralisation process while at the same time reducing the isolation of local communities and authorities by bringing citizens closer to government in order to establish practices of good governance.'

Other goals of the government's ICT project include establishing modern, reliable channels of communication linking all segments of society, including women, young people and NGOs, and opening up the country with a view to poverty reduction. The project benefits from the support of the International Telecommunication Union (ITU).

Computerising local government in Tanzania: the Kinondoni experience

By Aloyce Menda

The Kinondoni municipal Council project

Tanzanian e-governance is in its infancy. The central government website was inaugurated in 2000 and since then some government branches and local government authorities have focused on e-governance initiatives. Currently, an elaborate e-government strategy has been approved by cabinet and is awaiting implementation. The e-governance project was the brain child of the Tanzanian Commission of Science and Technology (COSTECH), intended as a follow-up to the recommendation of the 1998 national ICT round table on Governance facilitated by IICD. The project proposal followed a feasibility study of August 1998 conducted to investigate, identify and recommend possible areas for sustainable computerization in the local governments. The feasibility study identified data flow patterns and their reporting mechanisms within and across various government sectors. The COSTECH director of information, Mr. Theophilus Mlaki approached the Kinondoni Municipal Council (KMC) administration in 1998 to propose that it host the pilot e-government project. KMC is one of three municipal councils that forms Dar es Salaam City Council (DCC), the top authority of the de-facto capital of Tanzania.

> 'ICTs promote transparency and accountability.'

The Kinondoni area is regarded as home to the city's high and middle income earners, privileged in terms of infrastructure improvement, living accommodations, social service provision and security. Most top government officials reside in the Kinondoni district. Based on its superior infrastructures and security, KMC attracts more local and foreign investors than the rest of the Dar es Salaam city area.

Mlaki and his team from COSTECH faced a challenge in illustrating to key KMC officials how ICT and the e-government project would improve the KMC performance in all departments. The main concerns of KMC were cost saving and improvement in tax revenue collection, so the COSTECH team had to demonstrate how the e-governance project would boost good governance as well as revenue collection and service delivery without excessive costs and extra burden to tax payers. They succeeded and the pilot project took off in 1999 with financial and technical support from IICD and COSTECH.

Thus the KMC became the first of the 126 local government authorities of Mainland Tanzania (municipalities and districts) to initiate an e-governance project.

'At that time there were only two office computers at the headquarters,' says Mlaki as he explains the challenges encountered in presenting the e-governance idea to the KMC leadership. Computers for the project were provided by IICD - and today there are more than 120 computers in use, most with Internet access, according to Mr. Joash Nyitambe, the IT consultant for KMC.

As one of the three municipal councils of the major city of Tanzania, KMC has many political, economical, social and administrative responsibilities. These include social (education and health) services delivery, tax collection, business licensing, council elections supervision, basic infrastructure (roads, water supply, etc) construction and maintenance, waste management, and the maintenance of security, law and order. However, the COSTECH feasibility study had earlier revealed that most of these tasks were manually processed and were largely ineffective and inefficient. Transparency was limited by a slow flow of information which impeded direct access to KMC public services.

Moreover, due to lack of a computerized Management Information System (MIS), the KMC resources were poorly managed, which translated into poor public services. The KMC project thus established a pilot MIS for the top administration. Databases for various services and records, such as health, education, birth, marriage and death, are computerized to facilitate good governance and to accelerate public services and the compilation of various social services reports. The process of registering and issuing birth, marriage and death certificates is now ten times faster than before the project inauguration. The project has also enhanced the management and processing of matters pertaining to foreign trade and investment in Kinondoni district.

Creating transparency and efficiency

A vivid example of e-governance's capacity to boost transparency in government operations at the local level and to minimize the loopholes for corruption can be found in the realms of business licensing and tax collection, which were extremely cumbersome before the e-governance project. Business licensing was contaminated with elements of corruption due to the slow manual processes – often a week or more – that lacked transparency.

Today such elements are almost eliminated and businesspeople can process a license in one day. Furthermore, KMC administration has publicly started that the project is boosting revenue collections in all sectors and has reduced to the minimum public complaints about victimization, favoritism and corruption in taxation procedures.

