E-Governance in Uganda: The Case of DistrictNet

Victor VAN REIJSWOUD, Arjan DE JAGER
International Institute for Communication and Development (IICD), Raamweg 5, 2502 AN The Hague, The Netherlands.
Email: victor.vanreijswoud@gmail.com, ajager@iicd.org
Tel: 31-70) 311 7311, Fax: 31-70) 311 7322

Executive Summary

E-governance operates at the cross roads between Information and Communication Technology and government processes. In order to be successful, e-governance must be firmly embedded in the existing government processes, must be supported, both politically and technically, by the governments, and must provide users with reasons to use these services.

In this article, we evaluate DistrictNet, an ongoing e-governance programme in Uganda, which tries support the decentralization process at the local government level through the use of ICT. The achievements of the programme are presented and evaluated. On the basis of this evaluation, we elicit lessons that can be used to guide similar programmes at the local government levels in the developing world.

Guiding Principles for Successful e-Governance

Governments in the developing world are under international pressure to increase transparency, support decentralization, decrease corruption and participate in global digital information sharing, and national pressure from the private sector and citizens for better services and increased transparency. E-Governance programmes can be a powerful tool for bringing change to government processes in the developing world by using ICT's to increase the efficiency and effectiveness of organizations and enabling developing nations to align their processes with best practices from the developed world.

The United Nations [1] defines e-government as "A government that applies ICT to transform its internal and external relationships" (United Nation, 2003). ICT allows a government's internal and external communications to gain speed, precision, simplicity, outreach and networking capacity, leading to reduced costs and increased effectiveness. In addition, it can equip people for genuine participation in an inclusive political process. Heeks [3] makes distinction between three domains of e-governance: e-administration, which focuses on improving the internal workings of the public sector; e-services, which focus on improving the relationship between the government and its citizens; and e-society, which extends the other domains by focusing on institutional stakeholders to build durable partnerships and social and economic communities. E-society was not within the scope of the DistrictNet programme.

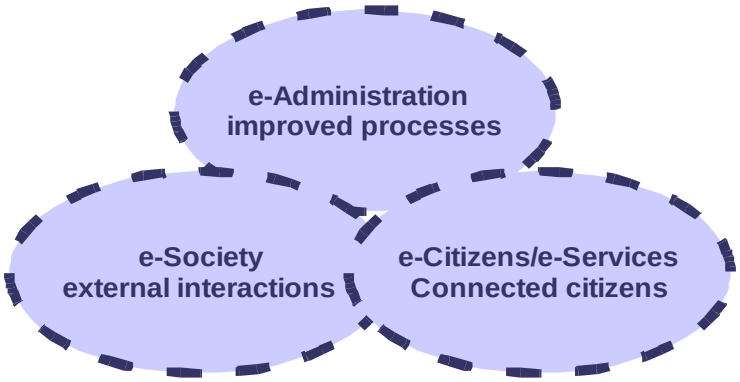

Figure 1: Overlapping domains of e-Government (adapted from Heeks, 2001)

Successful e-government depends on several principles, which can be grouped, broadly, into (1) the reasons that governments should use ICTs and develop an on-line presence, (2) the ability that governments have to use ICTs and create that on-line presence, and (3) the reasons for people to use ICTs to communicate with the government.

DistrictNet

Uganda's DistrictNet programme began in 2002 and has completed its pilot cycle. The programme has officially been handed over to the four pilot districts in February 2007. DistrictNet's goal was to improve the transparency of local government and to support decentralization through the use of ICT. Until May 2005, the programme was fostered by Uganda's Ministry of Local Government (MoLG), with financially support of DFID and International Institute for Communication and Development (IICD). The Districts became fully responsible for implementation of the programme from May 2005. DistrictNet emerged from a roundtable conference organized by IICD ([4]) and Uganda Communications Commission (UCC) themed "ICT for Rural Development." DistrictNet aims to achieve five overall goals: increased availability of management information; increased coordination between headquarters and sub-counties; reduced costs of coordination between headquarters and sub-counties; improved IT skills among users; and increased availability of public information. The programme has been implemented in four districts (Mbarara, Lira, Mbale, and Kayunga) and within these districts in eleven sub-counties. The programme was aligned with the plans of the Uganda Communications Commission to spread Internet connectivity to District centres. IICD supported the formulation and implementation of the programme via research, strategic advice, capacity development (in ICT skills and soft skills) and general programme management.

Implementing DistrictNet was a major challenge from the start, and the rural setting and scale posed some new and unexpected problems. For instance, professional technical ICT knowledge and computer literacy levels were much lower than anticipated. And connections between headquarters and the sub-counties demanded some innovative strategies in terms of connectivity solutions and alternative energy sources.

