



# GOVERNANCE OUT OF A BOX

ICT4STATE-BUILDING

– AFRICAN EXPERIENCES  
AND OPPORTUNITIES

## A watercolor illustration featuring a large, vibrant green, irregular shape on the left side, resembling a splash or a large drop. This shape has a darker green outline and a lighter green interior. Surrounding this main shape are numerous smaller green droplets and splatters of varying sizes, scattered across the white background. Some of these smaller shapes are more defined, while others are faint and diffuse. The overall effect is one of dynamic movement and organic form.

## AND OPPORTUNITIES

Crisis Management Initiative  
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## ABOUT CMI



The Crisis Management Initiative (CMI) focuses on issues critical to creating sustainable peace and security, and making strategic contributions to the capacity of local, regional and international actors operating in war-torn and conflict-ridden societies through preventive diplomacy, peace-mediation and state-building.

### CMI

- Promotes sustainable security in a pioneering way;
- Brings together actors to seek solutions to security challenges;
- Engages in capacity building among the international community in conflict prevention, resolution and transformation;
- Advocates solutions for security;
- Uses comprehensive approaches that bind together security and development, good governance, justice and reconciliation.

## GOVERNANCE OUT OF A BOX

CMI's Governance out of the Box initiative concentrates on identifying new innovative tools for the effective implementation of priority functions of state administration in post-conflict countries. The aim of the initiative is to build up a standard, but scalable and flexible, toolkit for national governments and international actors operating in post-conflict situations.

The Governance out of the Box tools will combine quickly deployable communications infrastructure, collaboration tools and software applications; that are developed jointly with national stakeholders and with key international reconstruction and ICT experts. The criteria for best practice tools will be further defined through field-testing. The priority functions for the initial toolkit have been selected based on international policy dialogue regarding the priorities and sequencing in state-building.

Under this initiative CMI has launched in 2008, together with the Liberian Government, the design process for a mobile-based technological solution for a birth register in Liberia, which provides the first phase in the Governance out of a Box toolkit for state-building.

## ACKNOWLEDGEMENTS

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## FOREWORD



The use of Information and Communications Technology (ICT) is becoming more and more commonplace around the world and the spread of mobile phones, computers and the internet even to the remotest places of the world is evident. In addition to their intrinsic value, the value of using ICT as a means to achieve more significant development related goals, has been widely recognized. In a post-conflict context the use of ICT is a means of enabling effective and sustainable state-building.

Modern conflicts are often rooted in ineffective and exclusive governance. This highlights the importance of post-war state-building; in order to avoid a slip back into a cycle of conflict and violence, it is important to strengthen not only the immediate capacity of the state but also the enduring relationship between the state and its society. If done right and addressed early on, reviving key functions of civil administration can contribute to the establishment of an effective and transparent state that serves its citizens and is able to create a mutually enforcing relationship with its society. This in turn contributes not only to the immediate post-war reconstruction phase but it also provides a basis for long-term development and, most importantly, for sustainable peace.

This report provides insight into the use of ICT in state-building in the context of three African post-conflict countries: Rwanda, Uganda and Ethiopia. In Uganda ICT is being used to improve the population registration system. In Rwanda ICT is being used to enable customers to pay utility bills using mobile scratch cards. This may not be the traditional example of a state-building exercise but it provides a useful and innovative example of the state-building functions that can be done via a semi-autonomous public utility company. In Ethiopia ICT is utilized in the country's Court Reform.



These three different ICT-related studies were conducted within the framework of the Crisis Management Initiative's (CMI) Governance out of the Box initiative. This initiative concentrates on identifying new innovative tools, building on new technologies, for the effective implementation of priority functions of state administration in post-conflict countries. The aim of the initiative is to build up a standard, but scalable and flexible, toolkit for national governments and international actors operating in post-conflict situations. This study is part of this toolkit and provides an example of using ICT for different state-building purposes. The reports concerning Uganda and Rwanda were compiled by Knowledge Consulting Ltd. Uganda. The Ethiopian case study was written by Gorfus Asefa. CMI would like to acknowledge these researchers for their outstanding contribution to this study.

Like with any state-building project, planning ICT-enabled projects in post-conflict countries should first and foremost closely scrutinize the country context. The recommendations of these three studies should always be considered from this standpoint. However, it is still possible to draw some useful conclusions and lessons learned that could be helpful for other post-conflict countries.

Before the introduction and implementation of ICT projects it is essential to create an enabling environment, both at a mental and a purely technical level. This means overcoming any negative attitudes and feelings of resistance people might have towards ICT in general, as well as creating policies that support these ICT-enabled projects. Also, ownership of the government in concern is very important. In Uganda the latter was done by the creation of a Ministry of ICT that coordinates the national use of ICT for the development of the country. The inclusion of the public sector ICT architecture also helps to create synergies between projects and to avoid fragmentation. An enabling environment was fostered by the Ugandan Bureau of Statistics, an institution closely linked to population registration, by the creation of clear and focused policy and policy objectives, combined with active high-level support and commitment. These actions proved to be very helpful when evaluating the success factors of the Ugandan project.

The creation of an enabling environment requires making sure that not only are there enough resources available, but that these resources are sustainable. The cost of purchasing and maintaining ICT equipment in a challenging environment is high. It is important for the government in question not to face the challenge of introducing and implementing ICT alone. It is essential to draw on donor resources and to collaborate with other institutions. Governments should also consider setting aside funding in national budgets that are specifically tied to improving efficiencies through the use of ICT. Donors, on their side, must make sure that the funding is adequate enough to ensure not only the start-up phase, but also the

*Using ICT in state-building projects can at best contribute to the improvement of overall governance. With the help of ICT, transparency improves and usually leads to the better delivery of services to citizens.*

completion of these projects. Flexibility and a long-term point of view are certainly needed.

The Ugandan population registration project faced several problems concerning coordination. This was because there were several agencies involved in population registration with overlapping mandates, leading to the unnecessary use of resources and a lack of effectiveness. There were also multiple laws and regulations that empowered different entities to capture the same population data. Even with an enabling environment, the implementation of ICT related state-building projects can go wrong if there is no holistic approach. The key to a holistic approach is coordination in and between all of the different levels of state and society, from the legal level to the institutional level. It is extremely important to make sure

*ICT can be used to rebuild structures and procedures and critical government functions that respond to the needs of its citizens.*

that there is no unnecessary duplication of activities or procedures whether this relates to institutional coordination or to the legal framework. ICT in itself does not solve these problems. The whole framework of the project must be carefully considered.

A common trap is to assume that equipment leads to computerization. Human skills are needed to do this. That is why investment in human capital is essential for the successful implementation of ICT enabled state-building projects. This requires investing in training and increasing the overall ICT know-how of the people involved. In addition to training the personnel that actually use ICT, it is highly advisable to recruit qualified ICT experts, if possible – since they have the ability to professionally address the problems that ICT enabled processes may face. In Ethiopia, law court personnel were given training so that they could acquire the necessary new skills and knowledge. However, this meant that in each court, only one person was trained and deployed for populating and managing the database system. As this case illustrates, it is important to make sure that the training is sufficient and sustainable.

Drawing from existing resources, like local knowledge, is important. Ignoring them can cause serious problems in challenging post-conflict environments. It is the locals who usually know the context best, and are therefore the experts when it comes to working and identifying critical issues in this kind of environment. Drawing from existing resources can be done, for example, by using local companies as partners whenever possible. In the case of Ethiopia and its law court reform, the fact that the database solutions were designed and developed by local IT companies enabled responsive maintenance to support requests made by courts during difficulties. It also helped to maintain a conducive environment whereby companies can work closely with courts. Introducing ICT can also provide new business opportunities to local companies. Outsourcing, under practicable supervision of course, seems to be a viable solution as it gives the government an opportunity to concentrate on its core functions.

Using ICT in state-building projects can at best contribute to the improvement of overall governance. With the help of ICT, transparency improves and usually leads to the better delivery of services to citizens. These two are essential features of good governance and link the use of ICT into a wider framework. When considering the contribution of these case studies to the practice of good governance, the Ugandan case illustrates mixed results. At the macro-level, for instance, confidence in the statistical population registration enabled the government and its departments to plan and deliver services, and monitor their impact

in a more reliable fashion. With the registration of voters, the experience has not been as successful. In regards to the Ethiopian court reform the use of ICT contributed significantly to better governance; courts are now more transparent for clients, accessing and using court services has become simpler and clearer to customers, not to mention the time and money saved in their travel costs.

Overall sustainability is needed for ICT-enabled projects to be truly successful. This can be done by: creating an enabling environment, making sure that there are enough resources, keeping in mind the importance of a holistic approach, investing in human capital and utilizing local knowledge. If all of these steps are taken, the sustainability of a project should be secure. Sustainability is also needed in order to make sure that the best practices are shared. For the country concerned it is also important to export the lessons learned from the national level to the local level. Unfortunately, in the case of Ethiopia, this did not occur. The success of national court reform did not reach the lower level courts where huge and complex court cases still exist. Success stories, best practices and lessons learned are of great importance to the local level and also to other countries facing similar challenges. This study, through its sharing of lessons learned from Rwanda, Uganda and Ethiopia, is a starting point for demonstrating that improved sustainability can be achieved with the Governance out of a Box toolkit. CMI encourages other actors, especially the governments concerned, to also adopt these advantages.

The results of these three case studies differ and they clearly indicate the challenges ICT-enabled projects may face. However, there certainly are opportunities for governments in fragile situations to adapt ICT to empower them to operate in a more efficient, cost-effective and transparent manner. ICT can be used to rebuild structures and procedures and critical government functions that respond to the needs of its citizens. At the end of the day, creating an enabling environment for the ICT and then using it effectively creates an enabling environment for the overall development of the state.



Suvi Tuominen  
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## I INTRODUCTION



There is growing enthusiasm about the role that ICT can play in promoting good governance and the efficient delivery of services in Africa. In part, this enthusiasm is driven by the growing adoption of mobile phones, radios, computers and other tools on the continent and the potential they can play beyond people's inherent desire to communicate. The enthusiasm is tempered by appreciation of the challenges that need to be surmounted before wide spread use of ICTs can become a reality for the average citizen. Some of these include:

- The vast size of the continent (Africa can contain Europe, the USA, India, China, New Zealand, and Argentina with space to spare) and, for many of the countries, the challenge of rolling out full coverage infrastructure. With exception of urban centres and transport arteries, most of the continent still lacks infrastructure (roads, data backbones, airports, waterways).
- The very low density of the population (compounded by poverty) that, in many areas, makes the provision of commercial services unviable. Expensive public funded interventions have to be the basis of enabling access to services for populations in such areas.
- The population is still generally very poor with many people still living below the poverty line. Some argue that in a bid to access ICT, families are diverting meagre resources from more critical needs (food, health, education, etc).

The nature and extent of ICT adoption in the manufacturing and services sectors in Africa has been explored quite extensively in research as evident in the body of literature on the subject. This information is useful in understanding the pervasiveness of ICTs and extent and patterns of access.

What has not been explored adequately, however, is the impact of ICT on rebuilding civil administration in situations of state fragility. To fill this gap, CMI commissioned local African consultants to conduct case studies on ICT in state-building.

The overall objective of this study was to analyze three cases in three different countries on the continent where ICTs have been used in supporting the implementation of key administrative functions. This analysis was done with a view to identifying opportunities and constraints for cross-regional learning.

Countries like those chosen in this case study that are emerging from internal conflict are characterised by volatile environments where:

1. There is a legacy of mistrust of government systems among major sections of the community;
2. Governance systems are stressed by the challenge of restoring services and rebuilding confidence, and generally use ad hoc rather than holistic approaches to policy;
3. Institutions are limited and generally under-funded;
4. Infrastructure (power, roads, telecommunication systems, etc) is limited or run down;
5. The level of expertise is limited due to skilled-labour migration and the breakdown in educational infrastructure and systems;
6. Populations tend to be illiterate and poor;
7. There is often a continuing potential for the eruption of violence, reducing thinking to the tactical instead of the strategic.

Failing to understand and recognize the vital role of ICT in supporting and accelerating state-building efforts and improving civil administration and delivery of services appears to be a common problem among developing countries. This lack of awareness of the power and potential of ICT to create enabling environments for development, coupled with the existence of competing development priorities to scarce national resources (e.g., agriculture, health, education), seem to be the origin of the misconception. Money spent on ICT development is associated more as a cost incurred on luxury items than a crucial investment made to put in place an information and communication infrastructure, together with useful tools for facilitating communication and interaction among government, development partners and stakeholders engaged in state-building endeavours.

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# II ETHIOPIAN COURT REFORM PROGRAMME

Gorfu Asefa, consultant<sup>1</sup>



## 1. Executive Summary

This case study takes a closer look at the use of ICT in court reform in Ethiopia. The findings of the research ascertain that the success of the court reform programme in Ethiopia was considerably accelerated by the innovative intervention of ICT to expedite the courts' business processes: improving information and record management capacity; conducting litigations online; increasing access to case and case related information to clients and researchers; and conducting mass training for judges and prosecutors. The role of ICT in the transformation process was basically enhanced by the introduction and utilization of new and improved procedures and systems in the operation and administration of courts including the institution of service standards and systems of work quantification and organization for effective planning and controlling of court activities.

In view of enabling developing nations to learn and draw lessons from the experiences and best practices obtained by the country's court reform programme, the case study attempted to provide accounts starting from the genesis and evolution of the judicial reform to the range of endeavours made by the Government of Ethiopia to create a conducive environment for the implementation of the programme and provide the necessary resources and supports as appropriate. Although the scope of this case study is limited to research and identification of the impacts created by ICT in the court reform programme, additional efforts were made to examine and include details of similar endeavours made in building and improving the capacity of justice institutions on the rationale that the court reform programme could not bear the desired fruits without the existence of an efficient and effective justice system.

## 2. Background

In a country like Ethiopia, the existence of rule of law is a prerequisite for the evolution of good governance and for ensuring that citizens constitutional and human rights are observed and respected by all government institutions serving citizens and public services at different levels. Strict adherence and respect to the principles of the rule of law deters from unnecessary government and officials interference on the operation of institutions providing public and citizen services, e.g., courts and justice institutions. Rule of law reigns when there is clear demarcation of power among the judiciary, the executive and legislative bodies of the government. When it is coupled with an efficiently and effectively operating judicial system, the rule of law provides assurance to the right to the due process of law that helps citizens build trust and confidence in the law of the state and encourages them to voluntarily participate in state-building efforts to ensure long-term and sustainable development. For this to happen, necessary institutional capacity and legal

frameworks need to be created and strengthened by combining the resources and efforts of governments, donor community and development stakeholders.

Prior to the advent of the federal system of government, court services were not accessible and affordable to citizens. Major courts such as Supreme and High Courts were located only in Addis Ababa, the capital. By virtue of the power vested in them by law the Supreme and High Courts had exclusive jurisdiction to hear and dispose cassation and appeal cases respectively. For this reason, citizens who needed to file such cases had to travel far from the district level to the capital - in most situations a journey covering hundreds of kilometres and in some cases more than a thousand kilometres by foot and by vehicle. As the process of opening case files and receiving appointments required them to spend many days in the capital, this exposed them to grave economic and social sufferings. The situation is even worse considering the number of appointments they needed to attend from time to time until the trial is concluded.

However, the creation of a federal system of government, each region under a federal government empowered to maintain similar justice and judicial structures is helping to alleviate this situation. Regions were made to have justice bureaus with similar function to that of Federal Ministry of Justice and an identical court system, i.e., Supreme Court, High Court, Woreda Court and First Instance City Courts. Although the decentralized justice structure helped to bring justice institutions closer to citizens, the judicial system in the country was suffering from a range of problems related to human, institutional, administration, systemic and procedural deficiencies. According to the outcome of the research commissioned by the World Bank, they included but were not limited to:

- Lack of transparent and clear guidelines for the recruitment and deployment of judges;
- Assignment of judges, prosecutors and support staff with inadequate qualifications and experience;
- Lack of adequate on-the-job-training or skill upgrading opportunities for judges, prosecutors and court administrative personnel;
- Lack of a system to hold judges and administrative personnel responsible for wrong doings;
- Interference of government in the limited independence of judges and courts;
- Lack of transparency of courts and justice institutions and existence of little or no awareness among the public about court procedures and operations;
- Inefficient file management systems and operational procedures has resulted in the huge pile up of backlogged case files;
- Interpretation of law is more dependent on experience than following court procedures, hence characterized by arbitrariness;
- Inefficient court administration due to the wide gap between judicial knowledge and the management skill needed to plan, monitor and evaluate court activities.

Recognizing the vital role the justice and judicial systems play in creating conducive and responsive environment for investment, sustainable development, and accelerating poverty reduction efforts, the Government of Ethiopia has initiated projects aiming at building the capacity of justice and judicial institutions and transforming the way they conduct their business and deliver services. These include the implementation of the court reform

1. Ethiopian Gorfu Asefa has extensive experience in providing IT-consultancy from UN-organizations, NGOs and to national governmental institutions.



programme in collaboration with the government of Canada (CIDA), the launching of the national court reform programme with the objective of replicating the best practices obtained from the Court Administration Reform in all courts in the country and the institution of the justice reform programme in order to build the capacity of justice institutions. During the implementation of these initiatives the use of information and communication technology (ICT) was central and vital to move the process forward in the right directions and obtain intended projects' outcomes of the reform programmes.

This report delineates the impact created by ICT on the rebuilding of the civil administration and services in the case of Ethiopian Court Reform Programme.

### 3. Defining the Framework of the Case Study

Although the judicial and justice reform programmes of Ethiopia have been on-going for years, little or nothing is known in the outside world about the success stories and best practices obtained regarding the innovative application of ICT solutions for renovating the way business is conducted and administered in courts; including the delivery of services with the aim of making court them accessible and affordable to the public in general and to the poor in particular. This case study reviews, identifies and documents best practices, lessons learned and impacts created as a result of the penetration and utilization of ICT for the court reform programme.

Although the use of ICT as a tool to accelerate state-building and civil administration and service reform programmes has wider implications in the case of Ethiopia, as noted earlier on, the scope of the research assignment is limited to reviewing, identifying and documenting the benefits obtained by the country through harnessing state-of-the-art ICT technologies for the court reform programme.

### 4. Methodology Used

In order to collect data and solicit input during field trips, the instruments designed and used for the research included: structured questionnaires, semi-structured interview questions, telephone enquiries, observations and consultations made to secondary data sources such as project documents, baseline study reports, workshop proceedings, newspaper articles and interviews, TV broadcasting content, websites, research papers, etc. Please see Annex 3 for the list of questionnaires and interview questions used.

Survey subjects approached for data collection included: court leaders, judges, prosecutors, court administration personnel, attorneys court clients, technical ICT personnel, justice institutions and other government and non-government institutions who are stakeholders in the court reform programme. In view of increasing the quality of data collected and to respond to questions that may arise on the questions contained in the questionnaires, in most cases, respondents were encouraged to complete the questionnaire in the presence of the consultant. In addition, in order to collect diverse and complimentary inputs, group discussions were conducted among court presidents, administrative personnel, prosecutors and judges. This strategy was found to be effective in soliciting good inputs on issues of common concern such as training, service standards<sup>2</sup>, performance measurement, quality control, etc.

Please see Annex 2 for the list of courts and institutions approached for data collection.

2. Each region has designed and implemented its own service standards as regards the number of files to be seen by judges on each working day, e.g., 25 files in the case of the Amhara region and 20 in SNNPR.

## 5. Research Findings

This section discusses the findings obtained after carefully analyzing and collating the data collected during the field trips conducted to different regions of the federal state. The findings provide detailed accounts on the rationale behind the need for the reform, the impact created by the use of ICT for expediting court activities including success stories, best practices and lessons learned along the process of the reform programme.

### 5.1 Genesis and Evolvement of the Reform Programme

Recognizing the crucial role that courts play in the realization of the rule of law, good governance and building a democratic system of government; the Government of Ethiopia has embarked on subsequent project endeavours geared towards transforming the way court services are organized and delivered to the public. According to the proceedings of the first workshop organized by the justice system reform programme office housed in the Ministry of Capacity Building, the problems that triggered the reform programme can be summarized as follows:

- a. The inability of courts to conform with the provisions of the constitution and to the new social, economic and political direction adopted by the country;
- b. The need to improve inefficient administration practices in judicial and justice institutions, improve the courts' backward filing system that caused delays and the huge pile up of backlogged cases, including changing the mind sets of judges and the courts' support staff about service delivery and client handling;
- c. The need to revitalize the system of training and course contents of law schools and legal training institutions in order to make them responsive to the country's short and long-term human resource requirements, including putting them in alignment with national and global realities and development.

Held at the United Nations Conference Centre (UNCC), Addis Ababa between 8 to 9 May 2003, the workshop was organized in collaboration with CIDA, UNDP, government and NGOs. Maximum efforts were made to bring together all the stakeholders that can contribute directly or indirectly to the success of the reform programme. Participants were drawn from federal and regional Supreme Courts, High Courts, Woreda Courts, Civil societies, Embassies, Ministry of Justice, Ministry Labor and Social Affairs, Anti-corruption Commission, Police, Prison administration, Universities and Private colleges, Justice and Legal System Research Institute, Bilateral and Multilateral organizations, Chambers, Legal experts and Attorneys at law. The objectives of the workshop included but were not limited to the following:

1. 1. to create a forum whereby the government's plans and future directions vis-à-vis judicial and the justice reform programme can be shared and discussed with stakeholders so as the latter can determine their interventions;
2. 2. to debate and reach consensus on the contents (objectives, action items, expected results, etc.) of the justice system reform programme document;
3. 3. to formulate strategies for implementing the reform programme that will be instrumental in building constitutional democracy and the rule of law where human rights are observed and respected.

The debate held among participants was strategically important in that it helped to build consensus on the way forward and the core issues to be dealt with, namely, the type of activities to be undertaken within the framework of the reform programme, the role and responsibility of justice institutions and other collaborators in translating the list of action items identified into concrete results, the institutional arrangement to be put in place and used for effective programme coordination and execution, strategies to be formulated and employed for forging strong partnerships with donors for resource mobilization, etc.

