



E-Government for Tanzania: Current Projects and Challenges

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Abstract:

The paper is based on an in-depth literature review of government documents, presidential state of the nation addresses, global and nation reports on e-government, and reports on service delivery concerns in Tanzania. In promoting the use of E-Government, policies, flagship programs aimed poverty alleviation, ICT infrastructures and regulatory frameworks in effectively leveraged to enhance service delivery to its citizens that consolidate the position of ICTs in the country. Some of these flagship programs have been ongoing for longer, some have only partially succeeded and some have fully succeeded. Moreover, the paper shows that there are several recognitions that MDAs have made to benefit from the emergence of e-government in Tanzania. Furthermore, the paper reveals that service delivery remains a priority for the Tanzania government and a connect exists between the e-government vision and the poverty alleviation programs aimed at enhancing the standard of living of the people.

Keywords: e-Government, Current project, ICT project, Challenges and Tanzania

I. INTRODUCTION

Background of study

The growth of e-government concept has made many governments realize the significance of making their services more efficiently and regularly available (Gregor et al., 2013; Komba, 2013; Wimmer & Traunmuller, 2004). Various countries the world over, are now well aware of the significant benefits that e-government bring for expanding service delivery to citizens Mutula and Mostert, (2010). Tanzania is one of various developing countries where several E-government initiatives are being introduced to support poverty reduction and sustain good governance, demonstrated by latest technology implementations and government strategy documents Dé, (2006). The government of Tanzania recognizes the importance of information and communication technology and e-Government services that will able to increase the range and quality of services using the public sector (Komba, 2013; President's Office, 2012). In 2010 the Government of Tanzania has made a notable step of forming the e-Government Agency (e-GA) to coordinate, administer and promote e-Government initiatives and implementation of e-Government standards of the Public Organizations Ministry of WTC ICT Policy (2016). Further, in 2012 Tanzania underway the Analogue Switch off (ASO) implementation to migrate to digital broadcasting. The implementation of digital broadcasting makes the Tanzania achieved full migration earlier of June 2015 and becoming the first country in eastern and southern Africa to embark on the operation of the ITU goal Ministry of WTC ICT Policy (2016). In this regard, the government promoting the application of ICT and e-government in several development sectors such as health, education, government, infrastructure and agriculture in enhancing the productivity and effectiveness of sustainable countrywide development (URT, 2003). The government of Tanzania has also adopted an e-Government strategy (2009) with targets to improve efficiency in government and providing a superior service to citizens (President's Office, 2012; Sein and

Harindranath, 2004). This is due to the fact that e-government offers the chance to improve services to citizen and business and in areas with a low literacy rate (Schuppan, 2008; Liikanen, 2003). It provides access to information on various fields of activity, such as data on economic activities, medical data, or information on processes in public administration (Alshehri, Drew, Alfarraj, 2012; Yonazi, 2010; Schuppan, 2008). It improves government-to-government services (Alsaghier, Ford, Nguyen, and Hexel, 2009; Seifert, 2003; Sprecher, 2000). Further, e-government helps to improve the financial and taxation systems and reduce corruption by awarding more effective and transparent systems (Adeyemo, 2011; Yonazi, 2010; Bhatnagar, 2004; Avgerou, 2003). More importantly, e-government systems help to make public administration more democratic and responsible (Wamoto, 2015; Alshehri, Drew, Alfarraj, 2012; Schuppan, 2008) by permitting citizens to contribute in government processes, and offering better control mechanisms and enforce formalization to assist administrative work (Wamoto, 2015; Yonazi, 2010; Schuppan, 2008). Though, despite the above declared the benefits of e-government, the implementation of e-government initiatives in Sub-Saharan African countries in including Tanzania have in most cases been disappointments Nkohkwo and Islam (2013). The finding from the study done by Heeks (2003) show that, 35% of e-government projects in developing countries are entire failures, 50% are partial failures, whereas the remaining 15% are successes. (Dada, 2006; Kaaya, 2004) argue that there is a need for research to be done into the current status and challenges to the successful application of e-government projects in developing countries particularly Tanzania. Therefore, the focal point of this study is to find out the current projects and its challenges of the implemented e-government and/or ICT projects in Tanzania.

