

Chapter 8

Recommendations

Conclusions

8. RECOMMENDATIONS

8.1 Consideration of the human factor

In Tanzania the average computer literacy is much lower than in Germany. Employees tend to feel uncomfortable about ICT or fear it since they might feel inadequately prepared for the change. Those fears should be addressed in an early phases with a policy of openness and transparency. The approach followed in Kinondoni e-Government project was to involve user groups in early and designing phase. This has proved to be very successful, reaching a good resonance between the employees. The active participation of user groups definitively contributed in a fundamental way to the success of the overall project.

Another demonstrated good motivation factor for the staff is the provision of computer lessons. Employees tend to be very responsive and willing to take courses that improve their professional formation, enhance their productivity at work and diminish fears related to the introduction of ICT solutions.

8.2 Need openness to changes

Furthermore it must be noted that an e-Government project will be successful only if it is accompanied by a change in mindset and work culture in order to integrate government processes and functions to rationalise internal processes and services for the citizen. So, the effectiveness of ICT in government is closely related with the capacity of governments to induce a culture of change, networking within its institutions as instrumental to transparency and knowledge exchange and creation. It is important that those changes are not seen as threat but rather as opportunity by the municipal staff.

8.3 Need management support

In both Ilala and Kinondoni, where e-Government projects have been most successful, the Municipal Directors are highly supportive of the introduction of ICT in their municipalities. Dedicated personal had been hired and funds had been allocated to ICT Operations even before independent ICT unit were officially recognised. This made ICT de facto already an operative unit and the local government reform in July 2005 just formalised officially this situation. The management endorsement in both cases of Ilala and Kinondoni was a fundamental success factor. Unfortunately not all Municipal Directors are equally sensitised on the importance of e-Government as a key factor of making their agencies fit for the current information society and for the future development. The organisation of computer training workshops for decision makers would be very useful to increase their acceptance and support for e-Government initiatives.

8.4 Need to recognise ICT Operations as a functional independent unit

The reform process in Tanzania is being applied in all governmental levels. The Central Government did recognise the importance of an independent ICT unit and the Information Education and Communication Unit of PORALG was established at the beginning of 2005.

During their reform process, the local authorities possess a certain grade of autonomy in their decisions. This creative freedom had very negative consequences in the case of Temeke and of the City Council, since for those two local councils ICT Operations was not recognised as an independent unit. The case of the City Council is particularly grave, where the existing ICT unit had been removed and consolidated under the Statistic and Planning Unit.

This is a short-sighted decision. The author strongly recommends to review it as soon as possible.

8.5 Dar es Salaam City Council should assume a more crucial role in carrying forward the e-Government project.

Unfortunately, not lastly as consequence of the recent reorganisation, currently the City Council has only the capability of keeping up and running the current ICT environment, but no resources to allow further development.

According to the author's opinion, the City Council should be able to assume a leading position in carrying forward the e-Government endeavour for the city Dar es Salaam as a whole. Important projects still need to be implemented, e.g. GIS, Document Management System and a web portal for the city Dar es Salaam. For his crucial and irreplaceable role, the City Council is the natural contact authority for ICT projects involving the whole city.

8.6 ICT should not considered as a pure cost factor but rather as a powerful tool to save money

It must be noticed that ICT is not a cost factor but rather a solution to reduce costs. For example, as reported in the workshop "e-Governance: Replication of the Kinondoni experience" held in Dar es Salaam 24th – 27th May 2004, the money allocated in the developing a Human Resources Management System was amortised within one year in term of saved time, more rational utilisation of resources and increased transparency (e.g. "which employees are actually on the municipal payroll?").

Since it is very difficult to estimate the real savings which are resulting from optimised processes, increased effectiveness and efficiency due to an e-Government project, the real figure tends to be highly underestimated. Similarly the considerable advantages of the reduction of dishonesty,

cheating and bribery due to the usage of electronic processes are not immediately visible. Tanzania as a country with high corruption rates surely gains a great deal thanks to the transparency, the availability of information and accountability.