## 5.2 Government Endeavours Towards Implementing the Reform Programme

In view of implementing the recommendations of the workshop and in order to put in place an institutional framework that would be used to provide the necessary leadership and coordination during project implementation, the Government of Ethiopia established the Justice System Reform Program Office. As part of the preparation for the implementation of the reform programme, a baseline study was commissioned from a Netherlands company known as the Center for International Legal Cooperation (CILC), in 2005, to assess and document the status of judicial and justice institutions and identify their needs and problems. The baseline study also aimed at developing and documenting a baseline data that could be used in the future as a benchmark to determine the quantitative and qualitative changes brought about by the reform programme on strengthening the human and institutional capacity of institutions and improving their service delivery.

In short, the endeavour made by the government to build up the capacity of the judicial and justice institutions can be reviewed and presented based on the effort exerted to implement three independent but intimately related reform initiatives, namely the Court Administration Reform (CAR) project, the National Court Reform Project (NCRP) and the Justice System Reform Program (JSRP).

### 5.2.1 The Court Administration Reform (CAR) Initiative

The CAR project was implemented between 1995 and 2005 under the leadership of Federal Supreme Court. Although the intention was to implement the project up to lower level Woreda<sup>3</sup> Courts found in all regions of the federal government, it was not possible to do so due to lack of financial resources. The project aimed at improving the administration inefficiency and operational deficiency of federal and regional supreme and High Courts and First Instance Federal Courts located in two chartered city administrations in the Addis Ababa and Dire Dawa.

The activities of the project were carried out in two phases. Scheduled to take place between 1995 and 1999, the first phase kicked off by commissioning a study aimed at identifying weaknesses and bottlenecks that have impeded courts from providing efficient services, including assessing and determining their needs and priorities. Major achievements of this phase included: the design and implementation of the colour-coded filing system that drastically improved the manner by which case files are codified, organized, accessed and used. Implemented in all courts in the country, this system enabled court clerks to orderly orga-

nize case files using shelves, to easily identify a file misplaced or missing from the shelf and to quickly retrieve a file and make it available to clients, attorneys and judges as and when required.

In view of complementing this achievement, contracts were awarded to local ICT companies to develop and implement case file management database systems.<sup>4</sup> These databases were put to use in the courts embraced by the CAR project. These systems were instrumental for the radical transformation of the backward information processing and management practices in courts. Consequently, access to case information became easier and quicker, in addition to building up the capacity to generate diverse reports and collect statistical data on courts activities. As far as rolling out these systems to lower level courts, Woreda Courts, is concerned, the situation in some regions is far from desirable, e.g., SNNPR, Benshangul-Gumuz, Somali and Afar. In contrast, regions such as Amhara and Oromiya have achieved a great deal. For instance, out of its 154 Woreda Courts, the Supreme Court of SNNPR managed to implement the databases only in 13 courts. According to the President of North Shoa Zone High Court (Amhara region)<sup>5</sup>, 24 of the 30 Woreda Courts in the zone have enjoyed the benefits of using CRS. It was also learned that preparations are well underway to bring onboard the rest of the six Woredas. In addition, during the last week of December 2008, training was conducted on CCMS to participants drawn from all Woreda Courts as part of the plan to replace the existing CRS system by CCMS, a system with more and enhanced functionalities, capable of generating more reports on the activities of courts.

The introduction of digital recording<sup>6</sup> and transcribing technologies was a breakthrough for courts in that it transformed the way court proceedings have been captured, recorded and later transcribed using computers. These technologies proved to be effective in replacing the time-consuming handwritten note-taking practices of judges during court proceedings, e.g., witness hearings, preparation of summary court notes, orders and decisions. The following remark given by a practicing lawyer delineates the picture of past inefficient court practices: "Judgments were written by hand. Taping of court proceedings was nonexistent. Locating a certain file usually depended on the memory and good will of the clerical staff. The archives were not systematically organized. Information about the adjustment and contents of orders and judgments was not readily available."<sup>7</sup> Thanks to the intervention made, it was possible to increase court efficiency and to considerably reduce the delays in hearing and closing court cases and speeding up the clearance of backlogged cases that earlier resulted from inefficient court operation.

Many benefits were obtained by the courts from the second phase of the CAR project executed between 2000 to 2005. This phase was once again preceded by an evaluation study conducted to assess the effectiveness of the interventions made during the first phase to identify the gaps, if any. Among others, the study revealed that the endeavour made to improve court operations with the utilization of ICT can only be effective if it is accompanied by

3. There are more than 600 Woredas in the country. Due to the decentralization of administration down to Woreda level, Woredas are considered the basic unit of government in Ethiopia. In order to accelerate communication and interaction among Woredas and their regions and the federal government installed a VSAT-based WoredaNet infrastructure capable of providing Internet, website, directory, VC services. This facility is operational in more than 550 Woredas.

4. Three case files management database systems were developed and put to use with enhancements on functionalities. Bizsoft developed and implemented Court Reform System (SRS) and Case Management System (CMS) and by enhancing CMS, Cyber Soft developed and installed Court Case Management System (CCMS).

5. This court is located in Debre Berhan, 130 kms north of Addis Ababa. The distance between this court and its Woreda Courts ranges from 92 to 380 kms.

6. The recording machine is Sony Digital Recorder accompanied by camera and transcribing kit with a capacity of recording court proceedings up to 32 hours

7. [www.acdi-cida.gc.ca/cidaweb/](http://www.acdi-cida.gc.ca/cidaweb/) A Case for Justice

the necessary staff capacity building training interventions geared towards improving the performance and service delivery capacity of court personnel. Accordingly, training courses were organized and conducted for judges and court administrative personnel to enable them to acquire basic operational knowledge needed for the computers and applications, on understanding and responding to client needs and expectations, on effectively planning, implementing and monitoring court activities. New and improved court procedures, systems, service standards, work quantification and measurement mechanisms were designed and instituted to improve courts operation and administration. The overall outcome of these was that court staff came to know and understand their roles and responsibilities in the organization and the delivery of client-oriented services. Also the work relationships between judges and support personnel were enhanced.

The technological awareness created among court personnel was highly beneficial in nurturing positive attitudes towards subsequent implementation of ICT interventions. Other achievements include: the establishment of a Local Area Network (LAN) at Federal Supreme Court (FDC) and all the federal courts in Addis Ababa and Dire Dawa. This has created a conducive environment for linking federal courts systems with that of Federal Supreme Court which made their case database accessible and usable through its website.



Home page of the Federal Supreme Court website

The introduction of the Interactive Voice Response (IVR) system or touch-tone hotline phone service (992) again created an additional access point for obtaining quick information on the status of client cases, court orders, appointments, etc. The use of Video conferencing (VC) technology for conducting the court of appeals and cassations opened up a window of opportunity for the public to access online litigation services of High Courts and FSC without the need to travel to the location of these courts.



Setting up the VC court session at Hawassa Supreme Court



Federal Supreme Court Judges conducting court of cassation

During the field trips conducted in different regions, it became apparent that not all the regions are on an equal footing regarding the use of this innovative e-litigation solution. For instance, although it has finalized the necessary preparation, the Harari region could not start using the technology because of the long time taken to deliver the complete set of components required to set up the VC Station. According to the President of the Supreme Court, the service will commence soon as they have already received the missing parts. According to the information obtained from a prosecutor working in the East Hararge zone, preparations are well underway in the Oromiya region to start using this facility. A one-year schedule has already been worked out and disseminated to courts in the region. In comparison, the Amhara region has achieved a lot more in the use of VC facilities than the rest of the regions. For instance the North Shoa zone alone is delivering the service using the six VC Stations set up in collaboration with six Woreda capacity building bureaus<sup>8</sup>. In addition to conducting the litigation process, VC Stations are also used by regions for capacity building purposes, e.g., conducting a mass legal training course to assistant judges and prosecutors.

### 5.2.2 The National Court Reform Project (NCRP)

This project was designed and is being implemented in order to replicate the well tested and proven court reform results obtained from the implementation of the CAR project to the 727 Woreda Courts distributed all over the country. The implementation of this project is being led by the Federal Supreme Court (FSC). According to the website of FSC, “the project aspires to address existing deficiencies in Case Record keeping, Information Management, Training, Services Delivery and Recording and Transcribing of court proceedings... the reform is not limited to the above mentioned only, but also it is trying to address some key problems in civil and criminal justice systems<sup>9</sup>.”

In view of speeding up the replication process of the best practices and to lessen the burden of coordinating such a huge initiative of nation-wide coverage, on the part of FSC, it was decided to follow a decentralized implementation modality so that regions would be able to adopt and emulate the best practices by making the necessary adjustments based on their respective realities and particular situations (economic, cultural, traditions, etc.). According to the President of the Supreme Court, South Nations, Nationalities and People (NNPR) has already started implementing this with assistance secured from the Public Sector Capacity Building Program (PSCAP)<sup>10</sup>, e.g., the supply of computers, training of court staff, etc. The results obtained thus far by the Oromiya and Amhara regions, in this regard, are satisfactory.

### 5.2.3 The Justice System Reform Program (JSRP)

As part of the endeavour to build upon the achievements of the CAR project and recognizing the crucial role that the judicial system plays in accelerating the realization of good governance and the development of a democratic society, the government instituted the justice system reform programme with the objective of building and strengthening the human and institutional capacity of justice institutions.

As indicated earlier, the Justice System Reform Program JSRP, unlike the CAR project, is being financed from government sources within the framework of Public Sector Capacity Building Program. The justice system reform programme embraces about 34 justice institutions. The list includes but is not limited to the Ministry of Justice and justice bureaus found at different regional levels, all types of courts, ombudsman, anti-corruption commission, human rights organizations, the legislature, police, prison administration, legal research institutes, law schools. The outcome of the baseline survey conducted before the launch of the project disclosed that the level of utilization of ICT for systematically organizing and managing legal information across justice institutions was found to be very low. In this regard, the task of building the information and communication infrastructure and information systems of justice institutions has been accorded greater attention in the JSRP project in order to increase the penetration and utilization of ICT in the operation and service delivery of the institutions. The use of networks is believed to facilitate communication and information exchange between justice and judicial institutions, e.g., between prosecutors and courts, police and prosecutors, etc.

According to an expert working in the Justice and Legal Systems Research Institute, the programme components embraced by JSRP project include but not limited to improving law making and the consolidation capacity of the Ministry of Justice, improving judicial or court systems, improving the capacity of the executive (prosecutors, police and prisons), building the capacity of law schools and legal training centres and improving the justice information management capacity of justice institutions.

### 5.3 Pipeline ICT projects

The website developed and maintained by FSC has immensely facilitated the systematic organization and updating of legal/court information and disseminating this information to researchers and the public at large. Efforts are also well underway regarding the development of an information portal, a one-stop-shop, which would provide online access to the legal information and services of federal courts. To this effect, preparations are being finalized to float a bid to request bid proposals from eligible IT companies.

As part of the implementation of JSRP, efforts are being exerted by different justice institutions to develop electronic information resources management tools. Some of the pipeline ICT projects include: the development of a National Integrated Justice Information System Portal<sup>11</sup> that would serve as a clearing house for justice information and also providing Intranet and Extranet access to information resources owned and services maintained by justice institutions such as MoJ, police, ombudsman, human right organizations, etc. The implication of this project is huge in terms of enabling each justice institution to develop and maintain its own information resources and systems. Some of the institutions that already initiated this process include the Office of the Prosecutor, Federal Police, Anti Corruption Agency, etc.

Further to the use made of an SMS system, by FSC, to disseminate broadcast messages to the public, e.g., on how to access its revamped website, efforts are well underway to use the same system for sending mobile messages to summoned people to pick up their court summonses from specific locations.

8. The VC Stations are in the following Woredas: Alem Ketema, Arerty, Ataye, Bereket, Kewet and Mehal Meda.

9. [www.fsc.gov.et](http://www.fsc.gov.et)

10. The major objective of PSCAP is to improve the scale, efficiency and responsiveness of public service delivery at the federal and regional and local level; to empower citizens to participate more effectively in shaping their own development; and to promote good governance and accountability.

11. The work related to the development of this system is coordinated by the Justice and Legal System Research Institute. The project is a candidate for World Bank support. A Request for a Proposal document was prepared and submitted to the Bank for review and approval. They are waiting for the response to proceed.



## 6. Factors that Contributed to the Success of the Justice Reform

In order to complement the improvements brought about as a result of using ICT, the government has instituted the Business Process Re-engineering (BPR) exercise in order to restructure the work flow, to re-define job categories in the light of business process requirements, to make business processes of institutions responsive to client demands and aligned with the visions and missions of institutions. Together with the new and improved court procedures and systems, the outcome of this exercise has immensely transformed the face of the courts.

### 6.1 Institutional Collaboration

Harnessing ICT for state-building and civil administration, in the context of developing countries, could not be the business of one government agency as no single institution has at its disposal the required capacity to do so. Thus, coordinating the efforts and resources of institutions was crucially necessary in order to implement certain components of the court reform programme, e.g., using VC facilities for conducting online court sessions. In this regard, the commitment and cooperation exhibited by the six Woreda capacity building bureaus in north Shoa zone in terms of allowing the use of their ICT resources and personnel for Woreda courts by the courts of appeals and cassations was highly commendable.

The main challenge observed while attending VC court sessions carried out in different regions relates to the lack of adequate bandwidth capacity that brought about lack of voice-

video synchronization, lack of voice clarity and loss of signal. According to VC technicians, the voice-video synchronization can rarely be achieved. Thus most of the time, the voice mode only had to be switched on in order to continue the sessions. Figure 5 below depicts an event where the litigation process was interrupted due to signal loss. In such a case, technicians try to restore the session by dialling to the centre.

The other exemplary institutional collaboration worth considering is the generous cooperation of the Ethiopian Telecommunications Corporation

(ETC) in providing backbone technical support services for the VSAT and terrestrial based connectivity that provides the infrastructure for VC sessions, Internet connection, etc. This service is critical for the reform programme in that the latter was able to use the infrastructure and resources (VSAT and terrestrial connections) of the WoredaNet for introducing innovative e-litigation applications. These include: electronic submission of case files (e-filing), conducting court of appeal and cassation via VC, etc. Furthermore, the success of the court reform programme in computerizing remote Woreda Courts could not have materialized without the support and cooperation of the Ethiopian Electric Power Corpo-

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Struggling to restore a VC session at Arerity North Shoa Zone.

ration (EEPCO), which has done an excellent job in connecting the Woredas to the national power grid.

### 6.2 High-level Commitment and Leadership

At the macro level, the strong commitment and support provided by Government of Ethiopia in creating and putting in place conducive policy and institutional frameworks for the implementation of the justice reform programme has been critical of the results achieved, thus far, from the reform project. At the micro level, the commendable leadership and devotion exhibited by the Vice President of the Federal Supreme Court, Ato Menber Tsehay Tadesse and the dedication and hard work of his staff in spearheading the planning, implementation and monitoring of the CAB project needs to be applauded. Today the imprint of this tireless effort is evident from the modernized and efficient system of administration and service delivery of the courts where the project was implemented.

Moreover, during the field visit, a number of best practices resulted from individual and group efforts were witnessed. From these, however, the success stories of two individuals stand out most, namely Ato Atale Dosegnaw, President of North Shoa Zone High Court (Amhara) and Ato Measo Arkeba, President of Hawassa First Instance City Court (SNNPR). The firm allegiance and endeavour demonstrated by these individuals in championing the reform process was excellent and needs to be copied by others for achieving the visions and missions of the reform programme. More information on this can be found in Section 10.

## 7. Impact of ICT in the Court Reform Programme

The impact of ICTs for state-building in general and for judicial reform programmes in particular is quite visible from the value it added onto the operation and administration of courts. This achievement was mainly possible because of government's commitment and support. Evidence for this can be found in the elaboration and enforcement of national ICT

policies and strategies, the establishment of EICTDA, Ethiopian ICT Development Agency<sup>12</sup> and the incorporation of the ICT for development initiative under the public sector capacity building programme. As this case study aims at the identification and compilation of impacts created by the utilization of ICT in the court and justice reform programmes, this section outlines the range of impacts created related to the work of the courts as a result of ICT intervention.

### 7.1 Increased Efficiency and Accountability

The combined effect of the computerized case management system, recording and transcribing technology, the institutionalization of modern court procedures and systems and the improved capacity and productivity of judges and administrative personnel considerably impacted on the courts' efficiency and productivity. For instance, the average time taken to hear and conclude a case file was dropped from 3 years to 6 months in the case of High Courts and to four months in the case of Woreda Courts.

*The impact of ICTs for state-building in general and for judicial reform programmes in particular is quite visible from the value it added onto the operation and administration of courts. This achievement was mainly possible because of government's commitment and support.*

Unlike the situation prior to the reform programme where client cases were picked and dealt with randomly, the introduction of the case management database systems enabled courts to filter and prioritize cases for litigation based on the date of registration and the nature and type of the case filed. The importance of this is that some cases may require that defendants are released on bail whereas some are not due to

the seriousness of the case; again due to the lightweight nature of the case, some cases can be heard and ruled on the same day while others may require a longer period of litigation.

Moreover, the database provided courts with effective tools by which they can develop short and long-term activity plans to systematically manage and monitor operational and administrative issues. Mr. Measo Arkeba, President of Hawassa First Instance City Court stated that the CCMS database enabled his court to be able to do many things that were impossible before, e.g. "to assign workloads to its judges and administrative personnel, monitor and evaluate performances and above all facilitated planning of court activities."

He also disclosed that the evaluation made on the case summaries and decisions recorded in the database made it possible for courts to hold judges accountable for the quality of decisions they took on cases assigned to them. Moreover, the statistical reports obtained from the database have given useful indicators for measuring the judges' performance and for undertaking rigorous analysis on factors impacting on low performances, e.g., incomplete submission of evidence by clients or their attorneys, inability to present an adequate number of witnesses and the unexpectedly long period of litigation taken by some cases, etc.

12. Using its expertise on e-Government and Networking (e.g., maintaining the Data Center of the WoredaNet) the EICTDA is providing technical assistance for the various ICT projects being implemented in government institutions. For instance, it serves as a member of the steering committee designated by the MoJ to oversee project activities related to the development of National Integrated Justice Information System (NIJIS)

This, in turn, helped courts to effectively strategize on how to overcome these problems and further improve their performances.

Right after the completion of the second phase of the CAR project (October 2006), a group of experts delegated from the national court reform project office conducted a mission in the Amhara and Tigray regions. The objective of the mission was to assess whether the reform programme has been implemented as intended in general and whether the ICT products and systems introduced in the courts have increased their efficiency and brought about tangible results in the operation and administration. Table 1 and 2 below show summaries of the outcomes of the evaluation<sup>13</sup>.

| No. | Court Name                | Case Manag. Database |  |  | Recording & Transcribing |  |  | Photocopy of Court Decisions        |  |  |
|-----|---------------------------|----------------------|--|--|--------------------------|--|--|-------------------------------------|--|--|
| 1   | Supreme Court             | B                    |  |  | A                        |  |  | A                                   |  |  |
| 2   | Axum Central Zone Court   |                      |  |  | B                        |  |  | C                                   |  |  |
| 3   | Adwa City Woreda Court    | NA                   |  |  | NA                       |  |  | C                                   |  |  |
| 4   | Maichew City Woreda Court | NA                   |  |  | NA                       |  |  | Not functional due to lack of toner |  |  |

Table 1: Summary of Evaluation Made on the Performance of Courts in the Tigray Region

Key A = very good B = good C = adequate D = poor NA = Not available

| No. | Court Name                  | Case Manag. Database |    |   | Recording & Transcribing |   |   | Photocopy of Court Decisions |   |  |
|-----|-----------------------------|----------------------|----|---|--------------------------|---|---|------------------------------|---|--|
| 1   | Supreme Court               |                      | B  |   | A                        |   |   | A                            |   |  |
| 2   | East Gojam Zone High Court  |                      |    | C |                          | C |   |                              | C |  |
| 3   | West Gojam Zone High Court  | A                    |    |   | A                        |   |   | A                            |   |  |
| 4   | North Gojam Zone High Court |                      | B  |   |                          | B |   | B                            |   |  |
| 5   | Waghmra High Court          |                      | B  |   | A                        |   |   | B                            |   |  |
| 6   | South Wollo High Court      |                      | B  |   | A                        |   |   | A                            |   |  |
| 7   | Gozamn Woreda Court         |                      |    | C |                          | C |   |                              | C |  |
| 8   | Dangla Woreda Court         |                      | NA |   | B                        |   |   | B                            |   |  |
| 9   | Bahir Dar City Woreda Court |                      |    | C |                          | C |   | B                            |   |  |
| 10  | Fogera Woreda Court         |                      |    | C |                          |   | D |                              | C |  |
| 11  | Gondar City Woreda Court    |                      | B  |   | NA                       |   |   | B                            |   |  |
| 12  | Debarq Woreda Court         |                      |    | C |                          | C |   |                              | C |  |
| 13  | Se14qota Woreda Court       |                      |    | C |                          | C |   |                              | C |  |
| 14  | Bugna Woreda Court          |                      | B  |   |                          | B |   | B                            |   |  |
| 15  | Dessie Woreda Court         |                      | B  |   |                          | B |   | B                            |   |  |

Table 2: Summary of Evaluation Made on the Performance of Courts in the Amhara Region

Key A = very good B = good C = adequate D = poor NA = Not available

13. National Courts Reform Project Office. Report on the Assessment Made on the Results Obtained from the Court Reform Program in the Amhara and Tigray Regions, December 2006.

From the evaluation results exhibited in Table 2, it is apparent that the utilization status of the three ICT tools in the Amhara region is satisfactory contrary to the situation depicted by Table 1. Based on the data gathered from other sources, the utilization made to these resources in the Oromiya region is pretty much the same with the Amhara region. According to Mr. Sintayehu Mitiku, head of the ICT Department in the Federal Supreme Court, "...regions such as Benshangul-Gumuz have attached more importance and priority to strengthening the management and administration capacity of their courts than the automation aspect." But fortunately enough, the experience attained by those regions already embarked on automation could provide this region with a stock of best practices and lessons that it can draw on and learned from when it is ready to roll out the automation process.