II. RESEARCH OBJECTIVE

The objective of the research was specifically focused on the following:

1. To assess the current e-government projects among the MDAs.
2. To examining the challenges to e-government project in MDAs in Tanzania; and
3. To contribute towards the improvement of the e-government projects in an effort to make an impact on service delivery to the citizens.

Methodology of the study

The study reviewed literature from several documents related to E-government projects in Tanzania. Including the Tanzania E-Government Strategy (July, 2013), United Nation e-government survey (2016) and The National ICT Policy in Tanzania (May, 2016). The study reviewed literature on E-government from other countries such as Uganda, Kenya, Rwanda, South Africa and Nigeria to recognize any best practices that are appropriate in Tanzania. From the documents reviewed, the study focused on identifying evidence to confirm that the Tanzania Government is committed to a unified, integrated, and comprehensive ICT program to empower Government services to be delivered more efficiently and effectively to every section of society. Further, the study viewed at sample projects that have already been commenced in selected Ministries with a focus on recognizing the challenges and current status of these flagship projects. Specifically, the main focus of the study was considering the e-government related projects based on the National e-government strategic plan.

ICT Projects

The development of ICT in Tanzania has positively contributed to bring social, economic and industrial development in the majority of citizens (NICTP 2016; Cole & Roman, 2003). For instance, the introducing of mobile money platforms in Tanzania has shaped innovative banking avenues for people who previously did not have access to banking services NICTP 2016. In presently, ICT has been embedded in all aspect of products and services consumed in our everyday lives (Cole & Roman, 2003). As a result, several stakeholders such as governments, international organizations, practitioners and civil societies, both appreciate and engage in advocating the application of ICT in the growth of the human race (Yusof and Lim, 2003). ICT has been used by developing countries including Tanzania for several years to systematize internal work and process data Heeks, (2001). ICT is critical in fighting poverty, uplifting the socioeconomic and living values of the people Mutula and Mostert, (2010). Further, the usage of ICT in government processes permits fast, transparent, accountable, efficient and effective communication with the community, peoples, business and other government agencies (IICD, 2008; Sawe, 2007; Basu 2004). The consequence, the progress investments in ICT infrastructure improvement and local content development has also been reported rising steadily (Mutula and Mostert, 2010; Yonah, 2005; Basu 2004). This has made the implementation of ICT projects, mainly large-scale projects that can have a major influence on service quality enhancements, increase a number of problems, many of which relate mostly to operating within government (President's Office, 2012; Basu 2004). Moreover, an appropriate use of ICT has great potential to empower citizen in overcoming development obstacles, address social problems and strengthen democratic institutions (Mutula and Mostert, 2010; Cole & Roman, 2003).