8.7 Follow for the Kinondoni approach: go for a scalable solution which brings fast results

Since the decision makers in Tanzania tend to belong to the generation which didn't have an extensive computer literacy, they might have little understanding for projects with elevate costs and bring visible results only in some years' time. This is especially true considering that Tanzania is still a poor country and has to be extremely careful with seemingly unprofitable governmental expenditures. Tangible results will help also in increasing the employees' acceptance and support for the new ICT solution.

Given the urgent need of introduction of ICT technology in the public administration and the scarcity of ICT highly specialised professionals, the author recommends to select easy and scalable solutions, which can be implemented in a short time. The scalability is important, so after having covered the most urgent needs, the e-Government Task Force can decide to realise further options and increase the capabilities of the existing solutions.

8.8 Creation of a network of local authorities and standardisation of the e-Government solutions

The recommendations of the action plan³⁸ of MEDIA@Komm-Transfer are directly applicable to Tanzania. Media@Komm-Transfer³⁹ is a project initiated

³⁸ MEDIA@Komm-Transfer, Capgemini, Aktionsplan, Best-Practice-Transfer von E-Government-Innovationen, November 2001

³⁹ www.mediakomm-transfer.de/Content/GemeinsameDokumente/Dokumente/Flyer_20english.property=dokument.pdf

by the German Federal Ministry of Economics and Labour (BMWA) in order to accelerate the widespread expansion and integration of e-Government in all public administrations of Germany.

The action plan describes successively how to create the best environment for the optimal spreading of already known solutions. According to the document, the following phases should be performed (see figure below):

1. Creation of a network of local administrations which are extensively cooperating. This network allows the reaching of common objectives and helps to avoid redundancies in the development process.
 2. Standardisation in the development and diffusion of e-Government solutions
 3. Roll-out of the known solutions from the local authority which developed the process to its regional neighbourhood. The model for the diffusion is not a complete area coverage but rather punctual diffusion from pioneer regions, to which the others will follow.
 4. Creation of an e-Government Competence Centre which would assist in:
 - a. Establishment and maintenance of the network of local authorities
 - b. Support by the standardisation process
 - c. Decentral escort of the roll-out phase
 5. International publishing of e-Government processes and standards. Germany aims to be a partner for other countries to spread e-Government know-how and best practices
 6. The transfer agency is the e-Government Competence Centre with the following responsibilities:
 - a. Project management
-

- b. Project contact point
- c. Press and public relation
- d. Event management
- e. Quality assurance