## 7.2 Promoting Transparency

The use of ICT solutions and tools in courts has significantly promoted transparency. Unlike before, using pre-recorded audio and/or audio-visual information packages, courts are intensively engaged in raising client awareness on the purpose and objective of court reform projects, new procedures and systems instituted in the operation of courts, the steps clients need to follow when submitting their case files and follow up on the status of their cases, etc. Consequently, accessing and using court services has become simple

*The use of ICT solutions and tools in courts has significantly promoted transparency.*

and clear for the clients as a result of improved work flow systems and clear guidelines introduced into the work of the courts.

The simple nature of the innovative Touch-Screen Information Kiosk and website introduced by FSC have enabled clients to easily access

information on the status of their cases and if there is any additional information they need to submit during the next session on their case. Moreover, the information compiled in Amharic and posted on the FSC website provides information to the public on how the country's judicial system is structured, their jurisdictions including tips on what clients need to know regarding the court of appeal and cassation. Thus all these have unified and promoted the transparency of court procedures to clients.

Recording and transcribing equipment has greatly impacted on the litigation process and made information capturing and storing along the process of litigation more transparent than before, minimizing the incidents of the twisting of witnesses' testimonies given for or against defendants. Besides, the fact that litigants could request courts to replay recorded accounts of witnesses and court proceedings in the event where they believe that court decisions are erroneous, has made the work of courts more transparent and accountable.

## 7.3 Increased Accessibility to Courts' Information

The implementation of the case file management system has helped tremendously in making case information accessibly to clients, attorneys, researchers and law school students upon request. The fact that courts own and maintain heavy duty photocopy machines enabled them to significantly shorten the time required to issue copies of court decisions to clients and attorneys from months to days. Besides, the implementation of IVR system by FSC enabled clients dial a hotline number, 992, in order to access information on the status of their cases.

Access and use of information on court cases for law school and other legal trainees has been vital because it provided them with an online tool by which they can examine cases and draw lessons from the various issues considered during the litigation process, including the rationales behind the judgment. Moreover, access to the readily available case summaries for the judges to reference has had a positive impact in facilitating the litigation process, as judges do not need to re-invent the wheel regarding passing judgment on similar cases. Hence case databases and electronically stored records and documents are not only used for maintaining institutional memory but also as a knowledge base and tool for facilitating legal learning.

Furthermore, maintaining electronic file and record management systems considerably reduced the incidents by which clients' files and documents go missing and minimized the rampant corruption associated with the bribe that needs to be paid by clients [to court clerks] to get access to their case files from the pile up of files kept in a chaotic manner.

## 7.4 Cost and Time Saving

Prior to the advent of the federal system of government in Ethiopia, cases related to appeals and cassations had to be brought to the attention of the High and Supreme Courts located in Addis Ababa. This had made justice extremely expensive and also inflicted greater moral and economic crisis on citizens, as in most cases they had to stay in the capital until the trial is concluded. Although the institution of the federal system of government has given regional Supreme and High Courts the jurisdiction to hear and rule on such cases, citizens still had to travel long distances from their Woredas to High and Supreme Courts located in regions or zone capitals, hence, wasting considerable time and money. As the bulk of the cases presented for the court of appeals and cassations are related to rural land disputes, this has negatively impacted on farmers' productivity and contributed to lack of food security.

The use of e-litigation tools such as the VC technology has opened up a window of opportunity for citizens to electronically attend their cases hearings without travelling long distances from their Woredas, thus earning substantial savings on time and money, not

to mention other inconveniencies, e.g., not being able to attend filial duties. Table 3 below shows the total cost savings earned by court clients in North Shoa Zone due to the existence of six VC stations in the different Woredas of the zone.

| No.   | Date       | VC Stations | 1       | Case Type |      | 2   | 3   | 4  | 5   | 6      | 7         |
|-------|------------|-------------|---------|-----------|------|-----|-----|----|-----|--------|-----------|
|       |            |             |         | Civil     | Crim |     |     |    |     |        |           |
| 1     | 27/03/2007 | Arerty      | 265 kms | 13        | 3    | 16  | 16  | 3  | 19  | 200.00 | 3,800.00  |
| 2     | 1/09/2007  | Ataye       | 145 kms | 45        | 23   | 68  | 68  | 7  | 75  | 109.00 | 8,175.00  |
| 3     | 03/12/2008 | Kewet       | 92 kms  | 12        | 12   | 24  | 24  | 4  | 28  | 69.00  | 1,932.00  |
| 4     | 11/10/2008 | Merhabete   | 135 kms | 46        | 22   | 68  | 68  | 7  | 75  | 102.00 | 7,650.00  |
| 5     | 20/11/2008 | Mehal Meda  | 150 kms | 23        | 10   | 33  | 33  | 3  | 36  | 113.00 | 4,068.00  |
| 6     | 4/12/2008  | Bereket     | 380 kms | 21        | 0    | 21  | 21  | 0  | 21  | 287.00 | 6,027.00  |
| Total |            |             |         | 160       | 70   | 230 | 230 | 24 | 254 | 880    | 31,652.00 |

Table 3: Summary of cost savings earned by court clients in North Shoa Zone

Key: 1. Distance from Centre<sup>14</sup> 2. Total No. of Cases  
3. No. of Litigants 4. No. of Guard Police(s)  
5. Total No. of Persons 6. Estimated Cost/Client/day in birr<sup>15</sup>  
7. Total Savings in birr

The e-filing service, which is being piloted in two regional capitals Mekelle and Hawassa, has enabled court clients to avoid travel costs and save time. Using this tool, clients will electronically submit their files to the court of cassation<sup>16</sup> at FSC in Addis Ababa over the Internet. Subject to further scrutiny by FSC, documents submitted by clients will be first checked by judges at the regional Supreme Courts to verify their completeness. Once the submission is proved to be complete, it will be scanned and uploaded onto the e-filing webpage to be downloaded by FSC technical personnel for further processing.

### 7.5 Increased Client Satisfaction

Based on the data collected by interviewing clients sitting in the waiting rooms of courts visited, clients were found to be mainly happy with two kinds of changes they witnessed in the operation and performance of courts. First, with the level of efficiency and client-orientation demonstrated by courts personnel while receiving and registering applications, providing appointments, and responding to requests made to know case related information. Second, with the ability of courts to expedite the hearing and disposing of cases with no more delay. They also found the awareness creation programme being conducted by courts every morning extremely important to them in that they came to know things that they were ignorant of, namely about the court reform programme, about the procedures they need to follow in the court including where to go and what to do. The degree of satisfaction is more evident and apparent in the case of services rendered by courts where a one-stop-shop workflow structure is introduced using a room or hall where

14. Distance that the court client needs to travel to the centre, Debre Berhan in search of court services related to appeals and cassations.  
15. On average one client should spend two travel days and one more day for court attendance. Therefore, the average expenditure for this will be in the region of 200 birr.  
16. This case is submitted to the Federal Supreme Court when defendants feel that a basic error has been committed in the interpretation of the law by the court that gave the ruling over the case.

service desks are arranged in accordance with the order of the workflow, e.g., Hawassa First Instance City Court.

Moreover, due to its ability to bring court services closer to clients and avoiding travel to far away places, the use of VC facilities for conducting court sessions has increased client satisfaction with the reform programme. Two clients who came from Shenkora, to the Arerty VC Station to attend the court of appeal through VC commented that “the Plasma came at the right time when they are short of money to pay for their travel to Debre Berhan [the zone] due to the unsatisfactory harvest they got from subsequent years.” Given the number of travels they need to do from the start from a case opening file to its conclusion, the cost and time savings advantage derived from the technology is of great value to them. Another female client interviewed at the e-filing room of the SNNPR Supreme Court sarcastically remarked that “the technology is prohibiting them from going to Sheger [another name for Addis Ababa]”. Farmers encountered in the East Hararge High Court disclosed that as a result of the less time they spent in the courts than before, they were able to get more time to work on their farms and attend to their social duties as fathers and members of the society.

Moreover, due to its ability to bring court services closer to clients and avoiding travel to far away places, the use of VC facilities for conducting court sessions has increased client satisfaction with the reform programme.

### 7.6 Harnessing ICT for Training and Experience Sharing

Computers and VC have been widely used by each region for conducting training courses. The VC particularly is being used extensively to conduct mass on-line legal training courses for judges and prosecutors (Oromiya, Harari Teacher Training Institute, Federal Legal Training Institute, etc.). With the help of the technology, it was possible to train and deploy thousands of judges and prosecutors to Woreda and other courts. VC sessions are also periodically held for sharing experiences and best practices among staff of Woreda Courts, a practice that facilitated exchange of ideas among courts on problems encountered and the solutions used to overcome or alleviate them. The experience sharing forum conducted over VC was highly useful for Woreda technicians in terms of sharing information on the type and nature of technical difficulties they encountered during court sessions held over the VC facility and the steps they had undergone in order to troubleshoot and solve the problems. In both cases, the impact of the technology in facilitating peer-to-peer learning and cross-fertilization has been great. During the evaluation mission carried out to Amhara and Tigray regions (page 23), the use of audio-visual materials to show a 20 minute documentary film was very much useful for sharing the experiences and success stories of FSC to the staff of each court visited and evaluated.

## 8. Discussion and Lessons

There are a number of lessons learned along the course of the reform programme. These include but are not limited to the following:



- It was learned that the efforts in harnessing the power and potentials of ICT for expediting the accomplishment of the courts' business processes can only bear fruit if it is accompanied by capacity building training interventions to help court personnel acquire new skills and knowledge, change their mindset about clients and

*It was learned that the efforts in harnessing the power and potentials of ICT for expediting the accomplishment of the courts' business processes can only bear fruit if it is accompanied by capacity building training interventions*

delivery of services and learn about new and improved workflows, procedures and systems introduced into the courts.

- The best practices obtained regarding institutional collaboration taught that the use of ICT for state-building and the improvement of civil administration services like the court reform programme necessitates the mobili-

zation and use of resources from different government agencies. Because no single government institution can fulfil all the required technical resources (equipment, manpower, etc.) needed for effectively implementing such initiatives.

- The process of introducing VC for conducting online court sessions on cases related to appeal and cassation initially encountered resistance from some judges who were cynical about the ability of the technology to deliver. This problem was overcome not by taking administrative measures to forcefully make the judges accept the changes but by constructively discussing the issue with them and helping them learn from live sessions, about the benefits than can be obtained from such technological intervention, e.g., avoiding the need for travelling long distances and saving the time and money of stakeholders involved in the process (litigants, judges, prison police, etc).
- The emergence of individual champions with strong commitment and effective leadership qualities was extremely useful for the creation of model court sites with exceptionally outstanding performance and best practices that can be showcased for inspiring and motivating others for better performance and results. For instance, due to the tireless effort of the President of North Shoa Zone High Court, an effective partnership was forged and galvanized with the bureau of capacity building in order to establish and maintain six VC Stations for conducting online court sessions of appeals and cassations. For instance, it was possible to make a total savings of 448,563 ETB out of the court sessions conducted through VC between 11 Dec. 2007 and 4 Dec. 2008, needless to mention the substantial savings made on the time of litigants, judges that needed to conduct mobile courts and the police escorting the defendants from prisons. The other best practice relates to the effectiveness of the leadership provided by the President of Hawassa First Instance City Court (SNNPR) in combining the business process re-engineering exercises with the reform programme so as to boost the impact created by the latter. Consequently, the court has become a model in the region from which others can learn and draw a lesson from, especially as regards to shortening service delivery time from one month to 30 minutes and later down to 10 minutes; attaining progressively high

performance rates - from 93.07% in 2006 to 98% in 2007 with ultimate goal of achieving 100% in 2008.

- The fact that the database solutions were designed and developed by local IT companies has enabled a fast maintenance response-time to support requests made by courts during time of difficulties. It also helped to maintain a conducive environment whereby companies can work closely with courts, without being constrained by distance and travel inconveniences as in the case of foreign companies, on issues related to continuously overseeing the performance of the system and assess its adequacy in meeting the courts' application requirements and work and incorporate enhancements as appropriate to make the database as relevant and responsive as possible.

The improvement attained in the courts' operation, administration and service delivery, by no means, should be overstated as the impact did not yet reach to the lower level Woreda and Sheriya Courts (about 727 of them) where huge and complex court cases exist (e.g., family cases related to inheritance of properties, land dispute, etc.).

The success of the court reform programme was made possible as a result of combining the power and potentials of ICT technologies with improved and modern court procedures and systems; improved capacity to perform and deliver services, including a change of attitude towards customers and services; and bringing about better work relationships among court personnel, etc. Nevertheless, due to budget restrictions, the benefits of the court reform programme are confined only to higher-level courts, e.g. Supreme and High Courts.

The impacts created by improving the way courts conduct their businesses and deliver services in general and by the introduction and use of ICT products and solutions in courts in particular are of substantial value in changing the face of courts and for making them more easily accessible and affordable. However, these gains are being seriously constrained by certain shortcomings, e.g., shortage of qualified and experienced judges, prosecutors, administration and support personnel; lack of clear guidelines for the recruitment and deployment of judges; lack of proper office setup and infrastructure; lack of custom-built court rooms, etc. This is evident from the comment given by one of the respondents: "the office problem does not allow the court to effectively implement the improved workflow structure designed for speeding up delivery of services to clients." Thus, in order to further boost the quality of results obtained from the CAR project, it is imperative that the government together with all the stakeholders at different levels join efforts in order to address these problems and bridge the gap to enhance the achievements of the reform programme.

## 9. Recommendations

As a result of the study and observations made to the overall court reform programme in general and the intervention made to use ICT to enhance the effectiveness of the reform programme, the following recommendations are made:

- The stock of success stories, best practices and lessons learned from the implementation court reform programme are of great value and importance to the efforts being made to replicate them in the other 727 courts at the national level. However, even after three years the completion of the CAR project, no major study was con-

ducted to properly document them for further use and reference. The only evidence found is the report of the evaluation carried out in 2005, in the Tigray and Amhara regions. Thus, it is necessary to undertake a comprehensive survey covering all courts at federal and regional level where the reform is implemented.

- The problems observed during the survey are of varied nature and magnitude. These include, but are not limited to the lack of qualified and experienced judges, prosecutors and support personnel; and inexistence of conducive office setups and infrastructures. The lack of offices in particular created obstacles to the effective implementation of improved workflow structures. The fact that most of these problems are beyond the reach of the courts' budget seem to make them intractable. Due to the huge volume of financial resources required to fill these gaps, it does not seem viable for the government to meet these challenges alone. Thus, it is essential for the government to make efforts in mobilizing resources from donors.
- The measures taken by the government to use ICT solutions for e-litigation is highly commendable in terms of increasing the accessibility and affordability of court services to the poor. However, no amendment was so far made to the law of the land to incorporate articles (provisions) that would legalize and acknowledge the use of such technologies for the litigation process and of course for others. Therefore, it is imperative that the parliament treats this and other IT related matters as a priority and initiate the process of amending associated laws of the country to provide a legal framework for the application and utilization of ICT in the judicial and justice systems.
- In each court, only one person, mostly secretaries, was trained and deployed for populating and managing the case management database system. This potentially puts courts in a difficult position, because reliance on a single person's skill and experience may create a sense of indispensability and courts may face difficulties

*In each court, only one person, mostly secretaries, was trained and deployed for populating and managing the case management database system. This potentially puts courts in a difficult position, because reliance on a single person's skill and experience may create a sense of indispensability.*

when this staff member is unable to perform his/her duties due to sickness or any other personal reasons, or in the event of resigning. Therefore, it should be a high imperative for courts to make IT and database management training available to more staff members so that they can overcome the problems mentioned earlier. Related to this is the need to provide database access and user training to judges and court leaders, e.g., presidents and heads of administration, so that they could be able to manipulate

the database independently when they need information on cases and other electronic documents.

- For effective utilization of VC and other IP based applications, it is essential to address problems related to connectivity and IT human resources. In this regard, the need to recruit deploy qualified and skilled IT and telecommunication experts, say



at least three for each zone, is recommended. The availability of such expertise will be advantageous to the professional understanding, diagnosis and communicating of connectivity problems to ETC technicians at the time of using VC and other ITC solutions for court services. Moreover, the existence of such a pool of technical expertise at zone level will be of vital importance in order to quickly shuttle technicians to fix technical problems that may arise from VC Stations operating at Woreda level. If the problems observed in the case of VC utilization persist, it may discourage litigants, judges, and technical staff and may potentially affect the positive attitude developed and maintained by the public towards the enabling effects of ICT.

- As noted earlier, all the VC Stations belong to Woreda capacity building bureaus. Besides, the halls where the VC sessions are carried out are not suitable for court sessions. Thus as these facilities are extensively being used by the capacity bureaus for different purposes such as legal training, political indoctrination, community development, scheduling conflicts are common between these and the needs of the courts. Therefore, establishing one VC Station, within a custom-built hall, for five Woredas looks to be a good solution in order to enable courts to conveniently conduct VC sessions in accordance to their time-tables. The intervention of the JSRP project and/or donors assistance is essential to fill this gap.
- Finally, the five digits assigned for the colour coded filing system are good enough to accommodate up to 99999 records related to court cases. However, by extending the number of digits to 6, it is possible to use the first digit to designate the type of the case (e.g., A for civil cases, B for criminal cases, C for labour cases). Harmonization of the codification of files across the nation seems necessary by increasing additional digits to denote the region and Woreda the case file belongs to. Because this is extremely important in the event of a consolidated national case management database being created and put to use for public access and search. If for instance the additional two digits are assigned to represent the region and the Woreda respectively, one can easily tell where the file is from.

### III POPULATION REGISTRATION SYSTEMS IN UGANDA

Knowledge Consulting Ltd. Uganda<sup>17</sup>

#### 1. Executive Summary

This case study examines the use of ICT in population registration systems in Uganda. Three governmental bodies involved in the registration process are examined: the Uganda Bureau of Statistics, the Electoral Commission and the Directorate of Citizenship and Immigration.

The implementation of any ICT initiative in a post-conflict country like Uganda imposes challenges above the ordinarily layers of challenge found in more developed and stable economies: policy, laws, institutions, people, human capacity, and infrastructure.

The government of Uganda has recognized the importance of ICT as a tool for development, and the government has resolved to promote its deployment. One of the most recent

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culminations of this commitment is the creation of a full-fledged Ministry of ICT (MoICT)<sup>18</sup>. However, the ICT sector is covered by a multiplicity of policies, laws, and institutions most of which have now been aggregated under the recently created Ministry of ICT.

Instability in Uganda dates back to 1981 as a result of the extensive electoral fraud during the national

elections that year. The accuracy of population statistics, identification of bona fide citizens, and a correct Voters Register remain very sensitive issues, and the government has put a lot of emphasis on creating confidence in this respect.

This case study provides recommendations that other post-conflict countries could draw from. At the policy level, a holistic approach that takes into account all the needs of the various governmental stakeholders is critical. This is the starting point for coordinated laws and institutions that will enable successful implementation. This is not to say that there should be a monolithic institution, but to assert that institutions must work in clusters, following, for example, the success of collaboration in countries like Rwanda.

The choice of technology must also be approached in a holistic fashion. Smart cards, for example, would have to be considered hand in hand with the data communication infrastructure, as well as the point of use equipment and the combined linkage to a central database.

The level of literacy also has an impact on the choice of technology and the mode of publication. While there were gaps in implementation, the publication of the physical Voters Register with indentity photographs is the best approach for Uganda in its current state. It recognized the limitations in literacy and, even for the literate, the limited means of online access. Technical human capacity is also a key element of successful implementation, and should indeed be a step ahead of other activities in the implementation process.

Opportunities to exploit resources generated using advanced technologies that would themselves be beyond Uganda's internal capacity should also be identified. The use of GPS systems and satellite imagery in the Uganda Bureau of Statistics is a good illustration of this.

The private sector has a key role to play, and many activities in the population registration systems can be outsourced to the private sector working under supervision for assurance of integrity.

#### 2. Background

##### 2.1 Uganda

| Category                    | Detail  |
|-----------------------------|---|
| Full name                   | Republic of Uganda  |
| Population                  | 30.9 million (UN, 2007)   |
| Capital                     | Kampala   |
| Area                        | 241,038 sq km (93,072 sq miles)   |
| Major languages             | English (official), Swahili (official), Luganda, various Bantu languages  |
| Major religions             | Christianity, Islam   |
| Life expectancy             | 51 years (men), 52 years (women) (UN)                                     |
| Monetary unit               | 1 Ugandan shilling = 100 cents  |
| Main exports                | Coffee, fish and fish products, tea; tobacco, cotton, corn, beans, sesame |
| GNI per capita              | US \$340 (World Bank, 2007)   |
| Internet domain             | Ug  |
| International dialling code | +256  |

Table 1: Quick facts about Uganda<sup>19</sup>

Uganda is a landlocked country that straddles the equator in East Africa covering an area of about 241,038 sq km. It is bordered to the east by Kenya, to the north by Sudan, to the west by the Democratic Republic of the Congo, to the southwest by Rwanda, and to the south by Tanzania. The southern part of the country includes a substantial portion of Lake Victoria, within which it shares borders with Kenya and Tanzania. Kampala is the capital city and the seat of government.