DistrictNet and E-administration

DistrictNet has transformed the way important information is processed in the pilot districts. It has had an enormous impact on the government planning in the four pilot districts and can be considered as a unique example of e-administration in East Africa. At the start of the programme, the basic data was collected at parish level (in hard-copy form) and forwarded to sub-county administration. The sub-county's responsibility was to collect and compile all data from the parishes, and then forward it to District HQ. Then, the District HQ, like the sub-county administration, checked the data for completeness and forwarded the hard-copy data to MoLG, where digital recording took place. All data was in hard-copy form, and was physically transported by road. The process is depicted in figure 2.

Several problems occurred in this process. In the first place, the data which was collected at the parish level took a long time before reaching District HQ and MoLG. We observed information backlogs of three to six months. Secondly, data was lost in transport, never reaching the District HQ and MoLG. Indeed, some data was never collected properly in the first place. For example (Kintu [5]), in one district less than 20% of the information required for budget and planning reached the MoLG. This implied that in 80% of the sub-counties, the planning and budgeting process was seriously undermined. These two problems guided the programme design.

Currently, the basic data is still collected at the parish level and forwarded to sub-county administration using the same hard-copy standard forms. The first change was implemented at the sub-county level: the eleven pilot sub-counties are now responsible for the digitization of data. After digitizing the data and checking its completeness, the sub-counties then forward the data via email to District HQ, resulting in a timely delivery of the data needed for planning and budgeting purposes.

The third change was implemented at District HQ, where District Planners (who were trained to use data analysis tools) now perform data analysis and provide timely feedback to the sub-county administration and the parishes.

A fourth change is in the improvement in lead times for the data's arrival at MoLG, as the pilot districts are now able to transfer their information electronically to MoLG. Moreover, MoLG can now work much more efficiently and effectively because it is no longer responsible for digital recording, thus allowing more time for analysis and informed decision-making. The process is depicted in figure 2.

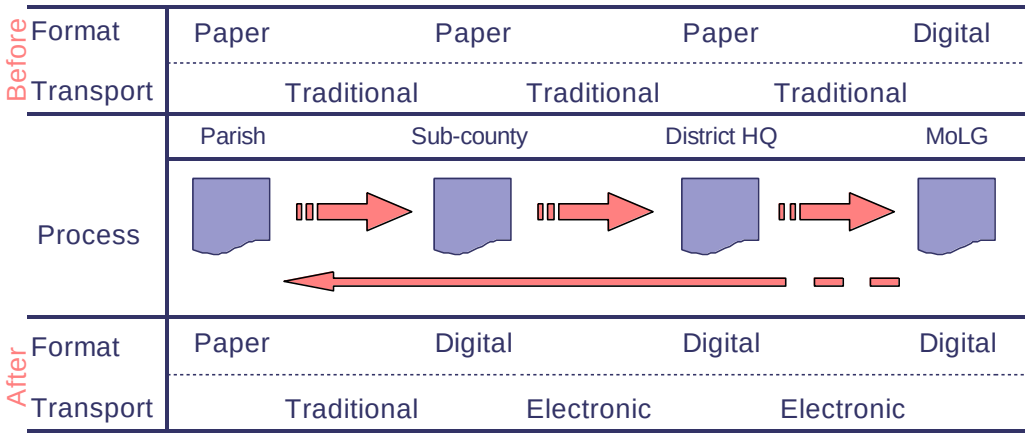

Figure 2: Business process improvement in DistrictNet

In the reverse feedback flow, the decision was made to send relatively little information, using low-end tools, to provide feedback from MoLG to the District HQ and from District HQ to lower local government levels. This feedback mechanism enables lower-level governments to finalize their planning and budgeting processes.

DistrictNet and E-services

Efforts to offer direct information services to the citizens of the pilot districts began in 2004. In this respect it should be mentioned that Uganda is a strongly decentralized country and most governmental information services (e.g. business licenses, tax forms and information) are already available to the citizens in hard-copy form at the sub-county level. As a result, offering these types of services in electronic form was not among the priorities.

Lessons learned

To conclude this paper, we want to elicit some lessons learned from the DistrictNet programme in Uganda. We focus our lessons through the three main categories identified in the United Nations' World Public Sector Report 2003 [1]. In addition to the points raised in the UN report, we identify six new lessons in three categories:

1. Focus of ICT in government operations

DistrictNet presents a good example of embedding the introduction of e-government in the larger context of priority development needs in a country (in this case, the government's decentralization programme). Improvement in efficiency and effectiveness may be important at a national level, but at an individual level it can also be considered as a threat and thus a reason to resist or even undermine the programme. However, the programme is most likely to achieve good results (i.e. improvements in efficiency and effectiveness) when it is part of the success of high priority development programmes in the country, and where results are benchmarked against national development goals.