Today few IT experts can talk about e-governance in Tanzania without referring to the KMC. The project bears those characteristics which mark modern ICT as a new engine of development: efficient interactivity, permanent (24 hour) network availability, a global reach through the Internet, and reduced costs. The project embodies exactly what the United Nations' Millennium Development Goals (MDGs) specify: 'People centered development'.

The KMC project is now the reference model for all local governments in Tanzania, as the central government has approved that it be replicated across the country. Yet despite its remarkable successes and broad acceptance, replicating the model countrywide poses new challenges. In Tanzania, as in most developing countries, budget proposals often face a daunting question: Where should the meager state resources go?

Even with the benefits exemplified by the KMC project, most bureaucrats, particularly the administrators in local government authorities, remain hesitant about adopting ICT and point to cost as their biggest fear. Local government councilors question why their council's budgets should allocate more money to ICT solutions, while some dispensaries and schools lack essential facilities such as electricity, telephone and stable water supply.

The answer, says Mlaki, lies in presentation. To be effective, ICT teams must operate as simple consultants rather than as expensive experts. Then the ICT teams can address the reservations of local authorities, demonstrating the broad long-term benefits of ICT implementation for e-governance.

Transforming local government: e-governance in Uganda

By Davis Weddi

Many Ugandan civil servants are striving to use Information and Communication Technologies (ICTs) to prompt changes in the standards and delivery of local government services and, more importantly, in the way citizens interact and participate in governance. Voluminous paperwork, long service delivery times and stifling bureaucracy may soon be a thing of the past, if new ICT plans are implemented across the country.

> 'Think big but begin small. Piloting is the way!'

Local government transparency via District Net

Uganda's e-government intiative, known formally as The District Administrative Network Project and more commonly as District Net, was designed for Uganda's Ministry of Local Government. As current National Project Coordinator Engineer Stephen Dagada explains, 'This project was born during a round-table conference in 2002, when we realised that there was a need for transparent governance in the Ministry of Local Government.' It immediately caught the imagination of central government and international donors who provided support for its pilot phase. Among the external funders were the International Institute of Communication for Development (IICD) and the UK Department for International Development (DFID), who have followed this project from its start.

With external funding for one and a half years, District Net was initially implemented in 2002 in four districts – Mbarara, Lira, Mbale and Kayunga, representing the country's west, north, east and central regions, respectively – with the hope that, if successful, it would be extended to the rest of the country. The project set out to remove obstacles to communication links among the district headquarters, central government agencies and other stakeholders working with districts, and to address problems of inadequate ICT basic skills among the district staff. The local Government Ministrstatesy that the District Net project was created 'to improve performance in the Local Governments by establishing functional data/ information management and public communication systems for effective and efficiency service delivery in decentralised governance.

Hence, this project [was created] under the slogan 'ICT for Rural Development!' According to Constantine Bitwayiki, who has worked on the project, 'Districts were faced with challenges in funding routine administrative expenses. For interoffice communication, staff travelled to Kampala, the capital of Uganda, to deliver and collect routine documents. In addition, data and information for planning and other decision-making functions were often inaccurate or unavailable when needed.'

By the start of 2005, the project had entered into a mainstreaming phase, and has now acquired private sector partners in addition to government, IICD and DFID. Today, Ugandans are coming to realise that e-governance can bring individuals into close contact with decision-makers and officials in the government. The Ministry is currently in the process of acquiring more funding to extend the project to other parts of the country.

Connecting constituents

Soon after the District Net project's 2002 kick-off, implementers began installing Local Area Networks (LAN), Wide Are Networks (WAN), e-mail and internet systems, as well as data and voice communication links between District headquarters, the pilot sub-counties and the central government headquarters. Through the project, the Ministry of Local Government established computerised databanks and information dissemination systems, and initiated an extensive training programme for users (mostly district officials) in basic ICT skills and the use of basic computer applications.

So far, the districts where the project was implemented have made savings in administrative expenses, 'freeing these funds to be used to other pressing economic activities geared towards economic development initiatives,' says Bitwayiki. 'In addition to improvement in communication channels, we are seeing that users are accessing useful information for planning purposes.'

'In social terms, the communities in the districts covered by the project have been sensitised about the usefulness of utilising ICTs and how these technologies can bolster development,' he adds.