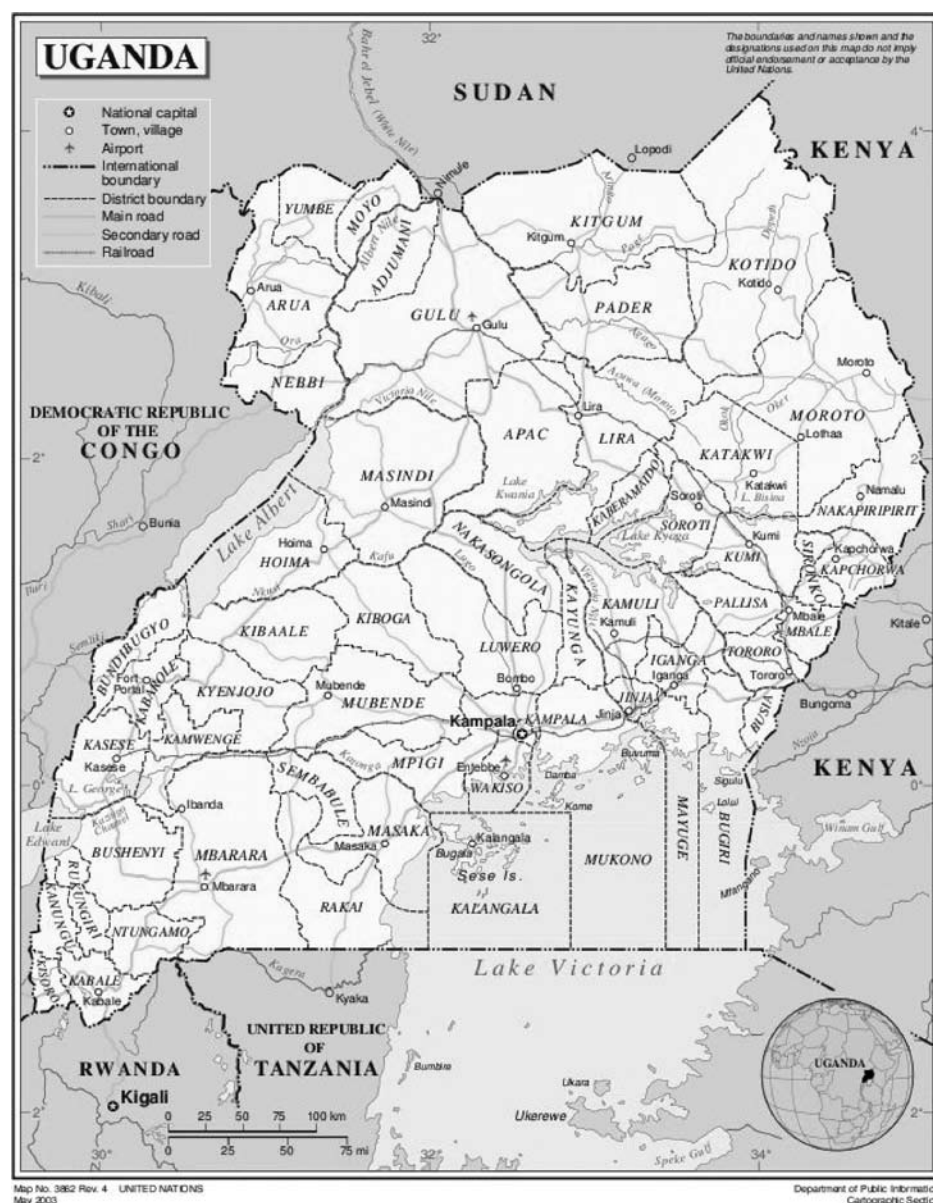
Uganda is home to many different ethnic groups, none of whom form a majority of the population. Around forty different languages are regularly and currently in use in the country. English became the official language of Uganda after independence. Swahili - widely spoken in Eastern Africa - was recently adopted (2005) as a second official language; its usage in Uganda is still de facto limited to the armed forces.

17. Knowledge Consulting Ltd. Uganda (KCL) specializes in ICT-consulting and has, for example, conducted research into various aspects of ICT for development. KCL has supported policy and regulatory analysis and development as well as capacity building for policymakers and regulators in Africa and in other parts of world.

18. The Ministry of ICT can be found online at [www.ict.go.ug](http://www.ict.go.ug)

19. <http://data.un.org/Search.aspx?q=uganda> , [http://devdata.worldbank-org/AAG/uga\\_aag.pdf](http://devdata.worldbank-org/AAG/uga_aag.pdf)





Map of Uganda showing her boundaries, neighbours and some of the major towns

Source: UN Cartographic Section Uganda, no. 3862 Rev. 4 May 2003.

### 2.1.1 ICT in Uganda

| Category   | Year | Detail |
|--|------|--------|
| Fixed telephone lines per 100 inhabitants          | 2007 | 0.53   |
| Mobile Cellular subscribers per 100 inhabitants    | 2007 | 13.58  |
| Computers per 100 inhabitants                      | 2006 | 1.67   |
| Internet users per 100 inhabitants                 | 2006 | 2.51   |
| Broadband Internet subscribers per 100 inhabitants | 2007 | 0.01   |
| International Internet bandwidth (Mbps)            | 2007 | 334    |
| Radio sets per 100 inhabitants                     | 2002 | 15.49  |
| TV sets per 100 inhabitants                        | 2006 | 2.18   |
| % population covered by mobile signal              | 2007 | 80     |

Table 2: Quick ICT access statistics for Uganda (Source: ITU ICT Eye, 2008)

The government of Uganda has recognised the importance of ICT as a tool for development, and it has resolved to promote its deployment. One of the most recent culminations of this commitment is the creation of a full-fledged Ministry of ICT (MoICT)<sup>20</sup> to spearhead national planning, coordination, implementation and use of ICT in the development of the country.

The national ICT vision is to achieve “national development, especially human development and good governance” in a sustainable manner supported by the “efficient application and use of ICT, including timely access to information.” As part of the national ICT policy framework, the government of Uganda has given a mandate to individual sectors, led by their parent Ministries, to develop sector-specific ICT policy statements that will guide deployment and use of ICT to meet their sector objectives. While the goal is to see a “quantifiable impact” of using ICT by 2016, the latent potential of leveraging ICT, particularly in government activities is yet to be fully realized. This is partly a result of inadequate PCs for staff, and partly due to lack of skilled and experienced staff to manage ICT resources, all compounded by the challenge of sustainability. Non-resource challenges include the mindset of a typical civil servant towards new ways of working as well as lack of enabling policies.

The current status of ICT in Uganda has been influenced by the following key policies and legal instruments:

- The Electronic Media Statute (1996)–which created a licensing system, under the Broadcasting Council for radio and television stations<sup>21</sup>
- The Uganda Communications Act (1997)–that established and guides the regulatory activities of the Uganda Communication Commission<sup>22</sup>
- The Rural Communications Development Policy (2001)–which seeks to ensure equitable access to basic communication services with a reasonable distance and cost to all people of Uganda. This has since expired and a new version is currently under discussion<sup>23</sup>
- The National ICT Policy, currently being revised–that will guide government through systematic integration of ICT
- The Revised Telecommunications Sector Policy that provides the framework for full liberalization and transition to e-government/e-governance.

20. The Ministry of ICT can be found online at [www.ict.go.ug](http://www.ict.go.ug)

21. Uganda Government (1996). "The Electronic Media Statute." Uganda Gazette, XCVII. Kampala, Uganda.

22. Uganda Government (1997). "Uganda Communications Act." Uganda Gazette, XC. Kampala, Uganda.

23. Uganda Government (2001). "Rural Communications Development Policy." Uganda Communications Commission. Kampala, Uganda.



The government has also moved to aggregate the different elements of ICT under Ministry of ICT, increasing the profile of ICT in its activities. Content related to ICT has emerged in national planning documents like Vision 2035 (the planned successor to Vision 2025) and the Poverty Eradication Action Programme (PEAP).<sup>24 25</sup>

Other key institutions in the context of ICT within the country, besides the Ministry of ICT include:

- The Uganda Communications Commission (UCC)<sup>26</sup>—the national telecommunications regulator in Uganda
- National Information Technology Authority (NITA)—a nascent body that was created by transforming Uganda Computer Services (UCS), a department of the Ministry of Finance, Planning and Economic Development (MoFPED). Its role will include the management, coordination and monitoring of ICT policy and ICT utilization within various government departments

### 3. Defining the Framework of the Case Study

This case study uses population registration systems in Uganda as an example to articulate the opportunities and challenges inherent in using ICT for specific administrative functions.

In stable environments, the successful deployment of ICT requires cognisance of key implementation layers to maximize the likelihood of success: the challenge is even greater in an environment experiencing fragility. The key implementation layers include:

- i. The policy layer, defining the vision and the boundaries: What is the motivation for using ICT, and how does it contribute to organizational vision and strategic priorities? A clear policy layer creates the environment for success. Apart from clarity of policy and policy objectives, support at the highest policy level is a critical ingredient for success.
- ii. The legal layer (definition of authority in organizations): What laws are required to enable the implementation of the initiative? What laws in existence will impact on implementation, both negatively and positively? Which laws are barriers and need to be modified? Insufficiency, lack of clarity, or contradictions in legislated authority can either disable initiatives, or become weapons in the hands of those who, often for personal reasons, want to block the initiatives.
- iii. Institutional layer: What kind or organizational set-up is required to implement what has been legislated in order to achieve the policy objectives? Sustainability of initiatives depends a lot on the nature, structure, and resources of the implementing institution.
- iv. People layer: Who will the specific players be? How will they impact on, or be impacted upon by implementation? The people layer must address all stakeholders - for example the population where a government ICT initiative is going to be implemented. The people layer has the highest inertia, and is the inevitable source of resistance if key players are not brought on board in the early stages. Business process rede-

sign (BPR), required in the implementation of ICT in a going organization, results in streamlining of organizations, re-alignment of power relationships, and job losses. BPR is therefore always resisted by people.

- v. Capacity (skills and capabilities) layer: What skills and capabilities will be required in the people layer? This applies to skills and capabilities to design, implement, operate and maintain; and end-user skills. The first set of skills applies to the professionals in the implementing institution, while the second applies to users both internal and external to the implementing institution.
- vi. Infrastructure layer: What infrastructure is required for the implementation? ICT is dynamic, and a careful balance is required between the high cost of the latest technology, capacity and skills, and the risk of obsolescence (for older but tested technology)
- vii. Timeline and cost: What is the implementation time-frame? What defines the timeline? What funding is required? For example, deadlines for elections are normally defined by the national constitution. This in turn sets a timeframe within which an electoral register and voters cards must be prepared.
- viii. The private sector environment: What opportunities exist for interfacing with the private sector environment and initiatives? The private sector, if properly and transparently utilized, often creates an opportunity for efficiency and cost-effectiveness, leaving government (or any other organization) to focus on its core mandate: The challenges around layers (iii) - (viii) are transferred to the private sector.

In this case study, the policy, social and economic environment within which the population registration systems have been implemented or attempted is examined. Then the actual initiative is examined - within the context of the framework given in this section - to find a basis for identifying lessons that can support the development of tool-kits envisaged by the overall study.

The intent is to highlight the challenges that exist, and to discuss the opportunities that can be leveraged to empower governments to operate in a more efficient, cost effective and transparent manner.

### 4. Methodology

This case study was restricted to Uganda and the study of a specific case—the use of ICT in population registration systems. Desk research, enhanced by knowledge and insight of the researchers, was used to obtain background information and create a reliable baseline (the overall context of ICT at the national level) onto which to build. An instrument was then designed and used to guide structured interviews with selected participants in selected organizations relevant to the cases.

#### Desk Research

Primary sources employed at this level included online resources and publications of governmental as well as non-governmental organizations. We also identified the following institutions in Uganda that are, in one way or another, impact on or need information about population data:

24. Uganda Government (1998). "Poverty Eradication action Plan" Volume 2, Ministry of Finance, Planning and Economic Development. Kampala, Uganda

25. Tsubira F.F. et al. (2006). "Uganda Telecommunications Sector Review"

26. Uganda Communications Commission can be found online at [www.ucc.co.ug](http://www.ucc.co.ug)

- i. The Directorate for Citizenship and Immigration of the Ministry of Internal Affairs (MoIA)–responsible for registration and issuance of identity cards to nationals and immigrants; issuance of Uganda travel documents; granting and cancelling citizenship; and granting and cancelling immigration permits.
- ii. Uganda Electoral Commission (EC)–the government body mandated to organize elections and referenda and is the only one that to-date that has attempted to carry out comprehensive registration of all adults for purposes of creating a voter register.
- iii. Office of the Prime Minister–responsible for restoring normalcy in areas affected by war, particularly in Northern Uganda.
- iv. Uganda Bureau of Statistics (UBOS)–mandated for national statistical data.
- v. Ministry of ICT (MoICT)–responsible for the policy framework and monitoring public and private ICT initiatives.
- vi. The Uganda Communications Commission (UCC)–the independent national telecommunications regulator in Uganda.
- vii. Uganda Registration Services Bureau (URSB)–newly created entity mandated to carry out registrations for births, deaths, marriages, patents, trademarks, companies and documents.
- viii. National Information Technology Authority (NITA)–a nascent body whose role will include management, coordination and monitoring ICT policy and ICT utilization within various government departments.

Preliminary contact was then made by phone or face to face with each of the selected institutions to determine whether they played any role in the specific cases of interest, resulting in shortened lists of organizations to be interviewed:

- i. The Directorate for Citizenship and Immigration of the Ministry of Internal Affairs (MoIA);
- ii. Uganda Electoral Commission (EC);
- iii. Uganda Bureau of Statistics (UBOS).

#### Questionnaire design and interviews

A questionnaire was designed to guide data collection based on semi-structured interviews with key personnel from selected institutions identified for the case studies. The instrument covers general information on the institutions, nature and types of ICTs they deploy, different kinds of software applications that they use as well as ICT usage costs associated with supporting different usage scenarios. The interviews also sought to bring out best practices and challenges.

Most interviews were conducted at the interviewee's place of work and the instrument was used as a loose guide for the discussion.

#### Constraints

Really more of a challenge than a constraint is the fact that in many cases, the information sought was not the preserve of a single individual, necessitating cross-references and follow up of other staff in a given institution. There was however cooperation across the board in identifying and getting to other individuals who could fill in data gaps or give important insights.

## 5. Population Registration Systems

Population registration systems in Uganda are spread across a number of different government agencies. These handle different aspects of population registration that relate to their mandate and some of their activities tend to overlap. Each agency derives its mandate from the various laws that gave birth to it and in some instances laws and regulations that govern the agency's ongoing activities. Although the overlap in activities does suggest potential synergies, there is not much collaboration and information sharing amongst the various agencies.

Some of the most relevant agencies involved population registration activities in Uganda include:

- Uganda Bureau of Statistics (UBOS)–creates maps indicating the location and boundaries of the various administrative units, carries out population surveys as well as estimates that form the basis of estimating the population above 18 years of age, eligible to vote.
- Electoral Commission (EC)–registers eligible votes all over the country to create a national register and organizes various elections and referenda based on the national register.
- Uganda Registration Services Bureau (URSB)–developed out of the Office of the Registrar General in the Ministry of Justice and Constitutional Affairs (MoJCA)<sup>27</sup> as an attempt to revitalize the civil registration programme (primarily birth, deaths and marriages) that collapsed in the 1970s. Based on the decentralized operations in the districts, this semi-autonomous unit is facing funding challenges despite contributions from other entities like UNICEF.
- Directorate for Citizenship and Immigration (DCI)–currently monitors and controls the movement of persons in and out of Uganda. It issues passports and other travel documents to people and will play a role in the national ID process.

In the subsequent sections, we explore the different roles and activities performed by each of these agencies in relation to population registration in Uganda. Given that each agency's mandate goes beyond population registration, their other activities are mentioned in context and emphasis is placed around their population registration function.

### 5.1 Uganda Bureau of Statistics (UBOS)

Formerly a Statistics Department under the Ministry of Finance, Planning and Economic Development, Uganda Bureau of Statistics (UBOS) was transformed into a semi-autonomous body whose role is to act as “as the principal data collecting and disseminating agency responsible for coordinating, monitoring and supervising the National Statistical System.”<sup>28</sup> The move was championed by government, which increasingly appreciated the need for good statistics that would help inform better policy decisions as well as support the planning process to spur economic, social and political development of the country. Various development partners like the World Bank and DFID were also pushing for evidence-based policy making and did provide some resources towards this change.

27. Ministry of Justice and Constitutional Affairs website [www.justice.go.ug](http://www.justice.go.ug)

28. Uganda Government (1998). "Uganda Bureau of Statistics Act" Uganda Gazette, No. 36 Volume XCI. Kampala, Uganda



Statistics House, the new home of the Uganda Bureau of Statistics in Kampala

In terms of structure, UBOS is governed by a board of directors appointed by the Minister of Finance; while management consists of an Executive Director, two deputies—one for Corporate Services and the other for Statistical Production and Development, and six directors—who each head a particular directorate. Based both in a new state-of-the-art multi-storied building in Kampala and the former Statistics Department buildings in Entebbe, UBOS activities are carried out through the six directorates, of which two were identified as directly relevant to the studies:

- Directorate of Population and Social Statistics—responsible for mapping for censuses and surveys, population censuses, socio-economic household surveys, collection of demographic and other social statistics
- Directorate of Macro-Economic Statistics—which tracks price, finance, trade, and national accounts statistics on a regular basis
- Directorate of Information Services—which provides data processing, systems support services, develops and maintains databases, and facilitates dissemination and library services

### 5.1.1 ICT Infrastructure and Usage

The Directorate of Information Services (DIS) manages a Local Area Network (LAN) of about 100 computers within UBOS. The bulk of these computers are used by staff in their day-to-day work. There is also a computer lab dedicated for data entry, but this is generally used by temporary staff brought in when there is need to help capture data emanating

from the regular data gathering activities of the organization. All staff computers are connected to the Internet via the LAN by a dedicated 1024 Kbps link.

The corporate website, [www.ubos.org](http://www.ubos.org), is hosted within Statistics House. This unfortunately means that about half the Internet bandwidth is reserved for visitors to the site, and this is still not sufficient. Through the website, UBOS also provides some limited access to statistical data via an Integrated Management Information System (IMIS), powered by RE-DATAM (REtrieval of DATA for small Areas by Microcomputer) developed by the Latin American Demographic Centre (CELADE).<sup>29</sup> This enables users to quickly and easily process census or other data organized in a hierarchical manner for a given geographical area of interest, and then displayed it in a variety of ways (currently in report, table or map form). Currently IMIS contains data collected from the 2002 national population and housing census disaggregated to the parish level.

There is no official software policy and as a result staff use different software packages for the same applications, sometimes resulting in mismatches and errors when staff have to exchange data. Microsoft Office Suite is the most commonly used desktop application within the organization, while some specialist applications used include:

- CSPro (Census and Survey Processing System) used for entering, editing, tabulating, and mapping census and survey data<sup>30</sup>
- SPSS<sup>31</sup> and Stata<sup>32</sup> for data analysis and management
- ArcGIS<sup>33</sup> for various GIS (Geographic Information System) functions

Beyond the conventional use of ICT for day-to-day operations, UBOS leverages ICT in a number of ways within the context of population registration that are elaborated in the next section.

### 5.1.2 Data Collection and Mapping

Using topographic maps from the Ministry of Lands and Surveys, the GIS section, under the Directorate of Population and Social Statistics, creates a base to document and organize different kinds of information. Equipped with printed-paper copies of the maps and GPS trackers, UBOS staff fan-out across the country meeting with local authorities at different levels as well as residents. The teams verify existing administrative boundaries and also capture new ones, including other structural information or landmarks like education and health facilities, and roads. The local knowledge of the population is a major source for this.

For purposes of the national population census, the country is divided into a number of administrative regions, which are further sub-divided into smaller units that mirror those existing on the ground. These include:

- District—currently there are 80 districts across the whole country
- County—each district is divided into multiple counties
- Sub-County—each county is divided into multiple sub-counties

29. IMIS can be accessed via the UBOS website at [www.ubos.org/imis](http://www.ubos.org/imis)

30. CSPro is a public-domain software package developed by various entities lead by the US Census Bureau with funding from USAID. Its website is located at [www.cspro.org](http://www.cspro.org)

31. [www.spss.com](http://www.spss.com)

32. [www.stata.com](http://www.stata.com)

33. [www.esri.com/software/arcgis](http://www.esri.com/software/arcgis)

- Parish—each sub-county is divided into multiple parishes
- Village—this is the smallest administrative unit. Each parish is divided into multiple villages
- Enumeration Area—depends on the number of households in a given locality. It normally covers a number of households that an enumerator can cover in a day

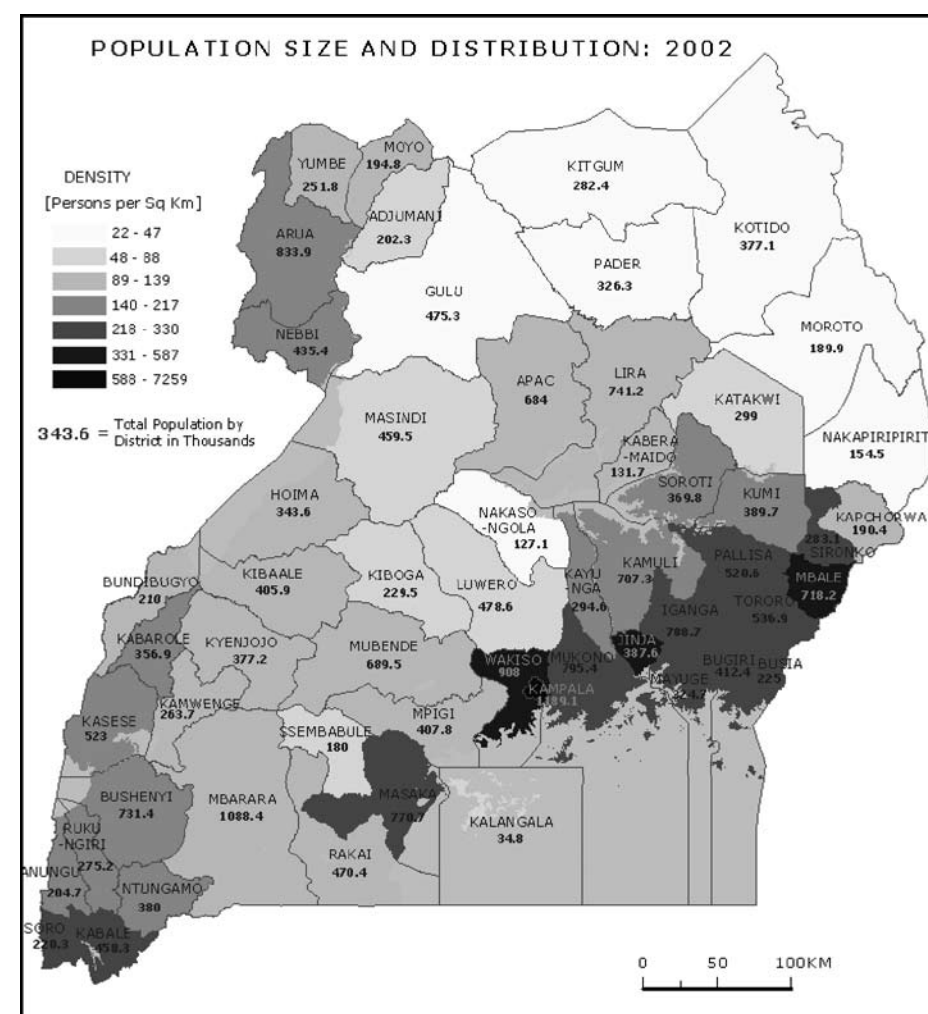
During the first stage, the different localities are also divided up into different Enumeration Areas (EAs) by counting the number of households that could be covered by a given number of enumerators in a defined work period. The maps are then scanned into digital form using GIS software. New data is captured and linked to the base maps using different layers and coding schemes through geo-referencing.