Think big, but begin small

Gradual and phased implementation of the programme is the key to success. In other words: Think big, but begin small. DistrictNet has been designed as a pilot programme. The main goal was to build knowledge and gain experience. New programmes should build on these experiences. It is important to integrate this goal in the design of the next phases of this pilot programme.

Create feedback loops in e-governments programmes

In countries like Uganda, civil servants at the local levels are often asked to gather data but seldom receive feedback on the impact of their data-collecting activities. A good feedback mechanism in an e-governance programme creates a tool to provide the local levels with information, and the improved information position of the officers at the local government levels enhances their commitment to the introduction of e-governance.

2. Ability to use ICT in government

Our observations from the DistrictNet programme show that in a development context the ability of local governments to design, implement, use and maintain e-governance in action should not be over-estimated. This might be an important difference with e-governance programmes in the developed world. As indicated by Bitwayiki, de Jager [2] Training and capacity development is key to the success.

Stress capacity development as a key success factor

Five types of knowledge and skills are necessary for successful ICT implementation, as well as sustainable e-governance:

1. Professional technical knowledge to implement and to maintain the technical infrastructure an to anticipate the upcoming of new technologies
2. Professional business knowledge to guide and check the quality of the suppliers implementing and maintaining the technical infrastructure (tendering, quality control, Service Level Agreements) and monitor the investments in an e-government programme
3. Computer literacy at the government level, such as basic knowledge about how to operate the computers and their applications, and an understanding of the role ICT can play in the improvement of work processes
4. Computer literacy among users, such as basic knowledge about how to operate the computers and e-government applications
5. ICT change management skills among management and administrators

Computer literacy is often defined as the ability to use office applications; however, e-governance programmes also demand that staff have a good understanding of the role that ICT can play in their organization and in their work. In the developing world, the level of computer literacy among the people in the rural areas is extremely low. Consequently, in the design and implementation of any e-governance programme the

training component should focus on developing the skills to operate and maintain the applications used in the e-governance programme, as well as on educating people about the possibilities of ICT for government operations. When ICT solutions are outsourced, business-related skills such as supplier and contract management are vital, since the quality of service of ICT suppliers in rural environments is often low.

Recognize that fighting technology takes time

In DistrictNet's initial stage of implementation, the primary focus was on developing the ICT infrastructure to enable e-administration and e-services. Often in e-governance, the primary focus is on these technical aspects, and the organizational and social aspects are treated with less priority. It takes time to change this technology-focused attitude, and the issue needs to be addressed from the start of the implementation.

3. Strategies for connecting citizens

Connecting the citizens to the programme is probably the biggest challenge, especially with the local government in rural areas. One of the reasons for the success of DistrictNet is that it has been using traditional means combined with modern (ICT-enabled) strategies to distribute information to the citizens. In the excitement of the introduction of new technology, programmes tend to forget to include the traditional means for information distribution, such as radio, television, bulletins, bulletin boards, word-of-mouth and the new channels offered by mobile telephony (e.g SMS).

Emphasize that information is a commodity

The success of e-administration and e-services programmes relies heavily on the quality of data and information. The availability of quality data and information is too often taken for granted.

- The quality of data should be monitored, while the quantity of data at higher levels has to reduced
- Information is not "just lying around"; it should be derived from the right datasets. Therefore, lobbying at all levels, and especially at the political level, is needed to ensure that the necessary data can be collected and used.
- Incentives should be in place for data generation at lower local government levels (e.g.: Direct outlets of data should be present at the level at which the data is being collected).

Ensure content availability and usage

The availability of information is key to keeping momentum in an e-governance programme, and the way the users employ this information is the measurement for success. Access to information, and thus the success of ICT projects, is determined by:

1. *Awareness*: Do the potential staff members and end-users know the services exist?
2. *Connectivity*: Are the services and information available?
3. *Affordability*: Can government administration and the citizens afford the

access to the information without external financial support?

4. *Capability*: Have the potential users and the staff members of the project the skills required for access?
5. *Sustainability*: Will similar services be available in the (near) future?

DistrictNet experiences show that the content needs careful management in order to keep citizens attached to the project. We have noticed that centralized management of local information does not work, as the information is not in line with the local needs and is often outdated or arrives too late to be useful.

Conclusions

DistrictNet can serve a reference and learning model for other e-governance programmes in a development context. The programme is designed to extend in all three domains of e-government: e-administration, e-services and e-society. Furthermore, the programme not only automates the existing processes, but also prompts the improvement of processes, notably in budgeting and planning, which have been re-structured and optimized.