7. Creation of an online portal

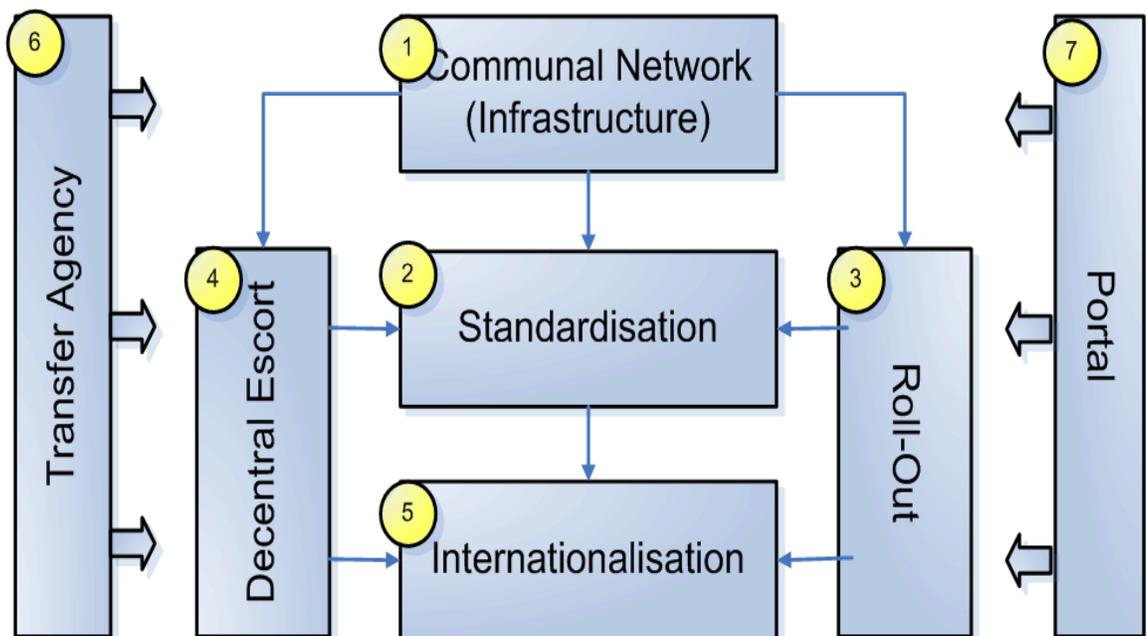


Figure 28: Media@Komm model of efficient replication of e-Government projects

8.9 Concrete recommendations derived from the Media@Komm-Transfer model applied to the Tanzania case

The author strongly recommends the creation of an e-Government Competence Centre (the Transfer Agency) with experienced staff that worked in previous e-Government projects in Tanzania (for example staff from the Kinondoni ICT Unit). This Competence Centre should not report to a single

local authority but directly to a previously defined office of the central government (for example to the Information Education and Communication Unit in PORALG)

Similarly as in the Media@Komm-Transfer model, the responsibilities of this Competence Centre should be:

1. Coordinate the communication, experience and know-how transfer between the local authorities in the country.
2. Provide consultancy and e-Government best-practices
3. Assist in the standardisation process
4. Provide man power and advising for the roll-Out process
5. Report the advancements of current e-Government projects around the country to the central Government
6. Secure the cooperation with possible donors or other international institutions

Of essential importance is to avoid the fragmentation which characterised past e-Government initiatives. Fragmentation indeed turns out to be very expensive for duplication and overlapping of efforts. Non-standard solutions are difficult to maintain, require long implementation times and increase the difficulty of information exchange between different local authorities

8.10 Striving toward more international cooperation

The cooperation with the Dutch International Institute for Communication and Development (IICD) and the Canadian Company New Millennium Technologies (NMT) proved very profitable both in the past as in the present.

Tanzania can greatly profit from advice and knowledge transfer from countries with longer experience in e-Government projects as well from their financial support.

In this regard the author calls the attention to the following sentence, quoted from the informative flyer of the German project MEDIA@Komm-Transfer⁴⁰ “Apart from the national development of E-Government standards and their nationwide roll-out, the aim of the MEDIA@Komm-Transfer project is to distribute E-Government solutions and standards internationally, and to improve cooperation with governments abroad. These transfer efforts are aimed principally at countries that already have close technological, economic and cultural ties with Germany.”

Tanzania is an excellent candidate to be one of those transfer partners due to its intense relationships to Germany started from the colonial time and which have been carried on and intensified till the present time.

⁴⁰ www.mediakomm-transfer.de/Content/GemeinsameDokumente/Dokumente/Flyer_20english.property=dokument.pdf

CONCLUSIONS

The advantages of e-Government are numerous and manifold. Correctly used, e-Government is definitely a powerful tool to fight corruption, to increase transparency, to save costs, to enhance efficiency and effectiveness, to bring revenue growth as well as to improve legitimacy.

The proper introduction of suitable ICT solutions indeed brings transparency in data, decisions/actions, rules, procedures and performance of public agencies; automates processes, diminishing discretion and delay; makes decisions traceable, building accountability; provides documentation to citizens empowering them; centralises and integrates data, making data elaboration fast and reliable; makes indicators easily accessible, increasing the responsibility of the government to change conditions.

Certainly e-Government is more than just the acquisition of computers for the public agency and their connection to the internet. The aim of this master thesis is to work out a viable framework for successful selection, planning and realisation of the right solutions, exemplified by the practical realisation through the case study in the education sector.

Tanzania can greatly benefit from an accurately planned ICT introduction in the public sector. Even being a poor country the investments in ICT would largely pay back in term of return of investments and in terms of the above mentioned aspects.