This works reasonably well for sparsely populated areas, particularly the rural ones; however, when it comes to urban areas that are much more densely populated things are not quite as smooth. Under these circumstances, the GIS team would prefer to leverage satellite imagery for mapping urban areas, but this is prohibitively expensive and requires prior coordinated arrangements with commercial satellite imagery providers. In the past, UBOS has been forced to buy archived satellite imagery that was a couple of years older as a way to save on its meagre resources.

It is these updated maps that are then deployed for actual censuses and surveys around the country. Currently all of the data collection is carried out using paper instruments, which are then brought back to headquarters from around the country. Data entry is manual, handled by a team of temporary data entry clerks hired according to need. As a result the process of data collection and capture for national surveys normally takes over a year. The Directorate of Information Sciences is experimenting with various technologies that could help improve timeliness and accuracy like:

- Scanning data instead of using manual data entry (Using Optical Mark Records [OMR] and Optical Character Recognition [OCR] technologies).
- Experimenting with Portable Digital Assistants (PDAs) and mobile phones to capture electronic data right out of the field and eliminating the need for manual data entry.

Once the data has been captured, entered, cleaned and processed, it is coded and mapped onto localities using the GIS. It is now possible to leverage the GIS as part of the analysis process as well as for dissemination and presentation purposes through colour-coded maps. Given that different users are interested in different information and/or locations, colour-coded maps reflecting their informational needs are normally generated on demand. GIS presentations are then used to disseminate statistical information, particularly to policy makers in different ways (maps, charts, reports, etc.) that make for an easier understanding and interpretation of the patterns and trends that influence decisions.



Map of Uganda showing the population distribution across the country by district based on the last population census in 2002. Please note that number of districts has since increased to the current 80 (Courtesy of UBOS)

The change in the number of Districts<sup>34</sup> over time has been attributed to different reasons. These range from the desire to improve service delivery by taking services closer to the people, management of ethnic conflict, pressure for local autonomy, political patronage as well as considerations for electoral politics to highlight a few.<sup>35</sup> Figure 3 shows the population of Uganda at the last national census carried out in 2002, with colour coding showing population density by district. The district is highest administrative unit in the local government administrative hierarchy. A District is divided into Counties and Sub-Counties, the next two levels within the administrative hierarchy of local governments in Uganda.

34. [www.statoids.com/uug.html](http://www.statoids.com/uug.html) provides a historical overview of the changing number of districts over time

35. Elliott Green (2008). "District Creation and Decentralisation in Uganda", Crisis States Working Papers Series No.2, Development Studies Institute, London School of Economics and Political Science.



### 5.1.3 Challenges

UBOS has been privileged to have the unqualified support of the Government of Uganda, which has committed to support statistical development within the country and to the use of the output information in planning, implementation and monitoring of various national programmes. Additionally, UBOS has been proactive, reaching out to various government agencies to help them out with statistical development. Strong endorsements from the President, who believes in evidence-based decision-making, and other early champions, have also played a profound role in raising the profile of statistics and how it can contribute to making the right development decisions for the country. As a result, UBOS is now a full participant in the development of major government initiatives and is held up as a model in Africa.

Despite all the successes, there are still many challenges that still need to be addressed to facilitate even more use of ICT within the activities of UBOS. Some of these are elaborated in the following sub sections.

#### *ICT Procurement*

There is no national policy to guide government agencies in the procurement of ICT equipment. Many agencies are made up of semi-autonomous sub sections that control their own budgets and make their own ICT procurements. Given that information resource management is still a weak function in many of the government agencies, ICT procurements are made in an ad hoc manner. The current Public Procurement and Disposal of Public Assets (PPDA) Act<sup>36</sup> that governs procurements in government entities also compounds issues by providing a rigid set of steps to follow that does not currently recognize the dynamic nature of ICT caused by rapid changes in technology.

#### *Staff Training and Retention*

As technology changes, staff must be continuously trained to ensure that UBOS can deliver its services and products in a more timely and efficient manner. There is however a dual challenge: The training budget is limited, and trained staff tend to move into the private sector that is equally starved of competent human capacity, but offering better compensation. It is clear that UBOS needs to come up with creative methods (other than monetary) of motivating staff if it is to achieve its mandate with an increasing level of effectiveness and efficiency.

#### *Data Storage and Backup*

Despite generating huge amounts of data through its activities, data storage and backup are still very rudimentary at UBOS. Staff duplicate data on others computers to avoid loss of data should anything happen to their own computers. There are a few servers that are used for storage, but these are not readily accessible over the network. External hard drives and burning copies of data onto DVDs are also used, but no copies are currently kept offsite for emergencies. While DIS is working on getting a state-of-the-art storage solution, it is worrying to learn that better storage of data, which is such an integral resource

36. Uganda Government (2003). "Public Procurement and Disposal of Public Assets Authority Act" Uganda Gazette, No. 3 Volume XCvII. Kampala, Uganda

for their outputs, has not been given the priority that it deserves. This constitutes a major risk as government and its institutions put increasing reliance on UBOS data resources.

#### *Software Policy*

Currently there is no software policy in place, leaving staff free to bring in software applications of their choice and use these in processing and analysing data that contributes to various UBOS outputs. The danger of such an approach is that it is possible to have duplicate copies of data that might be both inaccurate and incompatible. Besides making it harder to track software licenses, this also makes it easier for rogue staff to hoard data from their colleagues by using applications that others may not have ready access to.

### 5.2 The Electoral Commission (EC)

The Electoral Commission (EC) was created through Article 60 of the 1995 Constitution of Uganda<sup>37</sup> and empowered to organize elections and/or referenda for the good and democratic governance of Uganda. To date, the EC has organized a number of events, the last major one being the presidential and parliamentary elections in 2006.

In terms of structure, the EC is managed by a board of seven commissioners, two of whom double as the Chairperson and Deputy Chairperson of the commission. The President appoints the commissioners with the approval of Parliament for a seven-year term that may be renewed once. The board is assisted by a secretariat headed by a Secretary, supported by three directors—who each head a particular directorate:

- Directorate of Operations—which deals with technical issues related to election administration and is divided into election management, field operations, vote data management, voter education and training as well as legal and public relations
- Directorate of Finance and Administration—that handles human, financial and material resources of the commission to ensure efficient execution of its mandate
- Directorate of Technical Support Services—provides planning and research function besides supporting different types of ICT that facilitate the smooth operations of the commission

Besides maintaining a core staff at the headquarters in Kampala, the EC has got a presence in every administrative district of Uganda. EC district offices tend to be opened much earlier than those of other government agencies because when a new district is created, one of the first activities usually entails organizing the election of new district officials, part of the mandate of the EC. Ordinarily, each district office has got a District Registrar, supported by a secretary and a driver. In a few instances the registrar might be deputized.

A successful electoral cycle will consist of a number of major activities that normally include:

- Registering (or updating of the register) of voters that will participate in an election and/or referendum
- Displaying the register nationwide as a transparent means of confirming accuracy, and working with communities in updating the register, for example, by pointing out deaths in the community

37. A copy of Uganda's Constitution can be found on the Parliamentary website at [www.parliament.go.ug/images/constitution\\_1995.pdf](http://www.parliament.go.ug/images/constitution_1995.pdf)

- Educating voters
- Supervising the nomination of candidates that will participate in the elections
- Coordinating various campaign events amongst the candidates
- Managing the polling day activities that consist of polling, counting and tabulation of results
- Declaration of results from the voting process
- Resolution of electoral disputes should they arise (those not satisfied with EC decisions can go to court)
- Reporting, auditing and archiving of results

At the successful conclusion of one electoral process, the EC then begins to plan and work towards the next scheduled election. For the purposes of this study, emphasis has been placed on the voter registration process where the intent is to capture, as accurately as possible, the key electoral data of all citizens of voting age. The success of this stage is one of the key pre-conditions to free and fair elections. The importance of this cannot be underscored in Uganda: the current government started a guerrilla war against the government in the early eighties because the 1981 elections were riddled with fraud.

### 5.2.1 ICT Infrastructure and Usage

The EC has a Local Area Network (LAN) at their central offices in Kampala, accessing the Internet at 512kbps. The district offices are not part of the network although they each have at least one computer, a telephone and fax machine for daily operations. At the headquarters, there is a PABX system, but that still does not encompass the district offices. The corporate website, [www.ec.orug](http://www.ec.orug), is hosted on site.

Currently many of the activities in the election cycle do not use ICT. Besides the computers used for manual data entry and the old digital cameras used to take pictures of voters, there is not much ICT involved in capturing voter data during the registration process. Management of polling day activities requires ICT when it comes to compilation and communication of results from the district office to the headquarters in Kampala. On polling day, results are declared at every polling station after counting by the Presiding Officers and completion of the Declaration of Result (DR) forms. A copy of the DR form is given to each party/candidate's agent participating in the election, a copy is left at the polling station and another is sealed in an envelope and delivered by the Presiding Officer to the Sub County. These forms are then collected and forwarded to the District headquarters.

V-tally software, a proprietary database application that runs on top of Microsoft Access, is currently used for the tallying of votes at the district level. Results on signed DR forms from each of the polling stations are entered to generate a picture for the whole district. At the District level, results specific to that particular district, like those for Parliamentary elections, will be announced by the District Returning Officer, while those relating to the country, like Presidential elections, will be forwarded to the Kampala EC headquarters. A Transmission of Results (TR) form is completed at each district and signed by the District Returning Officer and various party/candidate agents participating in the election before being faxed to headquarters. The insistence on using fax machines emanates from the fact that faxing TR forms and transporting the original to headquarters using conventional transport creates paper trail, which provides more credence than verbally transmitted records that have

been challenged in legal courts a number of times.

The main impediment to this mode of operation is the time it takes to collecting ballot boxes from all stations and delivering them to a central location vis-à-vis the legal requirement (introduced for purposes of transparency and minimising opportunity for tampering) that the EC has only 48 hours from closure of polling stations to the declaration of results. While the telecommunications network has spread across the country enabling a fax machine to be located at each district office to transmit results back to headquarters, the growing number of registered voters means that there are more polling stations from which the EC has to go collect ballot boxes, which is straining the current system. In fact, the EC is currently lobbying Parliament to have this 48-hours period increased to at least 72-hours.

The RC does not have a policy defining permissions and restrictions around which software may be used by staff in their day-to-day work at headquarters or district offices. The Register Management System is a proprietary system with an underlying Oracle database management system.

Having recognized the need to store and manage voters' records over a long period of time, the EC invested in a Storage Area Network (SAN) much earlier than any other government entity. The SAN is powered by Compaq Proliant Servers running Windows 2000 and has been progressively expanded to store 3TB of data.

### 5.2.2 Voter Registration

Registration is done on a continuous basis in Uganda, although activity normally peaks right before an upcoming election. Registration is voluntary and open to Ugandan citizens who have reached their 18th birthday. It is carried out both at the district offices and the headquarters in Kampala. A number of other activities are also carried to help update the voters' register, including transferring voters from one station to another, issuance of photograph-bearing voters' cards, and correcting information or re-photographing those who might not have photographs in the existing register.

A typical registration process for a new voter includes working with a Registration Officer, who captures the voter's information on a form. The voter then works with a photographer who takes a digital photograph of the new voter holding a panel showing a unique number found on their form. Holding up this number during the photograph process will later enable the data entry team to build a link between the paper form and the digital photograph and the voter will be assigned this unique number as their voter registration number. For the current register, photographs were taken using old digital camera acquired in 2001 that use floppy disks as the medium of storage for voter photographs.

All of this data, both the paper and digital photographs are then collected and forwarded to the electoral commission headquarters for entry and processing. The text is captured from the paper registration form manually to create a voter record in the Register Management System (RMS) and is then assigned the unique number found on the registration form. The image on the other hand has to undergo some processing, which involves renaming it with the unique number (assigned as the voter registration number) found in the picture and then cropping off the number. All processed images are then downloaded into the RMS that then uses the file names to automatically link them with existing voter records. There is a possibility of creating record mismatches if image files are named with the wrong numbers.

After the data entry and image processing functions are completed, some limited duplicate analysis can be done using facial recognition software supplied by Viisage Technology. Dummy registers are then printed and corroborated against the paper forms to eliminate errors. Once the registers have completed this internal verification process, they are ready to be displayed at the various polling stations, where people registered. It is the responsibility of registered voters to verify their status prior to any election or referendum. If a voter notices any errors in their record, they can work with an onsite officer to complete a form indicating the type of error. The form is then sent to the EC to update the voter record. It is interesting to note the difference between the hierarchical structure of the voters' register compared to that of the national population census although both relate to the same geographical areas in terms of locality. These differences are highlighted in Table 3.

|   | Population Census | Voter Registration |
|---|-------------------|--------------------|
| 1 | District          | District           |
| 2 | County            | Constituency       |
| 3 | Sub-County        | Sub-County         |
| 4 | Parish            | Parish             |
| 5 | Village           | Polling Station    |
| 6 | Enumeration Area  |                    |

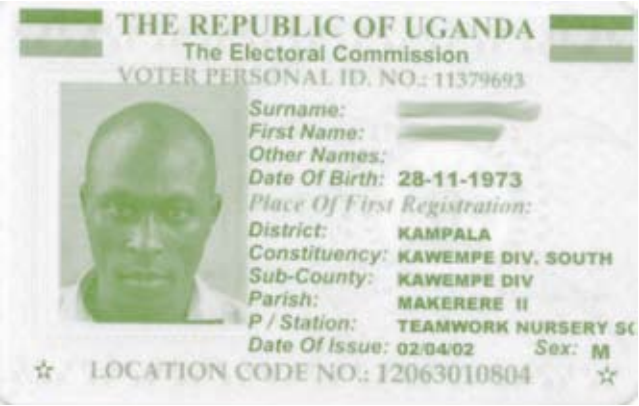
Table 3: Comparison between structures of the national population census compared to that of the national voters' register showing differences in how they aggregate and label different geographical areas

A Polling Station is the smallest unit used by the EC and is defined by the number of people who can vote in one day within the constraints of the voting period, which normally runs from 7am to 5pm. The number varies anywhere from 600 to 700 people. There might be multiple polling stations in a given village depending on the number of registered voters or multiple villages covered by one polling station. On the other hand, an Enumeration Area is the smallest unit used by UBOS for census purposes and is defined by the number of households that can be covered by a defined number of enumerators in one day. Currently, there are 215 constituencies, while during the 2006 elections there were 19,788 polling stations across the whole country.

Once the Voters' Register has been certified as accurate, A National Photo-Bearing Voters' Register (PVRIS or NVR) is printed and is used as the basis for general elections. Those whose names are not included in this register cannot enjoy any of the rights of a voter, the right to:

- Be issued with a voters' card bearing full-colour photograph, which is now accepted as a form of identification for various purposes.
- Contest for any elective post.
- Nominate or second a candidate of one's choice or sign supporters lists during nominations.
- Vote for any candidate of one's choice during an election.
- Sign a petition seeking legal redress in the event of challenging any election results.

Other kinds of registers like the Special Interest Groups' Register (used in the election of representatives for special interest groups like Women, Workers or Youth representatives) are derived from the National Voters' Register.



Sample Voter Registration Card issued to voters on successful completion of the registration process. It is a high quality laminated card that is now generally accepted as an ID. The names in the picture have been smudged for privacy reasons

After completion of the registration process, the RMS is used to print a Packing List for each constituency. A Packing List indicates the total number of registered voters in a given constituency broken down by polling station. This list is used to prepare and pack the various materials, including ballot papers, which are destined for each polling station. This list is also used to cross-check tallied records as they come back from the field after a given election: If the numbers from the field ever exceed those on a packing list, the tallying system working in conjunction with the Register Management System raises a flag.

5.2.3 Reducing conflicts over Voter's Register

Conflicts normally arise around the authenticity of the Voters' Register from the opposition, who think that those in power inflate it as means to facilitate election rigging.<sup>38</sup> The EC has attempted to allay these fears by pinning up photo-bearing registers at polling stations to allow the community to scrutinize them as well as utilizing them for actual voting during elections. Although there have been reports of irregularities,<sup>39</sup> the voting and tallying processes do create an elaborate paper trail of documents all the way from the polling station at the local level to the EC headquarters in Kampala that have allowed the election process to be scrutinized in courts of law on a number of occasions.

Other measures employed to reduce conflict during the last election in 2006 included publication of the full list of polling stations across the country in the media based on regions of Northern, Far Eastern, Eastern, Central and Southern (between February 6 and 10 2006). This was done by the EC in response to pressure from the opposition who charged that the reorganisation of polling stations in August 2005 was meant to disenfranchise their supporters around the country.

38. Grace Matsiko and Kabona Esiara, "Government is plotting to steal 3m votes" The Monitor, September 29 2005. <http://www.afrika.no/Detailed/10567.html>  
39. Denis Campbell, "Uganda hit by violence as opposition claims election fraud" The Observer, Sunday 26 February 2006. <http://www.guardian.co.uk/world/2006/feb/26/uganda.denisccampbell>

### 5.2.4 Challenges

There are plenty of challenges in the efficient management of the electoral process. Many of these relate to the voters' registration process and we highlight some of these below:

#### *Outdated Registration Technologies*

The current registration process is largely manual, creating delays, particularly during the peak periods before elections. Voter records are captured using paper forms, which have to go through a number of collection centres before arriving at the EC headquarters for a laborious data entry process. The digital cameras used to take photographs of new voters store pictures on floppy drives that are now outdated and hard to find. The floppies go through a similar collection process, and many are unreadable by the time they reach the EC, making voters' pictures inaccessible. An ideal solution would allow data to be captured in digital form at the registration point and be submitted directly into the Register Management System. This would eliminate the delays arising from paper forms having to work their way through different stages as well as errors emanating from manual capture and correlation of different data streams (text and images).

#### *Eliminating duplicate and bad records*

Duplicate records are normally a result of people migrating from one voting area into another or even voters with an intent to vote multiple times. To be able to eliminate duplicates from the voters' register, the EC needs to compare each voter's record to all the rest of the other records. Given that this process may include performing image-matching operations, the EC does not currently have sufficient computing power to be able to achieve this, particularly within the constraints of the limited number of days between the end of registration process and the start of major elections. As a result, duplicate analysis is done on smaller subsets of data taking into account proximate registration areas.

In addition, besides taking a photograph, the voter registration process does not collect any other biometric measure that could enable one to uniquely identify a voter should the need arise. Given the breakdown of the birth and death registration processes at the local level and the laxity in citizenship verification processes, there is need to have a full-proof fall-back position in a nascent multi-party democracy where there is always contention about the Voters' register. Although some duplicate records have been uncovered, staff within the registration department suspect that there are still plenty of duplicate records.

#### *High cost of registration and other election activities*

Elections are an expensive affair. The last major update of the Voters' Register before the 2006 elections started on 29 September 2005 and lasted for 30 days; it was estimated to have cost 5 billion Shillings.<sup>40</sup> The bulk of this money went to pay registration officers and photographers. This was then followed by a display of the Voters' Register at each polling station for about 21 days to allow voters to confirm their details and clean up their register of dead people, non-citizens, underage voters, report cases of missing photographs and so on. This was done between 22 December 2005 and 11 January 2006 after updating the national register. On polling day each polling station was manned by a Presiding Officer, 4 Polling Assistants and a Police Constable for security. Given that there were about 19,788

polling stations around the country, the costs multiply rather quickly.

It should be noted that voters' cards have been re-issued three times to-date, coinciding with three consecutive national elections. The last issue is the current card with a photograph, though older cards without photographs were accepted during the last election.

Given the budgetary constraints of limited national resources, money meant for the activities of the EC is not given serious consideration until a major election is just around the corner. This hinders their preparations in time. A good example is the issuing of voters' cards before the last election in 2006. When it became apparent that many voters would not be issued with cards in time, the EC announced that people could vote without a card as long as they were on the register and could be identified by local residents.

#### *Limitations of current legal framework*

Current laws that govern the registration of voters require that an individual present themselves for both registration and voting purposes, as a result the EC cannot explore electronic methods that can support remote registration or voting. In addition the legal framework has no extra-territorial jurisdiction implying that voters cannot register and vote from abroad.