Clearly, introducing ICT at the local government level can lead to major improvements in performance; however, the low penetration of ICT skills and equipment in countries like Uganda can set limitations. Governments need to continue their efforts to develop ICT infrastructure nationally and to increase the level of ICT skills among their citizens, and especially to concentrate in their efforts on the rural areas, while development partners should establish more research programmes to ensure the successful implementation and support of ICT.

6. References

[1] United Nations, World Public Sector Report 2003: E-Government at the Crossroads. United Nations, Department of Economic and Social Affairs, New York, 2003.

[2] Bitwayiki, C., de Jager, A., Building Capacity for Embedding: The DistrictNet Uganda Programme. IICD, 2004 (capacity.org-2004; download available at www. capacity.org and www.iicd.org).

[3] Heeks, R., Understanding e-Governance for Development. I-Government Working Papers No. 11. Institute for Development Policy and Management, University of Manchester, 2001a. (download available on www.man.ac.uk/idpm)

[4] IICD, The ICT Roundtable Process: Lessons Learned from facilitating ICT-Enabled Development. International Institute for Communication and Development, The Hague, 2004. (download available on www.iicd.org)

[5] Kintu, M.J.R., Mbeine, E., Output to Purpose Review DistrictNet Uganda. FIT Uganda, 2004 (download available at www.iicd.org).

About the authors

Dr. Victor van Reijswoud is Professor of Information Systems and E-Commerce in the Department of Computer Science and Information Systems at Uganda Martyrs University – Nkozi in Uganda (www.umu.ac.ug). He can be reached at: victor@eacoss.org

Drs. Arjan de Jager is country manager for Uganda at the International Institute of Communication and Development in Den Haag in the Netherlands (www.iicd.org). He has been actively involved as advisor in the DistrictNet programme. He can be reached at: AJager@iicd.org

Short Biography of the Authors

Prof. Dr. Victor van Reijswoud

Victor van Reijswoud (PhD) is Professor of Information Systems at Université Lumière in Bujumbura – Burundi and visiting professor at Uganda Martyrs University in Nkozi – Uganda. He is also working as researcher for the World Dialogue on Regulation (www.regulateonline.org).

He has been invited as lecturer and researcher at several universities and colleges in The Netherlands (Delft, Maastricht, Utrecht, Den Haag) and outside The Netherlands (State University New York – USA, Universityof Cape Town – SA, Aachen – D, Uganda Martyrs University – UG, Makerere University – UG). His present research concentrates around the theme: Appropriate ICT for developing economies and role of F/OSS for development. He has authored over 60 international publications.

Dr. van Reijswoud has elaborate industry experience. He has served as director of Innovation and Research at Devote/Ordina in the Netherlands and has been active as adviser and consultant for a large number of organizations in the private and public sector in Europe and Africa.

Dr. van Reijswoud is a leading ICT4D and F/OSS academic and consultant on the African continent. He is the initiator, architect and project coordinator of the largest F/OSS migration on the African continent (total migration to F/OSS (servers and desktops) of Uganda Martyrs University) and adviser in several other migration projects in the educational sector. To strengthen the relationship between the F/OSS projects and F/OSS professionals, he has initiated the East African Center for Open Source Software (EACOSS) in 2004 in Kampala - Uganda. At present EACOSS is recognized one of the most active and successful F/OSS initiatives in Africa.

As ICT4D consultant he has been involved in projects in Uganda, Burundi, Tanzania, Malawi, and Ghana.

Drs. Arjan de Jager

Arjan de Jager is country manager Uganda for the International Institute for Communication and Development – IICD (www.iicd.org) in The Hague in the Netherlands. Arjan studied Physics & Mathematics in Utrecht, The Netherlands. After his study he worked as a lecturer Computing Science in the Netherlands and in Zimbabwe. From 1996 he has worked as an Intranet consultant for the Polytechnic of Amsterdam and Greenpeace International both in Amsterdam.

IICD was established by Jan Pronk in 1996 with the objective to assist developing countries to keep up with the latest trends in Information and Communication Technologies (ICTs).

IICD's strategy is delivered through a series of integrated Country Programmes in which:

1. IICD facilitates ICT Roundtable Processes in nine developing countries, where local stakeholders identify and formulate ICT-supported policies, programmes and projects based on local needs. The Round Table process is representing the process dimension of the IICD interventions.
2. IICD facilitates Capacity Development interventions, which are organised in co-operation with training partners in each country to develop the skills (ICT related and non-ICT related such as strategic planning, project and financial management) and other capacities required to implement the formulated policies, programmes and projects

Currently about 120 projects are in implementation in the sectors Education, Good Governance, Agriculture, Livelihood opportunities, Health and Environment ranging from Telemedicine projects to Crop marketing bureaus.