One result, he says, is a 'demand for accurate and timely information from technical staff by the politicians for planning and other decision making functions.' Thus, higher levels of ICT awareness are now helping development. The success has been duly noted, and Members of Parliament have promised to roll District Net out to the rest of the country.

Positive feedback

A project evaluation report was released earlier this year in which a questionnaire was distributed to forty end users of the District Net: 83% were staff and the rest were Heads of Departments in the Ministry of Local Government.

In their answers, 50% of the respondents approved of the District Net project because they hoped to improve their ICT knowledge, 35% wanted to see an improvement in the flow of information and communications in the Ministry of Local Government, and 15% wanted to gain access to the Internet. When asked how they had so far benefited from the project, 38% said they had achieved these goals, 50% identified an improvement in their work and 50% claimed they had improved in handling ICTs. In describing the positive impact of the District Net, 53% said the project had enabled them to improve ICT awareness while 25% claimed to have been empowered to make informed decisions in their departments using their new ICT skills. In addition, 25% thought they had been motivated by the decreased costs in their work, and 20% had seen an improvement in reporting, documentation and levels of transparency.

The future of District Net

Implementers of the pilot phase have learnt an important lesson: 'Think big but begin small. Piloting is the way!' The pilot activities are now being replicated in other projects and programmes and implemented in other districts.

In order for District Net to work, it must be supported by human capital and an enabling environment. 'Change management is critical,' Bitwayiki stresses. Whether ICTs prove to be a sustainable solution for enhanced communication and information flow 'depends on the willingness of the human capital to tackle the challenges in a sustainable manner.' Although the ICTs introduced are user-friendly, new technologies will inevitably require time for people to adapt to them. And, of course, the financial cost of implementation is daunting. While the local beneficiaries have tried to contribute, they have confronted difficulty because their tax base is still very small.

But the costs of failure would be greater. Dagada, the current project leader, emphasises that ICTs are essential. 'The challenge is that ICTs may be expensive, but they are necessary and useful. We need to find all means of mainstreaming the project in order to lower operating costs like transport and production of documents. Our ability to replace the traditional methods of operation and to beat the bureaucracy in local governments will extend the life of District Net.'

Boosting local authorities: e-governance in Zambia

By Kabukabu Mambwe

In order to promote efficiency and transparent governance in the African public service, UNESCO and the Danish International Development Agency (DANIDA) conceived a three-year pilot project on 'E-governance for African Municipalities,' which began in 2001 and involved selected municipalities from five African countries: Mali, Mozambique, Niger, Tanzania, and Zambia. Lusaka, Zambia's capital, was the country's representative in this project.

> 50% of local council workers are now using ICTs

The project's promoters noted that African municipalities are often heavy bureaucratic structures with unclear procedures and processes for treating requests from city residents. Furthermore, these municipalities tend to function in isolation and fail to benefit from the experiences and best practices of other municipalities within their country or region. The project aimed to ensure transparency and citizen participation in governance, and, while building on existing community facilities, also involved developing websites so that municipalities could share and exchange experiences. To meet these goals, the pilot emphasized two major components: developing a multimedia training package for municipal personnel; and developing pilot applications in the selected municipalities. The equipment and training necessary to achieve these goals also formed a critical element of the project.

The Lusaka City Council project

The Lusaka project, involving the Lusaka City Council (LCC), is headquartered in the city's civic center building. According to LCC IT Manager Judy Beene, also the LCC project supervisor, the project's objective is to promote free flow of information and thus to open dialogue among municipalities and the local communities they serve. In addition, the project strives to improve access to information required for decision making, to communicate effectively with citizens and to establish a municipal information system using ICTs.

'There has been a spirit of teamwork on the project from representatives of the departments within the City Council,' says Beene. The e-governance project has transformed the LCC into a knowledge hub and could be used as a tool for service delivery and revenue generation, as well as a teaching and learning centre for e-commerce, she says.

As the local government has a profound impact on the lives of citizens, the governance processes and structures that accompany it must be – and are becoming – participatory, transparent, and accountable. 'These objectives are becoming a reality in Lusaka City Council through the newly-built website, which will open dialogue between the Council and the community it serves,' Beene says.