There have also been instances of delays in the legislative process that results in electoral laws hampering the activities of the EC. For example, voter education only started two months before the 2006 elections at the national level and barely a week before polling date at the local level. Such delays are sometimes put forth as the reason for voter apathy during registration and voting as well as the high number of invalid votes during the last election.<sup>41</sup>

### 5.3 Directorate for Citizenship and Immigration (DCI)

The Directorate for Citizenship and Immigration (DCI) is mandated to facilitate, monitor, control and facilitate the movement of persons, both citizens and non-citizens, in and out of Uganda. While it is still operating de facto as a department within the Ministry of Internal Affairs (MoIA)<sup>42</sup>, the DCI is supposed to develop into a semi-autonomous unit, whose activities are guided by an independent board, the National Citizenship and Immigration Board (NCIB), established by the National Constitution. The Board consists of a Chairperson and at least four other persons, appointed by the President with the approval of Parliament. The Board provides operational policy with overall policy guidance from the Minister of Internal Affairs, and oversees the operations of the secretariat that is headed by a Director.

Currently, the directorate offers a number of services within its mandate including:

- Visas to help control and regulate the entry and departure of foreign nationals;
- Special Passes and Work Permits for foreign nationals to allow entry and employment;
- Certificates of Residence;
- Granting of Citizenship.

41. Makara, S., Rakner, L. And Rwengabo, S. 2008 "Administering Uganda's 2006 Multiparty Elections: The Role of the Electoral Commission" CMI Working Papers, Chr. Michelsen Institute. Available at: [www.cmi.no/publications](http://www.cmi.no/publications)

42. The Ministry of Internal Affairs can be found online at [www.mia.go.ug](http://www.mia.go.ug)

40. Rwengabo Sabastiano. (2005) "The Role of the Uganda Electoral Commission in Election Administration" September 2005



The Directorate also issues passports and other types of travel documents on behalf of the government. Other types of travel documents include a Conventional Travel Document (CTD) normally given to refugees resident in Uganda and a Certificate of Identity issued in cases of emergency, when there is not sufficient time to process other types of identification documents.

A key part of the mandate that has not yet been achieved, but is being planned for, is the issuance of national identity cards based on a comprehensive database of the citizens of Uganda.

Besides the headquarters in Kampala, the Directorate has a number of regional offices in certain districts that can offer a smaller range of services. The regional offices are located in a number of towns around the country that include Jinja, Tororo, Mbale, Mbarara, Fort-portal, Masaka, Hoima, Masindi, Mubende, Mityana, Gulu, Arua and Lira. They also have a presence at all gazetted border posts.

5.3.1 ICT Infrastructure and Usage

There is very limited use of ICT in the Directorate across the country. Some effort is being made to electronically capture details of people moving into the country, but these are concentrated at the major entry points like the International Airport at Entebbe and the Kenya-Uganda border points of Malaba and Busia. This information is stored in isolated information systems that are

*This lack of ICT usage results in a number of challenges: it is impossible to accurately track people entering and leaving the country; to stop possession of multiple documents; and to enforce compliance with permitted period of stay. Work processes are also slow and inefficient due to manual storage and retrieval and physical movement of files. Forgeries of documents are also rampant and not easily detected.*

not even accessible from headquarters. People entering or leaving the country also complete an immigration card that is received by an immigration officer, who inspects and stamps the passport as one gets into or leaves the country.

This card is however

used for purposes of capturing statistics by UBOS rather than for providing management information to the Directorate

At the headquarters, a Passport Control Centre helps process requests for new passports. Applicants complete forms that are processed and kept manually in paper files. It is after an application has been processed and a new passport is going to be issued that the Directorate leverages some advanced forms of ICT. The applicant's photograph and signature are scanned and some bio-data is captured. Some passport pages are then printed out using special printers that embed security features meant to deter forgery. The printing system stores this information, which is only a portion of what the applicant submitted, and it is only this limited information that can be electronically retrieved on demand. The rest of the information is stored away in a referenced paper file, created specifically for the applicant.

This lack of ICT usage results in a number of challenges: it is impossible to accurately

track people entering and leaving the country; to stop possession of multiple documents; and to enforce compliance with permitted period of stay. Work processes are also slow and inefficient due to manual storage and retrieval and physical movement of files. Forgeries of documents are also rampant and not easily detected.

5.3.2 Uganda National Identification Project

One of the challenges facing the Directorate is how to verify that a person qualifies to be a citizen of Uganda. Given that the civil registration programme to capture births and deaths does not work across the country, the Directorate relies on a cumbersome process that requires a passport applicant to visit with local authorities at different levels of the local administration hierarchy and have them sign the applicant's passport application forms. In many cases, a voter's registration card is now used as one of the support documents to prove that one qualifies for a passport.

Originally conceived as the Uganda National Population Databank (UNPD), the project was an ambitious attempt to capture comprehensive information about citizens in one location. This would range from basic biographical data, educational information, criminal history, etc. Given that various government entities have a mandate to work with different types of information, it necessitated that they all sit around the table to agree on what information to capture, how to capture and store it, what information to print on the national ID and issues of database access rights. Issues of who owned what information or would provide overall oversight of the database were a cause of contention. The project was inevitably bogged down not only by its complexity, and, had it succeeded, would also have faced inherent security challenges—if any of these government entities could access and modify a citizen's record for a given purpose, it would be rather difficult to maintain the integrity of citizen records. The tender award under the original concept was challenged by a bidder: the challenge was upheld by the Inspector General of Government who, in cancelling the proposed award, also raised the technical issue that the process had been led by the Ministry of Finance and Economic Development, while the Constitution gave the mandate to the Ministry of Internal Affairs. The contractor who had won is still threatening to sue the Government of Uganda for alleged breach of contract based on cancellation of the proposed award.

A simplified approach was recently recommended to the government by the National Citizenship and Immigration Board—to collect the basic biographical data about an individual along with biometric features that enable unique identification. This basic information would then be used as a reliable reference point by the authorized government agencies to establish bona fide citizens in their own secondary data bases, and add other data attributes as needed. For example, the EC could use the centralized database to create a set of records of citizens that are above 18 years old and qualify to vote, and create a voters' register. The government agency issuing driving permits could draw information of citizens who qualify to drive, augment it with other required information like the results of driving tests and examinations to create a drivers' database; and so on. Consequently, the Uganda National Population Databank project was transformed into the Uganda National Identification Project (UNIP).

The Ministry of Internal Affairs now insists that it has the capacity to handle the project on its own and that the project will be fully implemented by 2010 at a cheaper cost. Some

people claim that it is disheartening that DCI is disregarding any of the existing population databases in existence like the EC's voters' register or their own passport issuing database as inadequate and opting to instead do all the work from scratch.<sup>43</sup> There are also continuing debates about the most appropriate technology taking into account the impending integration of the East African Community (EAC).<sup>44</sup> However, this is just one side of the coin: DCI responds that the data required, including the essential biometrics, were not captured by the Electoral Commission. This poses two operational challenges: not only is the data incomplete for purposes of passport issuance, it also cannot be positively cross-matched to applicants with full confidence. The EC captured only photograph of voters, although some of these are also missing due to operational challenges arising out of the photographing exercise and the media used to store and transport the images.

Perhaps, what is lacking is a coherent plan to harmonize the activities of the UNIP project with those of the Uganda Registration Services Bureau (URSB), which was created to revitalize the civil registration programme by capturing birth and death records amongst others, though this is yet to be fully funded and made operational. The combination of these two will create a systematic population registration procedure that will help improve the accuracy of the national identification system. This will make the efforts of other agencies that benefit from a streamlined population registration process much easier by having an accurate and up-to-date set of information on which to create their own agency operational databases. As a result, UNIP will not end up as a one-off project to issue identification documents to all nationals of Uganda, but rather, a living project with inbuilt mechanisms that help keep track of Uganda's growing population.

## 6. Discussion and Lessons

In this section, we examine the case study with respect to its objectives and the different layers, and in doing so highlight lessons that could guide countries rebuilding civil institutions.

Uganda presents an opportunity for comparing and contrasting various implementations of the different activities around population registration and/or enumeration in support of planning and delivery of services. These are discussed alongside each other.

### Policy

UBOS gives a good illustration of how clear and focused policy and policy objectives, combined with active support at the highest levels of policy, can create an environment for the smooth implementation of ICT enabled projects. On the other hand, the institutions and processes around voter registration, the national identity card project (as well as the issuance of driving permits not detailed in this study) clearly illustrate what can go wrong in an environment that does not have a holistic policy approach, even if each of the activities has high-level policy support:

- For three consecutive elections, a new voter's card has had to be issued to address loopholes in the previous implementation. The massive exercise in producing pho-

tographic voters cards also had loopholes in that the opportunity to capture key bio-data needed by other arms of government was not seized.

- The category of people who need driving permits is an obvious subset of the people on the voters' registers. Voter registration—requiring an electronic photograph and a signature, and driving permit issuance—also requiring an electronic photograph and a signature, continue to be carried out independently of each other by different arms of government.
- The initial conception of the Uganda National Population Data Bank had a blurred policy level articulation, leading to inevitable inter-agency clashes and rivalries, and a bogging down of processes due to protracted discussions.

### Legal Environment

Lack of clarity in the policy layer inevitably impacts on the legal layer: there are multiple laws and regulations in Uganda that empower different entities to capture the same data (or subsets of each other's data) about the population. It is partly this multiplicity of authority that both permitted the ambitious Uganda National Population Data Bank (UN-PDB) to proceed on the one hand, and later to be blocked because the initial implementing agency was found by the Inspector General of Government (IGG) not to have the mandate. It should be noted that even as the DCI moves ahead with UNIP, there is a major gap in that the mandate for registering births and deaths is outside DCI. UBOS, on the other hand, does not face any such constraints or challenges.

43. Julius Barigaba, "Uganda kicks out SA firm as ID project row rages" The East African, November 2 2008. [www.theeastafrican.co.ke/news/-/2558/486306/-/s1824gz/-/index.html](http://www.theeastafrican.co.ke/news/-/2558/486306/-/s1824gz/-/index.html)

44. Henry Mukasa and Catherine Bekunda. "East Africa: EAC Queries Uganda's ID Project" New Vision, December 11 2008. <http://allafrica.com/stories/200812120060.html>

## Institutions

The thread of duplication in Uganda extends down to institutions when it comes to population registration. While each has a broad overall mandate, DCI, URSB, EC, and the Ministry of Works and Housing (MOWH) all have a sub-mandate that calls for the registration of all or a sub-set of the population. Duplication of roles leads to the dispersion of resources (financial and capacity) so that no single institution is sufficiently resourced to carry out the job comprehensively and accurately. One of the challenges of the UNPDB was that it was being implemented partly through an institution, the National Information Technology Agency of Uganda (NITA-U) that, while well conceived, did not yet have legal mandate to exist. The Ministry of Finance, without any mandate, became the de facto implementing agency.

## Human Capacity

Human capacity is crucial in the holistic definition and later successful implementation of any project. One can infer from the repeated re-issuance of voters cards by the EC, and the many errors discovered in the initial registers, that while there was a lot of investment in ICT equipment, there was insufficient investment in capacity building, which includes learning from best practices. The EC fell into the common trap of assuming that it is the equipment that leads to computerization: people skills are the most critical element of computerization. UBOS should possess the institutional maturity to have sufficient capacity, but there are still indicators of deficiency in some aspects. An example is onsite hosting of data where there is a high demand for access from the outside over very expensive bandwidth. UBOS in essence subsidizes all users of its data, many of them from economically stronger countries. This could point to a gap in the continuing capacity building process.

## Infrastructure and Technology

The infrastructure layer combines both the data communication channels and the specific equipment and technology to be used. The current common challenge faced by EC, DCI, and MOWH is a good illustration of a typical technology decision: what kind of card should be issued—bar code or smart card? This is still an ongoing debate. MOWH issues a driving permit with a bar code, but the traffic police and other agencies do not have equipment for reading the bar code, nor is there an online database to which they would link a simple reader as a means of verification or record tracking. After all this effort, the permit is still valid for only three years. The EC issues a simple photo ID that, within the current infrastructure environment, is really only as good as a driving permit, but with an undefined validity period. Clearly, the more advanced driving permit is a misdirected investment (even if the high cost is met directly by those who want permits).

While the DCI has recommended a bar code card for the national identity card (to include key biometrics like the photo as well as thumb and index finger prints), many are arguing

for a smart card, despite the fact that neither Uganda nor any of the East African Community countries has the supporting infrastructure in place. Careful consideration will be required to avoid another misdirected investment.

## Planning

Uganda has faced a key challenge in implementing the population registration systems in that the timeline has been driven mainly by the need to be ready by the “next election”: the accuracy of the voters' register is naturally a source of major contention in any environment experiencing instability. This has meant that instead of coming up with a holistic approach and a timeline dictated by the availability of resources (human and finance), ad hoc approaches have often been adopted with subsequent errors and the need for repetition. The cost expended to date using these ad hoc approaches to the implementation of a major project would have been sufficient to fund a successful comprehensive project had it been given a timeline of say seven years. This would also have the advantage of gradual funding instead of major demands on the limited consolidated fund.

## Outsourcing

Other than one-off contracts for major implementation, there has been limited ongoing use of the private sector in Uganda in implementing systems around population registration. MOWH did award a BOT contract for driving permits, but that has only one centre in Kampala. The length of the process and the waiting involved has meant that some people find it easier to travel to other towns where they can get the old style permits cheaper and faster – and for the same validity period. While it is a good first attempt, this use of the private sector has not given the best illustration of what is possible, and has unfortunately created a negative attitude in the population towards this approach. There is clear scope for outsourcing (while maintaining strict quality control) in UNIP. The initial massive registration required in a limited time (the desire to be ready by election time) does not justify the heavy investment in equipment where outsourcing could be cheaper. This also applies to the EC that routinely demands a huge budget for logistics and equipment whenever a new national election is due.

## Collaboration

Based on the interaction of various government agencies that handle various aspects of population registration, it is apparent that there is some level of overlap in their activities. The potential for synergy is high:

- While URSB wants to know about births and deaths, the EC would like to know when an individual reaches 18 years old and therefore becomes eligible to vote.
- All of them depend on population figures based on projections from UBOS for their operational activities.
- Both the EC and DCI are interested in establishing an individual's citizenship.
- Both the EC and DCI are interested in issuing identification documents—the EC issues a voter registration card, while DCI wants to issue a national ID to the same individual.

Currently, UBOS and the EC maintain separate databases; the DCI would like to go out on

43. Julius Barigaba, "Uganda kicks out SA firm as ID project row rages" The East African, November 2 2008. [www.theeastafrican.co.ke/news/-/2558/486306/-/s1824gz/-/index.html](http://www.theeastafrican.co.ke/news/-/2558/486306/-/s1824gz/-/index.html)

44. Henry Mukasa and Catherine Bekunda, "East Africa: EAC Queries Uganda's ID Project" New Vision, December 11 2008. <http://allafrica.com/stories/200812120060.html>

a population registration drive similar to those undertaken by the EC to build a more authoritative database that also captures biometric information; while URSB has got nothing akin to a national database. The duplication of data is replicated when it comes to setting up local offices, as each agency maintains separate staff and equipment at the district level. As government strives to identify resources to make the national ID project operational, it may make sense to explore how this would work with the registration of births and deaths at the local level. In addition, consideration should be given to how other agencies can augment this data to create more authoritative databases for their operations. For example, how could the EC use this as the basis for a national voters' register? What kind of information would they like to add? How can they keep track of people who qualify to vote each year as well as those that die and need to be purged from the register? Can the current voters' register be a useful starting point in any way? These and other questions do need to be addressed in some form.

There certainly seem to be synergies in the work of these different agencies and the government should explore avenues that streamline their mandates and require them to collaborate and share information more effectively as a means of promoting efficiency and a more effective population registration function.

#### Sustainability

Many of these agencies operate with insufficient funds that are usually received late. Given that most of their funding is drawn from government's consolidated fund, it is possible for other pressing financial needs to curtail funding meant for the various agencies. There are reported examples of this happening in various media:

- The Electoral Commission (EC) is reporting that preparations for the 2011 elections are behind schedule due to lack of funds.<sup>45</sup>
- The Uganda National Identification Project is yet to be allocated funding to start.<sup>46</sup>

Autonomy is not only about creating self-financing institutions; rather it entails creating credibility amongst the different stakeholders, while executing mandates in an efficient and effective manner.

## 7. Recommendations

A lot of the instability in Uganda starting from 1982 was the result of botched elections. The two issues of demographics and the Voters Register therefore remain among the most sensitive in terms of creating transparency in population registration.

UBOS has been successful in gradually creating national confidence in the population maps that are a key input to the definition of constituencies and setting polling stations. This has been enabled through the support of ICT at various stages of the process: GPS; satellite imagery; electronic processing; and more recently the use of PDAs. While the underlying technology is advanced, the access technology has become simple and cheap enough to be affordable in developing countries.

There remains, however, a lot of doubt about the accuracy of the Voters Register. The initiative to display the register along with photographs, using basic ICT at the capture stage and routine electronic processing to create the register was an attempt at addressing the lack of confidence in the register. In any village, residents would be able to associate known faces to names, making the entire populace part of the verification exercise. Photographs are the only way that a semi-literate population can gain confidence in the system. Unfortunately, while the conception was good, the implementation was not addressed holistically, leading to major gaps and fresh accusations when people not on the register were permitted to vote during the last national elections.

At the macro level, confidence in the statistical population registration systems has enabled government and government departments to plan, deliver services, and monitor impact (through household survey statistics) in a more reliable fashion.

It can be said that Uganda has had a mixed bag of results in applying ICT to population registration systems: a signal success in the case of UBOS; rather mixed within the Electoral Commission; and continuing paralysis in the registration of all citizens.

This case study provides recommendations that other post-conflict countries could draw from:

1. At the policy level, a holistic approach that takes into account all needs of the various governmental stakeholders is critical. This is the starting point for coordinated laws and institutions that will enable successful implementation. This is not to say that there should be a monolithic institution, but to assert that institutions must work in clusters; following, for example, similar cooperative approaches undertaken in countries like Rwanda.
2. The choice of technology must also be approached in a holistic fashion. Smart cards, for example, would have to be considered hand in hand with the data communication infrastructure as well as the point of use equipment, all linking to a central database.
3. The level of literacy also has an impact on technology and the mode of publication. While there were gaps in implementation, the publication of the physical Voters Register with photographs is the best approach for Uganda in its current state. It recognized the limitations in national literacy levels and, even for the literate, the lack of online access.
4. Opportunities to exploit resources generated using advanced technologies that would themselves be beyond internal capacities should be identified. The use of the GPS systems and satellite imagery in UBOS is a good illustration of this.

45. Moses Mulondo. "Uganda: Poor Funding affects Election Preps," New Vision, January 2, 2009. <http://allafrica.com/stories/200901050035.html>

46. Henry Mukasa and Catherine Bekunda. "East Africa: EAC Queries Uganda's ID Project" New Vision, December 11 2008. <http://allafrica.com/stories/200812120060.html>



IV UTILITY PAYMENT SYSTEMS IN RWANDA

Knowledge Consulting Ltd. Uganda

1. Executive Summary

This case study provides insight into the use of ICT in Rwanda as a means to empower customers to pay their utility bills by using scratch cards. Rwanda is a country that has emerged from ethnic violence and genocide to be considered as one of the African countries with a high level of commitment and a unified approach to ensuring ICT is exploited for sustainable development.

Rwanda still faces a big challenge due to a lack of skilled ICT human resources, in addition to the usual lack of reliable electricity and clean water supply that affects other parts of the continent. To spur more investment in ICT, the country has undertaken major economic reforms aimed at increasing competition in the telecommunications sector.

Even though the case here is not directly related to issues of governance, there can be no question that the innovative approach, that was later made more efficient using ICT, has led to full transparency of the billing system by eliminating those parts of the process that were suspect: intermittent meter reading; estimation; billing. Delivery of services has also improved, initially perceptively as consumers believed they were getting what they paid for and were not being cheated; and later through actual improvements in the quality of service and expansions enabled by better revenue collection.

This case study provides recommendations that other post-conflict countries could draw on. The macro policy environment must be addressed if opportunities for exploiting ICT are to be created. In this case, we see the combination of a national focus on exploiting ICT that led to the permeation of the mobile platform, and, an environment that promotes growth in the private sector coming together to provide fully electronic payment systems with the ubiquitous mobile phone as the user interface.

While the case study on its own does not demonstrate it, we know that top-level commitment to the national policy has been a key ingredient of success in creating the required environment.

A key lesson for governments is that the outsourcing model, even in environments experiencing fragility, can be a win-win situation. The organization, in this case Rwandan semi-autonomous public utility company Electrogaz, does not have to invest in equipment and competencies outside its core mandate - the generation and distribution of power and water to the citizens. This selling of power is left to SMS media working on the MTN mobile platform. Electrogaz was willing to release the actual sale of power to others who could handle it more efficiently. This also reduced the cost of internal operations.

The selling of power is not the core business case of the private service provider. It is a value added service that is achieved at small marginal cost, therefore yielding higher returns on infrastructure set up for more general functionality.