Success in different sporadic e-Government projects like Ilala and Kinondoni show clearly that ICT usage for the public agency is highly feasible and brings immediate advantages. What now Tanzania needs is to consolidate this initial phase, made of "heroic" and ad hoc solutions, to render it repeatable and available for the whole country. This publication wants to be a contribution in this direction.

List of interviewees

Selected bibliography

Internet pages

Appendixes

LIST OF INTERVIEWEES

Mahunda Achentлика, Temeke Municipality, Head of ICT Operations

Ralf Armbruster, Stuttgart Municipality, Head of e-Government Competence Center

Dionice S. Boay, Kinondoni Municipality, Municipal Educational Officer

Samuel A. Bubergwa, Ilala Municipality, Head of Waste Management Department

R. Bukuku, Kinondoni Municipality, Cooperatives Section

Mheziwa Bundala, Dar es Salaam City Council, Head of ICT Operations

Elias B. M. Chinamo, Dar es Salaam City Council, Head of Waste Management Department

Edgar M. Jeremani, Kinondoni Municipality, ICT department

Dr. Judith Kahama, Ilala Municipality, Head of Health Department

Fred Kahisha, Kinondoni Municipality, Supplies Section

Wema Kajigili, Ilala Municipality, Head of Education Department

Marietha Kayombo, Kinondoni Municipality, Manager of the Statistic and Logistic Unit

Njugona Kanger, NPK Technologies, ICT Consultant for Kinondoni Municipality

I. A. Kisisa, Ilala Municipality, Head of Works Department

Faustin Kikoue, Kinondoni Municipality, Statistic and Logistic Officer

John S. Kuchaka, Kinondoni Municipality, Finance Department

John Joel Kyaruzi, Tanzania Investment Centre (TIC), Director of Research and Information System

Hanima, Temeke Municipality, Education Department

Hysinda Madinda, Kinondoni Municipality, Statistic and Logistic Officer

Mwajuma Magwiza, Kinondoni Municipality, Community Development Section

Damas O. Manyalla, Temeke Municipality, Legal and Security Unit

Cleopas Manyangu, Kinondoni Municipality, Legal Unit

Hussein Masudi, Kinondoni Municipality, Statistic and Logistic Officer

Thomas Mathew, Tanzania Education Information Services Trust (TanEdu), Managing Director

Iddi A. Mfaume, Temeke Municipality, Planning, Statistics and Coordination Department

H. Mgaya, Temeke Municipality, Head of Engineering Department

Hamidu Mtoo Mgaya, Dar es Salaam City Council, Principal Surveyor, former head of ICT Operations

Godfrey Mkoba, Dar es Salaam Secondary School, Teacher

Nicolaas Moens, International Institute for Communication and Development (IICD), Country Manager Tanzania & Lead Facilitator

G. L. S. Moya, Dar es Salaam City Council, Head of Finance Administration And Personnel Department

S.K. Mpapasingo, Temeke Municipality, Architectural Department

Enock Mpenzwa, Tanzania Commission for Science and Technology (COSTECH), Senior Systems Analyst II

Joshua Mtale, Temeke Municipality, Head of Accounting Department

Edna Mtangoo, Dar es Salaam Secondary School, Head of Teachers

Dr. Deo M. Mtashiwa, Dar es Salaam City Council, Head of Health Department

Elias Mturi, University of Dar es Salaam (UDSM) Net Services Department, Network Engineer

Deodatus Murobi, University Computing Centre Ltd. (UCC), Software Engineering Team, Senior System Analyst

Edgar Mushokolwa, University Computing Centre Ltd. (UCC), Software Engineering Team, Software Developer

Prof. Beda Mutagahywa, University Computing Centre Ltd. (UCC), Managing Director

Mwaigomole, Temeke Municipality, Head of Planning Department

Angumbwike Mwaitebele, Ilala Municipality, Head of ICT Operations

K. C. L. Mwambene, Dar es Salaam City Council, Head of Works And Fire Department

Emmanuel Mwawanya, Ali Hassan Mwinyi Primary School, Head of Teachers

J. Ndayigeze, Kinondoni Municipality, Trade and Industries Department

Raphael Ndunguru, Dar es Salaam City Council, Head of Urban Planning Department

Edephonce Ngemera Nfuka, University Computing Centre Ltd. (UCC), Deputy Managing Director, ICT Consultant for Kinondoni Municipality