The LCC can now use ICTs as a means of improving responsiveness and reliability in its services. As Beene explains, ICTs could improve economic opportunities, lower the cost of delivery of public and private goods, help streamline bureaucracy, enhance transparency in the institution's administration, and improve productivity. For instance, internet connectivity has boosted the Council's operations by improving communication among the workers, about 50% of whom are now using ICTs. The local network has also streamlined the operations of the Rates Department, as they are able to update their records on a regular basis.

In the past, citizens had to walk to the LCC headquarters to access information; today, Beene says, the project has opened municipal services to the city's population. In time, she says, the minutes for the full council meetings will be posted online, enabling members of the public to know what transpires in these meetings. Through the website people can come to know their councilors in the wards, to learn of development projects and to explore the Council's delivery of services. However, the website has not yet been launched for full public access

Funding challenges
Unfortunately, the LCC project suffered a set back when funding dried up just at the point when traning was about to be initiated for council workers. 'The Council has taken up the duty of paying the Internet bills,' Beene says. The LCC is searching for financing alternatives to help establish an Information Centre to improve interaction with the public and to enlighten people on the benefits of e-governance, still very much in its infancy in Zambia. Although e-governance has opened a window on new opportunities for the LCC, its workers need training sessions both to improve their basic computer and ICT skills and to help educate the public on how to use ICT to interact with the LCC effectively.

Project results
The project has achieved significant results as the Council can now communicate with other countries through the Internet. 'There are noticeable changes,' says Chansa Makanta, the LCC Public Relations Manager. 'We are able to speak to other countries and to discover what other municipalities are doing about certain issues.'

John Kapenda, Acting Director for the Engineering Department, says Internet access has improved his work as he is able to conduct extensive professional research and to download relevant materials. In addition, he notes that the Engineering Department can use its site to provide updates of activities, such as posting maps showing which roads are closed for maintenance and where new road construction is taking place. Kapenda, who checks his e-mails three to four times in a week, notes that Internet access is available to all of the 530 workers in his department – provided one knows how to use it and is working at the Council headquarters.

According to LCC Senior Software Developer Johns Kafwilo, the project has improved the operation of the Council as most of the communication is done through the Internet. 'Research is done easily and we are up-to-date with technology,' he explains. 'As an individual I am also benefiting. And the more I improve my skills, the more the City Council improves.' The internet has opened many resources to Kafwilo, enabling him to contact other specialists to find solutions to their shared problems. Such discussions are a two way process as he is also able to give advice on technical matters in which he is well-versed. ' There is an increased demand for the use of the Internet,' he notes. 'However, the bandwidth has remained static, which has to change if the service is to be used efficiently.'

The LCC has about 1500 workers but so far only those who work at the headquarters have access to the Internet. 'We require more computers for use at other sites, so we will need supporters to come to our aid,' says Makanta, who explains that the City Council intends to use the website (www.iicd.gov.zm) to post calendars of events and other initiatives that would assist donors who wish to help the LCC in expanding the e-governance initiative.

The iConnect coordinators

Burkina Faso – Sylvestre Ouédraogo (sylvestre.ouedraogo@gmail.com)
Has a passion for applied sciences for the benefit of development processes. He is active in multiple roles in the field of ICT4D; teacher and lecturer in Economy and ICT at the University of Ouagadougou, Executive President of Yam Pukri, Information Networking Coordinator, Member of Internet Commission (government), advisor on government ICT policies, writer and researcher.

Ghana – John Yarney (john_yarney@yahoo.co.uk)
Was staff reporter for the Public Agenda newspaper (a Ghanaian Newspaper that places emphasis on reporting developmental issues) before he decided to concentrate solely on ICT reporting. Editor for the Computer and Technology News (CTN) and now a freelancer, reporting on emerging ICT trends on the continent.

Mali – Filifing Diakité (filifing@gmail.com)
The first journalist to initiate ICT promotion in the media through a weekly radio magazine since 1999. He has a background in Law, and Advanced, Specialized Studies in Journalism in Democracy: Rights of press and good governance at the University of Montreal, Canada.

Tanzania – Harry Hare (harry@aitecafrica.com)
Worked in the Kenya Government's Public Trustee Department before embarking on an IT Journalism Career, founding and becoming Editor in Chief of Micro Computer Guide. He joined AITEC Kenya as Executive Director and was later appointed Regional Manager East Africa. Besides this he is involved with various ICT(4D) activities in Tanzania, both from the private and public side of the spectrum.

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