2. Background

2.1 Rwanda<sup>47</sup>

| Category                    | Detail   |
|-----------------------------|--|
| Full name                   | Republic of Rwanda   |
| Population                  | 9.7 million (UN, 2007)   |
| Capital                     | Kigali   |
| Area                        | 26,338 sq km (10,169 sq miles)   |
| Major languages             | Kinyarwanda (official), French (official), English (official), Swahili |
| Major religions             | Christianity, indigenous beliefs                                       |
| Life expectancy             | 45 years (men), 48 years (women) (UN)                                  |
| Monetary unit               | 1 Rwandan franc = 100 centimes   |
| Main exports                | Coffee, tea, hides, tin ore  |
| GNI per capita              | US \$320 (World Bank, 2007)  |
| Internet domain             | rw   |
| International dialling code | +250   |

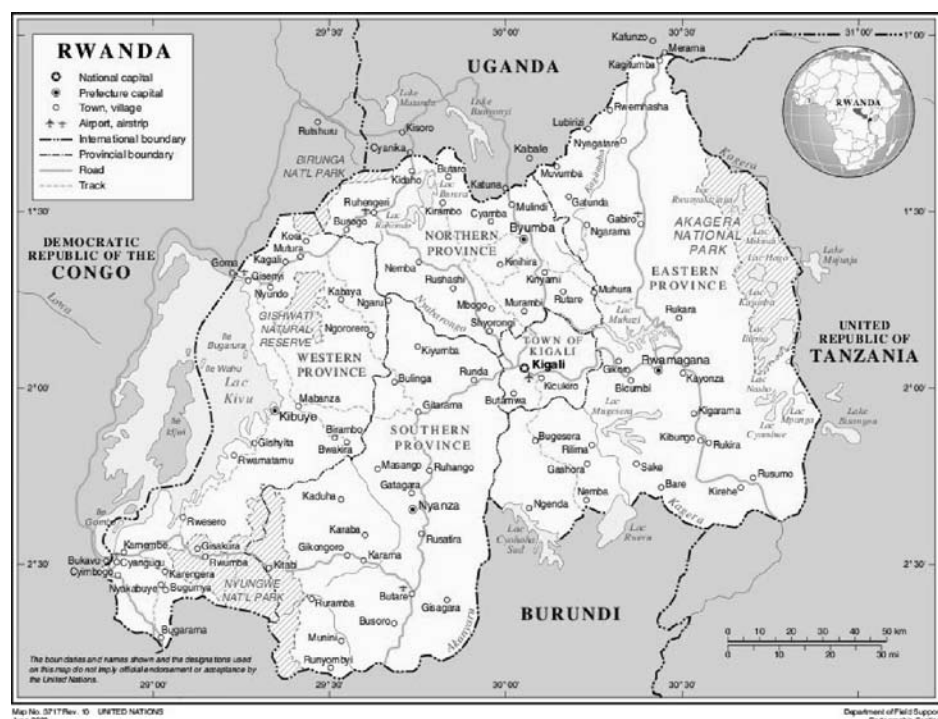
Table 1: Quick facts about Rwanda

Rwanda is a small, densely populated, landlocked country found slightly south of the equator in East Africa, with an area of about 26,338 sq km. It is bordered by Tanzania to the east, Uganda to the north, Democratic Republic of Congo to the west and Burundi to the south. Kigali is the capital city and the seat of government. The population is young, with 41.9% below the age of 15.

Most Rwandans speak Kinyarwanda, one of the country's three official languages, and in market towns many people speak Swahili. In 2008 the Rwandan government announced that English would become the second official language of the nation, alongside Kinyarwanda and replacing French. They switched the language of education from French to English, and required government officials to learn the latter. This is to enable Rwanda to become an integral part of the East African Community where English and Swahili are the principal common languages.

Rwanda's economy is based mainly on agriculture, occupying 91.1% of the active population; providing 43.5% of GDP and 80% of the country's exports (principally coffee and tea). The industry and services sectors account for 19% and 38% respectively. Land as a resource is therefore the most important factor of production and survival for the nation and the entire population, and it will remain the backbone of the national economy for a long time to come. The country's commitment to gender equality has resulted in a high representation of women in decision-making positions. Along with recent legal reforms, these changes hold the potential of alleviating the unequal share of challenges facing the female population. Despite the tremendous progress Rwanda has made, 63% of the population still live on less than one US dollar a day.

47. <http://data.un.org/Search.aspx?q=rwanda>, [http://devdata.worldbank.org/ict/rwa\\_ict.pdf](http://devdata.worldbank.org/ict/rwa_ict.pdf)



Map of Rwanda showing her boundaries, neighbours and some of the major towns

UN Cartographic Section Rwanda, no. 3717 Rev. 10 June 2008

From the socio-cultural point of view, Rwandans are very attached to land, which is the strong foundation of Rwandan social and cultural traditions. As a result, there is a growing competition for access to land due to the combined effects of land scarcity, high population growth, and the high number of landless people, the livestock crisis, and the increasing hold of the urban elite over rural land.<sup>48</sup>

## 2.1.1 ICT in Rwanda

| Category   | Year | Detail |
|--|------|--------|
| Fixed telephone lines per 100 inhabitants          | 2007 | 0.24   |
| Mobile Cellular subscribers per 100 inhabitants    | 2007 | 6.53   |
| Computers per 100 inhabitants                      | 2006 | 0.30   |
| Internet users per 100 inhabitants                 | 2006 | 1.08   |
| Broadband Internet subscribers per 100 inhabitants | 2007 | 0.03   |
| International Internet bandwidth (Mbps)            | 2007 | 156    |
| Radio sets per 100 inhabitants                     | 2002 | 15.11  |
| TV sets per 100 inhabitants                        | 2004 | 0.79   |
| % population covered by mobile signal              | 2007 | 90     |

Table 2: Quick ICT access statistics for Rwanda (Source, ITU ICT Eye, 2008)

48. [http://www.rwandagateway.org/article.php3?id\\_article=8824](http://www.rwandagateway.org/article.php3?id_article=8824)

Rwanda is hailed in the East African region as a country having the highest level of commitment, and a unified approach to ensuring that ICT is harnessed as part of its development strategy. The goal is to transform an economy that predominantly relies on agriculture into one that relies on information and knowledge. As a result, ICT has been placed at the centre of the country's development strategy. The primary vision has been made operational through a national policy document widely known as the National Information Communication Infrastructure (NICI) Plan. NICI 1 (2001-2005) expired and Rwanda is currently implementing NICI II (2006-2010). Another key policy instrument is the National Policy on Science, which strives to support the adoption of science, technology, innovation and ICT. The country is trying to find the path that will set it on course for achieving the objectives laid out in its Vision 2020, and ICT is seen as a critical crosscutting tool that can support Rwanda to become a middle class economy by that year.

The NICI plans to incorporate ICT at every level and in every sector of society based on the following 10 pillars: Education; Human Capacity Development; Infrastructure Equipment and Content; Economic Development; Social Development; E-Government and E-Governance; Private Sector Development; Rural and Community Access; Legal, Regulatory and Institutional Provisions and Standards; National Security; Law and Order.<sup>49</sup> Part of this vision entails building a national fibre optic backbone that will transform the country into a knowledge-based society. Rwanda is on its way to becoming the regional ICT hub for finance, air traffic and outsourced computer services.

However, the Rwandan ICT sector is embryonic and still accounts for a relatively small share of the economy's output. It is still largely import-oriented, providing abundant opportunity for import substitution through local assembling of a wide range of components and accessories or through original equipment manufacturers' partnerships with local investors. Rwanda still faces a big challenge of lack of skilled ICT human resources, in addition to the usual lack of reliable electricity and clean water supply that affects other parts of the continent. To spur more investment in ICT, the country has undertaken major economic reforms aimed at increasing competition in the telecommunications sector.

Some of the legal instruments that continue to influence the context of ICT in Rwanda include:

- Law N 39/2001 (2001)–which created the Rwanda Utilities Regulatory Agency (RURA)
- Law N 44/2001 (2001)–that empowered the government of Rwanda with authority to regulate telecommunications and set up a regulatory board to carry out that function
- Law N 32/2002 (2002)–which created the Rwanda Information Technology Authority (RITA)
- ICT-2020 policy framework–that sets out the orientation of the government's ICT policy and strategy within the context of its national development goals

Key institutions in the context of ICT in Rwanda currently include:

- The Ministry in the President's Office in charge of Science, Technology and Scientific Research–which oversees ICT Policy and the NICI Plan as the main Policy Instrument

49. AME2008 by Romain Murenzi

- Rwanda Utility Regulatory Agency (RURA)<sup>50</sup>—that regulates entities that supply telecommunication services, energy, transport, communications and waste management
- Rwanda Information Technology Authority (RITA)<sup>51</sup>—set up to coordinate structures and entities involved in the development and implementation of the NICI Plans. It also acts as a central coordination point for all ICT initiatives and projects with the country

The strength for Rwanda lies in clear articulation of integrated issues and priorities, and how these are then reflected in the identified needs in order to build up the knowledge base through human resource capacity building, underpinned by well identified science and technology needs. This then creates a need for a cluster approach to donors and strategic development of international partnerships to address national integrated issues as illustrated in Figure 1.

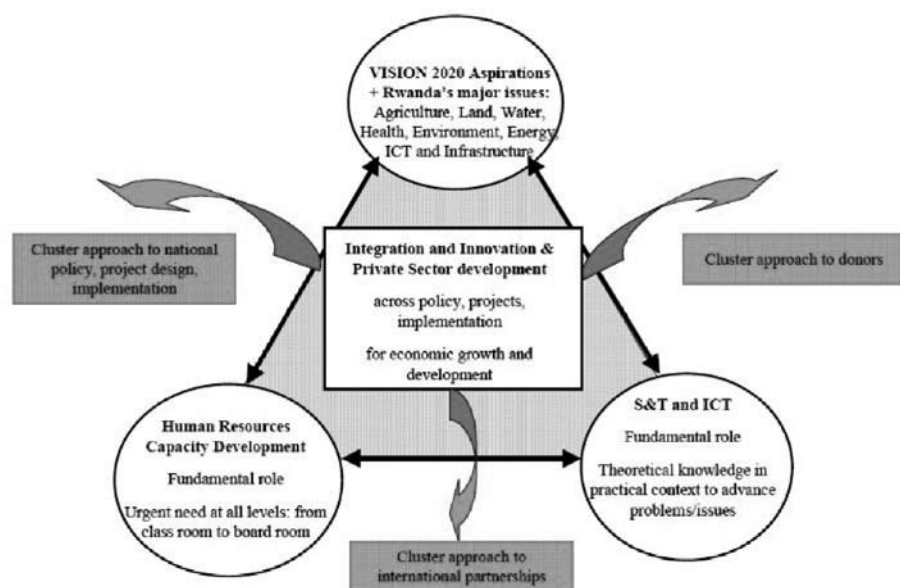


Figure1: Overview of Integrated Innovation Framework Linkages

### 3. Defining the Framework of the Case Study

This case study uses utility payment systems in Rwanda as an example to articulate the opportunities and challenges inherent in using ICT.

In stable environments, the successful deployment of ICT requires cognisance of key implementation layers to maximize the likelihood of success: the challenge is even greater in an environment experiencing fragility. The key implementation layers include:

- The policy layer, defining the vision and the boundaries: What is the motivation for using ICT, and how does it contribute to organizational vision and strategic priorities? A clear policy layer creates the environment for success. Apart from clarity of policy and policy objectives, support at the highest policy level is a critical ingredient for success.
- The legal layer (definition of authority in organizations): What laws are required to enable the implementation of the initiative? What laws in existence will impact on implementation, both negatively and positively? Which laws are barriers and need to be modified? Insufficiency, lack of clarity, or contradictions in legislated authority can either disable initiatives, or become weapons in the hands of those who, often for personal reasons, want to block the initiatives.
- Institutional layer: What kind of organizational set-up is required to implement what has been legislated in order to achieve the policy objectives? Sustainability of initiatives depends a lot on the nature, structure, and resources of the implementing institution.
- People layer: Who will the specific players be? How will they impact on, or be impacted upon by implementation? The people layer must address all stakeholders - for example the population where a government ICT initiative is going to be implemented. The people layer has the highest inertia, and is the inevitable source of resistance if key players are not brought on board in the early stages. Business process redesign (BPR), required in the implementation of ICT in a going organization, results in streamlining of organizations, re-alignment of power relationships, and job losses. BPR is therefore always resisted by people.
- Capacity (skills and capabilities) layer: What skills and capabilities will be required in the people layer? This applies to skills and capabilities to design, implement, operate and maintain; and end-user skills. The first set of skills applies to the professionals in the implementing institution, while the second applies to users both internal and external to the implementing institution.
- Infrastructure layer: What infrastructure is required for the implementation? ICT is dynamic, and a careful balance is required amongst the high cost of the latest technology, capacity and skills, and the risk of obsolescence (for older but tested technology)
- Timeline and cost: What is the implementation time-frame? What defines the timeline? What funding is required? For example, deadlines for elections are normally defined by the national constitution. This in turn sets a timeframe within which an electoral register and voters cards must be prepared.
- The private sector environment: What opportunities exist for interfacing with the private sector environment and initiatives? The private sector, if properly and transparently utilized, often creates opportunity for efficiency and cost-effectiveness, leaving government (or any other organization) to focus on its core mandate: The challenges around layers (iii) - (viii) are transferred to the private sector.

This report examines the policy, social and economic environment within which the scratch-card method of payment is used. Then the actual initiative, within the context of the framework given in this section, is examined as a basis for identifying lessons that can support the development of a toolkit envisaged by the overall study.

The intent is to highlight the challenges that exist, and to discuss the opportunities that can be leveraged to empower governments to operate in a more efficient, cost effective and transparent manner.

50. RURA can be found online at [www.rura.gov.rw](http://www.rura.gov.rw)

51. RITA can be found online at [www.rita.gov.rw](http://www.rita.gov.rw)



## 4. Methodology

This case study focuses on Rwanda, and how ICTs are being utilized in paying utility bills using scratch cards. Desk research, enhanced by knowledge and insight of the researchers, was used to obtain background information and create a reliable baseline (the overall context of ICT at the national level) upon which to build. An instrument was then designed and used to guide structured interviews with selected participants in selected organizations relevant to the case study.

### *Desk Research*

Primary sources employed at this level included online resources and publications of governmental as well as non-governmental organizations.

At a general level, successful deployment of ICT in civil administrative functions does not happen over night, and normally involves multiple players. Taking into account how ICT usage in Rwanda has evolved over time, we identified key institutions that were pertinent to the specific areas of focus.

Institutions identified in Rwanda:

- i. Rwanda Information Technology Authority
- ii. The Ministry in the President's Office in Charge of Science, Technology, and Scientific Research;
- iii. Rwanda Utilities Regulatory Agency (RURA)
- iv. Electrogaz
- v. SMS Media Rwanda

Preliminary contact was then made by phone or face to face with each of the selected institutions to determine whether they played any role in the specific cases of interest, resulting in shortened lists of organizations to be interviewed:

- i. Rwanda Information Technology Authority;
- ii. The Ministry in the President's Office in Charge of Science, Technology, and Scientific Research;
- iii. Electrogaz;
- iv. SMS Media Rwanda.

### *Questionnaire design and interviews*

A questionnaire was designed to guide data collection based on semi-structured interviews with key personnel from selected institutions identified for the case studies. The instrument covers general information on the institutions, nature and types of ICTs they deploy, different kinds of software applications that they use as well as ICT usage costs associated with supporting different usage scenarios. The interviews also sought to bring out best practices and challenges.

Most interviews were conducted at the interviewee's place of work and the instrument was used as a loose guide for the discussion.

### *Constraints*

Really more of a challenge than a constraint is the fact that in many cases, the informa-

tion sought was not the preserve of a single individual, necessitating cross-references and follow up of other staff in a given institution. There was however cooperation across the board in identifying and getting to other individuals who could fill in data gaps or give important insights.

## 5. Utility Payment Systems in Rwanda

### 5.1 Electrogaz Rwanda

#### 5.1.1 Background

Electrogaz<sup>52</sup> is a semi-autonomous public utility company that enjoys the monopoly of supplying water and electricity to consumers in Rwanda. It was established after separation from REGIDESO, a colonial-era utility, owned by Rwanda and Burundi in 1976. In August 1999, Rwandan Law No. 18/99 brought an end to the company's monopoly by allowing liberalization of the provision of electricity and water in the country, although no viable competition has since emerged. A consulting company based in Germany was awarded a 5-year management contract to run Electrogaz in 2003, but due to a number of circumstances the contract was terminated in March 2006. Electrogaz is regulated by a number of regulatory bodies including Rwanda Utility Regulatory Agency (RURA) for the quality of the services to its customers, Rwanda Bureau of Standards and Ministry of Health on the quality of water supplied, and Rwanda Environment Management Authority (REMA) for environmental protection.<sup>53</sup>



Electrogaz Headquarters in Kigali

52. Electrogaz can be found online at [www.electrogaz.co.rw](http://www.electrogaz.co.rw)

53. Sano, J. C. (2007). Urban Environmental Infrastructure in Kigali City Rwanda: Challenges and Opportunities for Modernised Decentralised Sanitation Systems in Poor Neighbourhoods. Wageningen University and Research Centre.



Electrogaz is headquartered in the capital Kigali and managed by a Director General appointed by the Cabinet. However, principal decisions like investment, planning and development budgets are still taken by relevant ministries like the Ministry of Water (MINITERE) and the Ministry of Infrastructure (MININFRA). A State Minister is responsible for water and energy respectively in each of the two ministries.

Demand for electricity still outstrips supply as highlighted in Figure 2. There are currently about 92,000 households connected to the power grid, but the goal is to reach 350,000 households by 2012.<sup>54</sup> With an installed capacity of 70 Mega Watts (MW), the dilapidated transmission and distribution network leaks 20-22 percent of the power across the grid, leaving about 54 MW as the available capacity versus a peak demand of about 60 MW. Water levels continue to decline in the major lakes that supply the Ntaruka and Mukura hydro-power stations necessitating load-shedding during different times of the day. The increasing shortage has caused an escalation of power tariffs, which have risen from 48 to 120 Rwandese Francs (about USD0.22) per unit of power (kWh). Unreliability continues to lead many individuals and businesses to opt for fuel-powered generators.

To address the increasing shortage, the government of Rwanda has purchased diesel-powered generators to compliment the hydroelectric dams, which in itself has contributed to the higher power tariffs due to the high cost of fuel. The growing power crisis has been felt by all sectors of the economy and continues to divert scarce government resources.<sup>55</sup> Other efforts to address the growing power shortfall include an upcoming 27.5 MW hydro-power plant with expected completion in 2011; an operational pilot methane gas power-

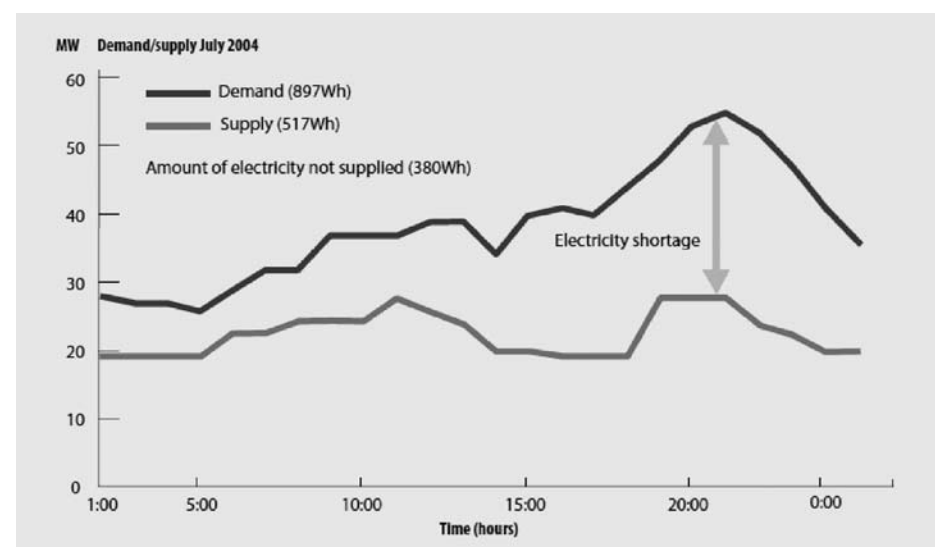


Figure 2: The growing discrepancy between supply and demand for electricity at different times of the day in Kigali (Source: Leander, 2007)

54. Joseph Mudingu. "Electrogaz to light up more homes," The New Times, Wednesday, February 4th 2009. <http://www.newtimes.co.rw/index.php?issue=13581&article=7617>

55. Leander, S. S. (2007). "Turning Vision 2020 into Reality: From Recovery to Sustainable Human Development." National Human Development Report, Rwanda 2007. Kigali: UNDP.

station on Lake Kivu (on the border with DRC) producing 1.5-2 MW, but with the potential for more output; and an operational 250 KW solar power field located in Jali hill in the Gasabo district, reportedly the largest in Africa.<sup>56</sup>

### 5.1.2 Electrogaz Fibre Optic Project

Electrogaz is working to improve communications among its staff to enable the efficient provision of power and water supply to its customers. There is a need for a network to support the performance, monitoring and control systems of the power/water transmission and distribution networks. To address this need, a Supervisory, Control and Data Acquisition (SCADA) system is planned to span the main power distribution network with technical user interface points at different power stations, substations and control centres.

In March 2006 Electrogaz signed a contract for implementation through a combination of grant and commercial funding. While the commercial part of the funding has been closed and bank guarantees secured, the grant part of the funding is yet to be secured. If all conditions are met, 825 km of Synchronous Digital Hierarchy (SDH) fibre optic cable will be deployed across Rwanda using Electrogaz's power transmission network.

Once completed, the Electrogaz fibre infrastructure will form the largest component of the planned national fibre-backbone to cover the whole country. The network will connect 21 existing power generation plants and all substations, including the control centre at Gikondo and provide a range of communication services. Issues of interconnection with other infrastructure providers, governance, commercial arrangements and technical management are yet to be decided, but they will influence how the private sector can leverage this resource. The expectation is that the network will be managed by an entity that operates as an infrastructural provider to other businesses via a whole-sale model.<sup>57</sup>

### 5.1.3 Electrogaz Cash Power System

The following problems are symptomatic of the relationship between utility companies and consumers in developing countries experiencing fragility:

- i. Poor and intermittent meter reading and billing. Errors in billing are common, and the correction process long and frustrating, especially for the poorer consumers who do not have contacts. The cost of manual meter reading is an overhead added to the cost of utilities that is already high.
- ii. Because of intermittent meter readings, there is a tendency to use estimates, generating complaints about over-billing and compounding the lack of trust between the utility companies (generally government owned) and the consumers. It should be noted that in such environments, consumers equate the utility companies with government.
- iii. Recovery rates are very low: commercial losses as high as 70% have been cited in countries recovering from conflict in Africa. Poor revenue collection disables operations and expansion: dissatisfaction about billing is now compounded by complaints about poor delivery of services. There is also a tendency to load those who pay with higher costs for utilities: this triggers a vicious cycle.