Reward Moses Nyange, Kinondoni Municipality, Municipal Valuation Section

Joash E. Nyitambe, Kinondoni Municipality, Head of ICT Operations

Nasser Ouma, Temeke Municipality, Finance Department

Dickson Rugaimukamu, formerly University Computing Centre Ltd. (UCC), Software Engineering Team, System Analyst

A. Selukiurge, Dar es Salaam City Council, Planning, Head of Monitoring and Statistics Department

Freddy Wilfred Urio, Kinondoni Municipality, Educational Department, ICT responsible

Hanji Yusuph, Kinondoni Municipality, Statistic and Logistic Officer

Graham Wilson, University Computing Centre Ltd. (UCC), Software Engineering Manager

SELECTED BIBLIOGRAPHY

Sam Agere, *Promoting Good Governance: Principles, Practices and Perspectives*, Commonwealth Secretariat, London (2000).

BundOnline 2005, *Planungsleitfaden - zur Umsetzung der Dienstleistungen im Rahmen der Initiative BundOnline 2005 - Release 2.0*, Berlin, October 2002

Larry Caffrey, *Electronic Government in the Information Society*, ICA – International Council for Information Technology in Government Administration, London (1996).

Erika Cammi, *EMIS-System Requirements Specification, Education Management Information System for the United Republic of Tanzania, Version 2*, 2006

Capgemini, *Aktionsplan MEDIA@Komm-Transfer, Best-Practice-Transfer von e-Government-Innovationen*, November 2001

Carnegie Mellon College, *Capability Maturity Model, Version 1.1*, Pittsburg, March 2002

COBIT Steering Committee and the IT Governance Institute, *COBIT Framework 3rd Edition*, July 2000

EU-UNESCO – *Educational Statistics Capacity Building Programme in support to the United Republic of Tanzania – Workshop on the Harmonisation of Educational Management Information System and the Local Government Management Information System –Tanzania October 2004 –Analytical Report*

German Federal Office for Information Security (BSI), e-Government Project Team, *e-Government Manual*, March 2004

German Federal Office for Information Security (BSI), e-Government Project Team, *e-Government Phase Plan*, March 2004

German Federal Office for Information Security (BSI), *IT Baseline Protection Manual*, 2004

JDEV, *ISSP Template revised for the Government of Tanzania*, August 2004

J. Kyaruzi, B. Shah, E. Mpenzwa, E. Mugerezi, E. N. Nfuka, N. Sola, *Kinondoni Municipal Council eGovernance Programme*, November 2003

Ir. Nic Moen and Prof. Dr. Felix Janszen, *A promising approach to innovation: Influencing and synchronizing innovation process*, September 2005

Organisation for Economic Co-operation and Development (OECD). *Guidelines for the Security of Information*, Paris 1992.

Olaf Nielinger, *Creating an Environment for ICT In Tanzania – Policy, Regulation and Markets*, September 2004

New Millenium Technologies Inc., Industry Canada Sustainable Cities Initiative, *Study Leading to Implementation of Information Technology and Connectivity Project in the City of Dar es Salaam, Tanzania*. February 2004

Joash. E. Nyitambe, *The Need for Information and Communication Technology for Sustainable Development*, November 2001

Rogers W'O Okot-Uma, *The Roadmap to e-Governance Implementation: Selected Perspectives*, November 2004

Heeks Richard, *Reinventing Government in the Information Age. International practice in IT-enabled public sector reform*, Routledge, London 1999

Tanzania Commission for Science and Technology (COSTECH), *Proceeding of the Workshop “e-Governance: Replication of the Kinondoni experience*, Dar es Salaam 24th – 27th May 2004

The United Republic of Tanzania, Ministry of Communications and Transport, *National Information and Communications Technologies Policy*, March 2003

The United Republic of Tanzania, Ministry of Education and Culture, *Basic Statistics in Education*, 2003

The United Republic of Tanzania, Ministry of Education and Culture, *EMIS Development Plan 2005 -2008 – Education Sector Development Programme – Information and Communication Technology (ICT)*. January 2005

The United Republic of Tanzania, Ministry of Education and Culture, *Education Sector Development Programme, Primary Education Development Plan (PEDP) 2002 – 2006*, April 2004

The United Republic of Tanzania, Ministry of Education and Culture, **Basic Education Development Committee (BEDC), *Education Sector Development Programme, Secondary Education Development Plan (SEDP) 2004 – 2009*, July 2001**

The United Republic of Tanzania, Ministry of Education and Culture, *The National Education Act No. 25*, 1978

Jeffrey L. Whitten, Lonnie D. Bentley, Kevin C. Dittman, *System Analysis and Design Methods – 5th Edition*, 2001

The Working Group on e-Government in the Developing World, *Roadmap for e-Government in the Developing World - 10 Questions e-Government Leaders Should Ask Themselves*, April 2002

INTERNET PAGES

All listed websites have been last accessed in February 2006

www.bsi.bund.de/fachthem/egov

www.bsi.bund.de/english/themes/egov/6_en.htm

www.bundonline2005

www.cammi.de/index.htm

www.cia.gov/cia/publications/factbook/geos/tz.html

www.commonwealthdigitalopportunities.com/gif/eGovernance.pdf

www.costech.or.tz

www.dcc.go.tz

www.deutschland-online.de

www.digitalgovernance.org

http://dmoz.org/Society/Issues/Science_and_Technology/Computers/Government_Computerisation

www.duei.de/iak

www.duei.de/iak/de/content/forschung/pdf/projektnieltext7.pdf

www.duei.de/iak/de/content/forschung/pdf/projektnieltext8.pdf

www.eac.int

www.egov-zentrum.fraunhofer.de

www.egovlinks.com/world_egov_links.html

www.egovmonitor.com

www.electronicgov.net

www.electronicgov.net/pubs/research_papers/guest/Roadmap2eGov.pdf

www.estabs.go.tz

www.ethinktanktz.org/eseecretariat/ArchiveDoc.htm

http://europa.eu.int/information_society/eeurope/egovconf/text_en.htm

www.excelgov.org/techcon/index.htm

www.hicss.hawaii.edu/diglib.htm

www.iicd.org/projects/articles/IICDprojects.import30

www.ilalamunicipal-tz.org

www.itgi.org

www.kinondonimunicipality.go.tz

www.man.ac.uk/idpm/idpm_dp.htm#ig

www.mediakomm.net

www.mediakomm-transfer.de

www.mediakomm-transfer.de/Content/GemeinsameDokumente/Dokumente/

Flyer_20english.property=dokument.pdf

www.mhhe.com/whitten

www.moct.go.tz

www.msthe.go.tz

www.netcaucus.org/books/egov2001

www.nrtee-trnee.ca

www.nrtee-trnee.ca/eng/programs/ArchivedPrograms/Sustainable_Cities/report_complete.htmwww1.oecd.org/puma/pubs

www.pacificcouncil.org

www.poralg.go.tz/index.php

www.psrctz.com

<http://readysset.tigris.org/nonav/templates/use-case-format.html#guidelines>

www.sosig.esrc.bristol.ac.uk/roads/subject-listing/World-cat/polcom.html

www.stuttgart.de/sde/menu/frame/top.php?seite=http%3A//www.stuttgart.de/sde/pers/gen/2269.htm

www.tanedu.org

www.tanzania.go.tz

www.tanzaniagateway.org

www.tgdlic.go.tz

www.tic.co.tz

www.tzonline.org

www.ucc.co.tz

www.udsm.ac.tz

www.uni-potsdam.de/db/elogo/ifgcc/index.php?option=com_content&task=view&id=19733&Itemid=140&lang=de_DE

www.wmsbundonline.de

www.worldbank.org/afr/de_ict/ghana_0903/dar_ICT_Edu.pdf