56. "Africa is the New Solar Technologies Frontier," SolarGren Media <http://solargrenmedia.blogspot.com/2008/01/africa-is-new-solar-technologies.html>

57. Gatera, E. (October 2007). ScanICT Baseline Survey Report: ICT Indicators—Measuring Usage and Penetration. Kigali: NISR; NUR; RITA.

To address the problems, Electrogaz introduced the prepaid electricity metering system, also popularly referred to as “Cash Power”. The technology was acquired from South Africa and piloted in a number of areas in 1995. After a successful pilot, full implementation across the country started in July 1996. “Cash Power” has been so successful that it is now synonymous with local electricity consumption. Electrogaz is happy because, as they claim, the system has increased sales while reducing costs associated with bills collection. The customers are happy because the prepayment enables them to control their expenditures in a more transparent manner, while Electrogaz staff feel prestige from association with such a successful technology. Statistics available at Electrogaz indicate an improved annual income of nearly 2.5b Rwandan francs (US\$4.3m as at April 2005) in the last two years, up from a paltry Rwf 200m in 1996.

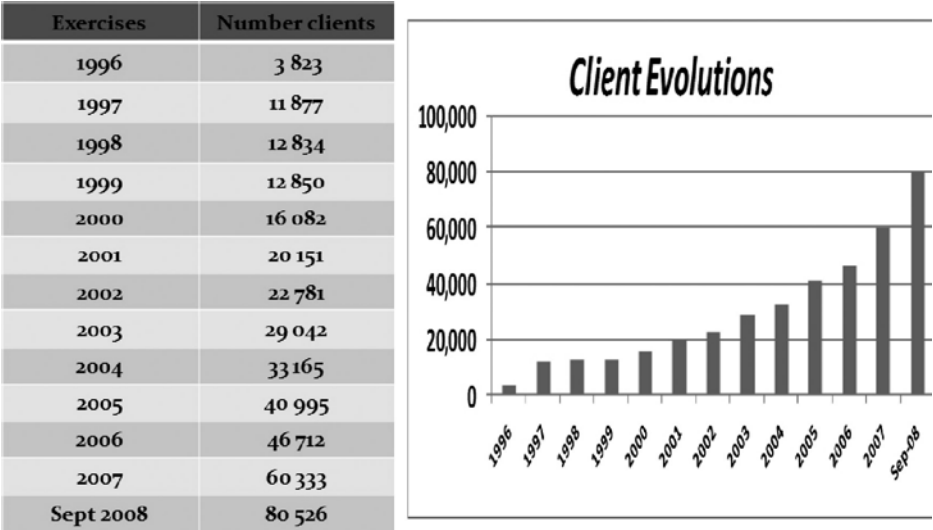


Figure 3: Development of the prepayment customers at Electrogaz (Source: Electrogaz, 2008).

Figure 3 shows the increase in the number of clients since the introduction of Cash Power metres, more than ten years ago, starting from a near static base from 1997 to 1999. The introduction of scratch cards is a more recent innovation, coming in December 2007, and as such the authors have not carried out an analysis that shows the extent to which the increase in customers since then can be attributed to the use of scratch cards. Due to the success of the prepayment system, Electrogaz has plans to replace the last approximately 1,000 conventional metres in Kigali with some 2,000 prepayment metres, as well as initiate pilots in three upcountry sites with more than 10,000 Cash Power metres. Future plans also include setting up additional vending points in shops, petrol stations and other strategic locations.

#### 5.1.4 Paying Utility Bills with Scratch Cards

Since the prepaid electric meters were introduced, they have been a hit with customers despite the inconvenience of customers having to go out to effect the prepayment, and

the occasional frustration of blackouts when one forgets to do so. From the start, Electrogaz controlled the whole value chain by selling power at designated Electrogaz outlets, which were limited in number. The convenience of prepayment means that consumers can buy in small quantities that better reflect their earning potential, while at the same time eliminating the challenges, mistrust, and costs of meter reading, billing, and collection. As the system became popular and Electrogaz minimized costs through reduced loss of power due to thefts, the number of customers increased. The result of this growth reflected in Figure 9 increased the length of queues at the limited number of Electrogaz outlets selling power. Electrogaz recognised that in order to cope with this, they had to co-opt the private sector. Luckily for them, they could learn from the local mobile operator and their extensive private sector network that distributes prepaid airtime. In February 2006, Electrogaz started to decentralize the selling of Cash Power via private sector agents and introduced scratch cards in December 2007. After buying a scratch card, the customer “opens<sup>58</sup>” it to show a number, and the agent couples this with the consumer’s unique Cash Power metre number to generate a token (code of digits) corresponding to the amount of electricity purchased. The consumer then enters the number on the token into the Cash Power metre to enable access to power.

Working with the private sector agents helped Electrogaz increase the number of outlets faster. A number of shops and cybercafés around Kigali City now provide Cash Power services via an agent model using the Internet and other VLAN technology. Accounts are created for these agents in the Electrogaz system and they use these to procure power in bulk that they then resell to end consumers for a commission. Agents need to pay for their power in advance just like the consumers. The minimum amount of power agents can procure in bulk is worth Rwf 5,000,000 (about USD 10,000) and if they successfully sell all of this power, they will earn a commission equivalent to Rwf 180,000 (about USD 327).

It did not take long for Electrogaz to recognize some of the existing limitations (from the perspective of customer convenience) in the basic scratch card model and to embrace the growing ubiquity and power of the mobile phone as well as that of the Internet as complements to their existing value chain. Electrogaz partnered with SMS Media, a local SMS information provider as the main distributor in early 2008. Unlike regular agents who still require the consumer to visit their premises in order to be able to generate that unique token that finally enables the consumer to access the power that they buy, SMS Media can remotely generate this token and send it via SMS. Because the mobile phone can do even more, SMS Media has pioneered other novel services like enabling consumers to query the Electrogaz system to find out the status of their bills. They operate on the nationwide network of Rwanda’s sole mobile network service provider—MTN Rwanda.

58. Although they are referred to as “scratch cards”, this term is misleading in that you do not really “scratch” the card to access the number. Rather they use “opaque paper” similar to that used by Banks to mail credit card PINs to customers in developed countries

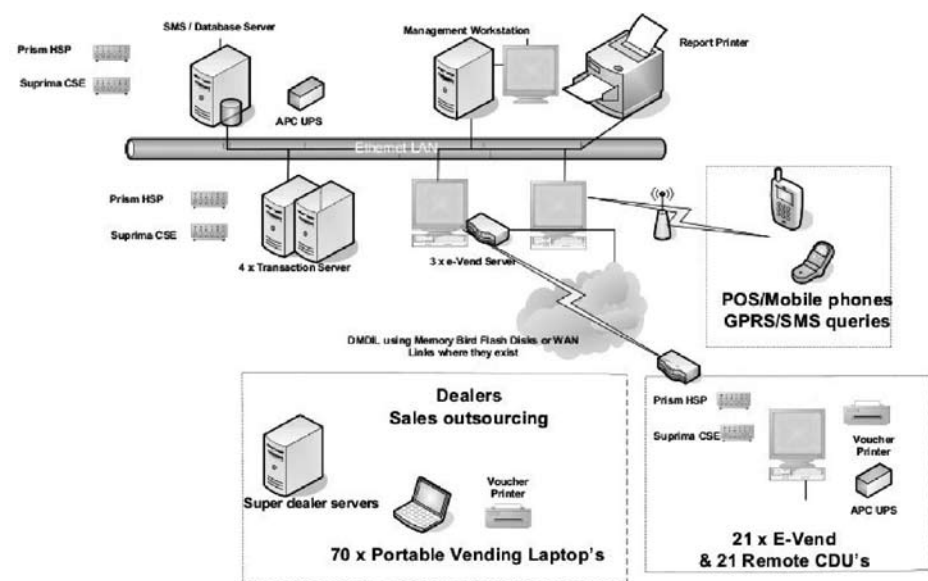


Figure 4: Illustrates the system requirements for Electrogaz prepayment platform as used by Electrogaz and their private sector partners to sell electricity using scratch cards

The Electrogaz prepayment platform that powers their decentralized agent model is summarized in Figure 6 10. At the backend, the platform consists of three main components:

- A database server—contains information about customers' accounts
- A transaction server—generates unique tokens that are given to consumers to enter in their Cash Power metres back home
- An E-Vend server—provides a web interface through which requests from either SMS or the Internet are made

The front-end supports: an SMS interface through which a consumer can generate a request (see Figure 4); a web interface primarily used by agents; and remote Electrogaz branches via a web browser. A request made over SMS is sent to SMS media web interface, then onto the Electrogaz database server via the e-Vend server. The database server checks and authorizes the transaction server to generate the token containing the digits corresponding to the quantity of electricity to be loaded onto the consumer's Cash Power metre. A request made over the web interface uses the same route and the token is sent back via the web interface as well. At an agent, the token (code of digits) is printed on a sheet of paper and handed to the client for him to load it into his cash power system, while for an SMS request, the token is sent back via SMS.

Electrogaz is also currently working with major commercial banks, particularly the Bank of Commerce of Rwanda (BCR) to give consumers the option to also pay using money in their bank accounts. BCR is an old bank founded in 1963 and later privatized in 2004. It is 80% privately and 20% government owned, has a strong reputation for quality services and

owns a large branch network around the country, with its headquarters in Kigali.

The agent model has enabled Electrogaz to drastically reduce the number of employees involved in selling power directly to consumers. Decentralizing the Cash Power services through leveraging ICT and ceding the front-end of services to the private sector has allowed Electrogaz to focus and concentrate on developing better back-end systems. Remote branches upcountry continue to use older systems, but there are plans to progressively upgrade them.

## 5.2 Media—SMS Solution Provider

Incorporated in Rwanda in 2003, SMS Media Rwanda<sup>59</sup> is a Kigali-based mobile media company specializing in providing mobile solutions, particularly using the Short Message Service (SMS) or “text messaging” as it is commonly referred to. The company operates throughout East and Central Africa, offering technology and advertising solutions that allow companies and individuals to interact with mobile phone subscribers on various networks.

SMS Media provides various SMS information services as well as bulk SMS services to both businesses and individuals in a cheap and convenient manner. Company manager Jeff Gasana says their clientele consists of, among others, corporate bodies sending staff bulletins, publicity campaigns and other broadcasts, and individuals who normally use the service to pass personal messages like details of meetings and parties.

In Rwanda, SMS Information Service allows clients to receive the latest news in English, French and Kinyarwanda, as well as receive information related to, among others, a cinema guide, flight schedules, foreign exchange rates, an English dictionary, daily horoscopes, SMS banking. Other services due to be introduced soon include an SMS business directory, commodity prices, English-French translation and SMS banking. A sister company, SMS Media Uganda<sup>60</sup> also operates in Uganda, primarily in the SMS Information Services area.

Poster providing instructions on how to top-up your Electrogaz Cash Power account via SMS using scratch cards (power cards). The mobile phone service is provided in conjunction with SMS media in Rwanda. The poster image shows a lady entering the final token received via SMS into an actual Cash Power meter



59. SMS Media Rwanda can be found online at [www.smsmedia.rw](http://www.smsmedia.rw)

60. SMS Media Uganda can be found online at [www.smsmedia.ug](http://www.smsmedia.ug)

## 6. Discussion and Lessons

In this section, we examine the case study with respect to the objectives of the study and the different layers, and in doing so highlight lessons that could guide countries rebuilding civil institutions.

The scratch cards introduced by Electrogaz, and their evolution to a full electronic payment system (for those who have access to mobile phones) illustrates a typical private sector approach that focuses purely on cost-effective achievement of the objective.

The policy and policy objectives of Electrogaz were clear: They were motivated by the need to improve revenue collection in a country where competing needs for limited personal resources inevitably led to high levels of defaulting or delayed payment, compromising expansion investment. The decision was the use of prepayments, already demonstrated as being effective in South Africa - a country that had just emerged from racial repression and was therefore just emerging from instability in all ways. A clear focus at this level meant that the initiative could be implemented in a flexible manner that permitted variation of methods with the single focus of achieving the policy objectives:

- Prepayment through scratch cards sold at Electrogaz outlets;
- Recognition of the demand and inconvenience to customers, and reacting by letting independent agents sell the cards while achieving the objective in a more customer-friendly fashion;
- Creating alliances with the private sector (telecommunications; content drivers; the banking industry) to move on fully electronic prepayments, while maintaining the scratch-cards to address sectors of the population that, for one reason or another, could not go fully electronic.

It should be noted that by creating alliances with the private sector, issues around people, capacity, infrastructure (and technology risk) were all transferred out of Electrogaz, leaving them to focus on their core mandate. Secondly, it needs to be recognized that the

*It should be noted that by creating alliances with the private sector, issues around people, capacity, infrastructure (and technology risk) were all transferred out of Electrogaz, leaving them to focus on their core mandate.*

level and capacity of private enterprise required to support this kind of initiative depends on whether or not government has put in place a coordinated enabling policy. Rwanda has this in place.

Private sector or privatized companies like Electrogaz have the advantage of being able to take fast investment decisions. In passing on the lessons of Electrogaz, the following must be recognized:

- i. That the cost of purchasing high-end ICT equipment and related applications is still prohibitive for many government entities. When coupled with the high cost of maintenance and regular servicing that is required to ensure smooth operations in a warm and dusty environment, this requires that government agencies have to set aside reasonable budgets to maintain ICT operations. At the moment, when it comes to the Electrogaz utility payment systems in Rwanda, the responsibility of managing

equipment lies with the Cash Power dealers in the private sector, who use it as a core part of their overall business operations: the selling of electricity is value added for them rather than their business proposition.

- ii. ICT literacy on the whole is still low in many of the government agencies. While there are grand plans to train staff on basic and advanced use of ICT, the cost of providing the necessary training is still prohibitive. In addition, many of these agencies are still manned by typical civil servants, used to doing things in some "old" manual way. Hence when new technologies are introduced, there is a tendency to resist change.

## 7. Recommendations

The case discussed does not specifically address issues of governance. There can however be no question that the innovative approach that was later made more efficient using ICT has led to full transparency of the billing system by eliminating those parts of the process that was suspect: intermittent meter reading, estimation, billing. Delivery of services has also improved, initially perceptively as consumers believed they were getting what they paid for and were not being cheated; and later through actual improvement in quality of service and expansion enabled by better revenue collection.

This case study provides recommendations that can be passed on to other post-conflict countries

1. The macro policy environment must be addressed if opportunities for exploiting ICT are to be created. In this case, we see the combination of national focus on exploiting ICT the led to the permeation of the mobile platform and an environment that promotes growth of the private sector coming together to provide and opportunity for fully electronic payment systems with the ubiquitous mobile phone as the user interface.
2. While the case study on its own does not demonstrate it, we know that top-level commitment to the national policy has been a key ingredient of success in creating the required environment.
3. The outsourcing model, even in environments experiencing fragility, can be a win-win situation:
  - The organization, in this case Electrogaz, does not have to invest in equipment and competencies outside its core mandate - the generation and distribution of power and water to the citizens. This selling of power is left to SMS media working on the MTN mobile platform. Electrogaz was willing to release the actual sale of power to others who could handle it more efficiently. This also reduced the cost of internal operations.
  - The selling of power is not the core business case of the private service provider. It is a value add that is achieved at small marginal cost, therefore yielding higher returns on infrastructure set up for more general functionality.



## ANNEXES



### Ethiopian Court Reform:

#### Annex 1: List of Institutions Surveyed List of Acronyms

|        |   |
|--------|---|
| BPR    | Business Process Re-engineering                 |
| CAR    | Court Administration Reform                     |
| CIDA   | Canadian International Development Agency       |
| CCMS   | Court Case Management System                    |
| CMI    | Crisis Management Initiative                    |
| CRS    | Court Reform System                             |
| CMS    | Case Management System                          |
| EEPCO  | Ethiopian Electric Power Corporation            |
| EICTDA | Ethiopian ICT Development Agency                |
| ETC    | Ethiopian Telecommunications Corporation        |
| GoE    | Government of Ethiopia                          |
| ICTs   | Information and Communication Technologies      |
| IVR    | Interactive Voice Response                      |
| JLSRI  | Justice & Legal Systems Research Intitue        |
| JSRP   | Justice System Reform Program                   |
| LAN    | Local Area Network                              |
| MoCB   | Ministry of Capacity Building                   |
| MoJ    | Ministry of Justice                             |
| NCRP   | National Court Reform Program                   |
| NGOs   | Non-Government Organizations                    |
| NIJIS  | National Integrated Justice Information System  |
| PSCAP  | Public Sector Capacity Building Program         |
| SMS    | Short Message System                            |
| SNNPR  | South Nations, Nationalities and Peoples Region |
| TV     | Television                                      |
| UNCC   | United Nations Conference Centre                |
| UNDP   | United Nations Development Programme            |
| VC     | Videoconferencing                               |
| VSAT   | Virtual Satellite Aperture Terminal             |

#### Annex 2 : List of Institutions Surveyed

| Institutions/Courts Visited                     | Type and Number of Respondents   |
|---|--|
| Federal Courts                                  | a) Federal Supreme Court<br>b) Federal High Court.<br>c) Federal First Instance Court (Yeka and Lideta sub-cities) |
| Amhara Region                                   | d) North Shoa High Court<br>e) Arerty Woreda Court   |
| Harari Region                                   | a) Harari Supreme Court<br>b) Harari Justice and Security Bureau   |
| Oromiya Region                                  | f) East Hararge High Court<br>g) Oromiya Supreme Court<br>h) Dukem Woreda Court                                    |
| South Nations, Nationalities and Peoples Region | i) Supreme Court<br>j) Hawassa High Court<br>k) Hawassa First Instance City Court                                  |
| Addis Ababa City Administration                 | l) Addis Ababa First Instance City Court<br>m) Addis Ababa Court of Appeal   |

#### Other Offices Visited

- n) Ethiopian ICT Development Agency (EICTDA)
- o) Federal Police Headquarters
- p) Ministry of Justice (MoJ)
- q) Ministry of Capacity Building (MoCB)
- r) Justice & Legal Systems Research Institute
- s) National Court Reform Project Office
- t) Justice System Reform Program Office

#### Annex 3: List of Instruments Used for Data Collection

| No.                 | Description of the Instrument                                  |
|---------------------|--|
| 1                   | Questionnaire for Federal Supreme Court                        |
| 2                   | Questionnaire for Courts Other than Federal Supreme Court      |
| 3                   | Questionnaire for Court Administration Staff                   |
| 4                   | Questionnaire for Judges                                       |
| 5                   | Questionnaire for Prosecutors                                  |
| 6                   | Questionnaire for Attorneys                                    |
| 7                   | Questionnaire for Courts Under Addis Ababa City Administration |
| Interview Questions |  |
| 1                   | Interview Questions for Court Clients                          |
| 2                   | Interview Questions for Government Agencies                    |

### Population Registration Systems in Uganda:

#### Annex 4: Acronyms and Abbreviations

| Term    | Description  |
|---------|--|
| CELADE  | Latin American Demographic Centre                  |
| CMI     | Crisis Management Initiative                       |
| CSPPro  | Census and Survey Processing System                |
| DCI     | Directorate for Citizenship and Immigration        |
| DFID    | Department for International Development           |
| DIS     | Directorate of Information Services                |
| EA      | Enumerations Areas                                 |
| EC      | Electoral Commission                               |
| GDP     | Gross Domestic Product                             |
| GIS     | Geographical Information Systems                   |
| ICT     | Information and Communications Technology          |
| ID      | Identification Card                                |
| IMIS    | Integrated Management Information System           |
| Kbps    | Kilo bits per second                               |
| KCL     | Knowledge Consulting Limited                       |
| LAN     | Local Area Network                                 |
| MoIA    | Ministry of Internal Affairs                       |
| MoICT   | Ministry of Information & Communication Technology |
| MoJCA   | Ministry of Justice and Constitutional Affairs     |
| MoWH    | Ministry of Works and Housing                      |
| NCIB    | National Citizenship and Immigration Control Board |
| NITA-U  | National Information Technology Authority-Uganda   |
| OCR     | Optical Character Recognition                      |
| OMR     | Optical Mark Records                               |
| PDA     | Portable Digital Assistant                         |
| PEAP    | Poverty Eradication Action Programme               |
| RCDF    | Rural Communications Development Fund              |
| REDATAM | Retrieval of Data for small Areas by Microcomputer |

|        |                                       |
|--------|---------------------------------------|
| RMS    | Register Management System            |
| SPSS   | Special Package for Social Scientists |
| UBOS   | Uganda Bureau of Statistics           |
| UCC    | Uganda Communications Commission      |
| UIA    | Uganda Investment Authority           |
| UN     | United Nations                        |
| UNDP   | United Nations Development Programme  |
| UNICEF | United Nations                        |
| UNIP   | Uganda National Identity Card Project |
| URSB   | Uganda Registration Services Bureau   |

Utility Payment Systems in Rwanda:

Annex 5: Acronyms and Abbreviations

| Term     | Description                                       |
|----------|---|
| BCR      | Bank of Commerce of Rwanda                        |
| CMI      | Crisis Management Initiative                      |
| DFID     | Department for International Development          |
| DIS      | Directorate of Information Services               |
| GDP      | Gross Domestic Product                            |
| ICT      | Information and Communications Technology         |
| Kbps     | Kilo bits per second                              |
| KCL      | Knowledge Consulting Limited                      |
| LAN      | Local Area Network                                |
| MINIFRA  | Ministry of Infrastructure                        |
| MINITERE | Ministry of Water                                 |
| NICI     | National Information Communication Infrastructure |
| REMA     | Rwanda Environment Management Agency              |
| RITA     | Rwanda Information and Technology Authority       |
| RURA     | Rwanda Utilities Regulatory Agency                |
| RWF      | Rwandese Francs                                   |
| SCADA    | Supervisory, Control and Data Acquisition         |
| UN       | United Nations                                    |
| UNDP     | United Nations Development Programme              |
| UNICEF   | United Nations                                    |





Federal Foreign Office

# CRISIS MANAGEMENT INITIATIVE

*Building Bridges for Sustainable Security*