E-government in Tanzania

The introduction of e-government in Tanzania, more emphasis has positioned on in what way to support, transform outside effort, develop communication and transaction devices to address external stakeholders Heeks, (2001) by concentrating on applying ICT to all aspects of government business Grönlund, (2005). With the vision to offer superior services to the citizens and business communities and recognition of the significance of ICT in the public sector, the Government of Tanzania has therefore prepared the National e-Government Strategy 2013-2018 to deliver the essential guidance on exploiting the ICT opportunities and addressing challenges to add value in public sector services President's Office – Public Service Management (2013). In that regard, the key government strategy paper National Vision 2025 noted that "ICT opportunities can be harnessed to meet national development goals". Meanwhile the medium term National Strategy for Growth and Reduction of Poverty (MKUKUTA), the Tanzania's Mini Tiger Plan, and the Tanzania long Term Perspective Plan 2011/12-2025/26 are also emphasizing the essential to increase the application and usage of technology in accelerating productivity. Furthermore, in recognition of the need to reduce the possibility of Tanzania being further excluded from the global knowledge based society, as well as the need to harmonize independent ICT-related initiatives, the Government promulgated the National ICT Policy in the 2003 President's Office – Public Service Management (2013). Moreover, more efforts the government of Tanzania has taken in recognizing the importance of ICT resulting the revision of the NICTP 2003 in 2016. The National ICT Policy 2016 aim to transform Tanzania into an information rich knowledge-based society and economy, so that to ensure Tanzania and its people fully contribute in the information age and enjoy the social, cultural and economic benefits of the emerging information revolution (NICTP 2016). Further, ability to identifying potential achievements from e-government is one thing; actually realizing them another Kobb (2008). In realizing and identifying that the government Tanzania conduct a situational analysis for e-Government readiness by examine the government itself in relation to the following issues: Institutional e-Government services arrangements; human resources; budgetary resources; communication flows between ministries, departments, and agencies (MDAs); ICT infrastructure; ICT capacity levels; ICT related policies; and Public Private Partnerships (PPP) (Dewa and Zlotnikova, 2014; President's Office, 2012; Kobb 2008). Moreover, for the national development the Government of Tanzania has allowed the Ministries to be liable for developing e-government policy and facilitate its implementation in Government Institutions NICTP (2016). Several policies, statutes, and other initiatives have been undertaken toward this goal Rwanda and Baryayetunga (2006). As a result, the government has succeeded deployment of e-government-wide systems that permits the government to become more efficiently, effectively and reliably achievement of key business processes; these systems include the National Payment System (NPS) which comprises of the Tanzania Interbank Settlement System (TISS), Electronic Clearing House (ECH), Retail Payment System (RPS) (NICTP 2016; MWTC ICT Policy 2016; National e-Government Strategy 2013). Integrated Financial Management System (IFMS), Human Capital Management Information System (HCMIS), Land Management System (LMS), Health Information System (eHealth) and Geographical Information

System (GIS) (NICTP 2016; National e-Government Strategy 2013; President's Office 2013; MOHSW).

E – Government and ICT Projects in Selected Ministries

The study reviewing several Ministries documents published from Ministries official website and journal articles. The major

findings are based on documentary reviews. The table 1 below, illustrate the selected Ministry (MDA) concerned, current and planned ICT Programs (e-government project) and the purpose of the project.

Table.1. E-Government /ICT Projects from Selected Ministries

S/N	Government Unit	Current and Planned e-Government / ICT Projects	Purpose of the Project
1	President Office - Public Service Managements (PO – PSM)	Government Mailing System (GMS)	GMS is a system that provides a secure channel for Government communication and information sharing within the Government. Purpose: Secure and reliable Government communication channel and Formal system for sharing information within the Government.
2	Ministry of Water and Irrigation (MoWI)	Water Utilities Information System (MajIS)	Water Utilities Information System (MajIS) is one of the tools used by EWURA to monitor monthly performance of WSSAs, whereby data and information are entered at the respective UWSSA's headquarters and received by EWURA and the Ministry of Water on a monthly basis. Purpose: (i) improve accessibility of data and information for monitoring, planning and decision making as well as for dissemination of information to all stakeholders, (ii) support effective management audits with the objective of analyzing, evaluating, reviewing and appraising the performance of all commercially operated water utilities.
		Water Point Mapping System (WPMS)	WPM is a planning and monitoring tool used to locate water infrastructure and collecting related information using any available technology, the information that is collected can be used in decision making for different uses. Purpose: (i) to inform the planning of investments to improve water supply coverage; (ii) to allocate resources to deliver basic services were for the most needed; (iii) to determine lost investments; (v) to measure progress and performance against strategies, projects and expenditures; and (vi) to address the equity issues in terms of resource allocations for services.
3	Ministry of Health and Social Welfare (MoHSW)	Health Information System (eHealth)	eHealth is defined as the cost-effective and secure use of ICT in support of health and health-related fields, including healthcare services; health surveillance; health literature; and health education, knowledge, and research. Purpose: To transform the Tanzanian healthcare system by leveraging ICT to improve health and social welfare of all citizens. To adopt and effectively use ICT throughout the health sector.
4	Ministry for Finance and Planning (MoFP)	Integrated Financial Management System (IFMS)	An IFMS is a standardized monitoring and reporting system, which consolidates all the information needs of a government into one information database. Purpose: It facilitates consistent recording and reporting of information. To enable a government to take macro decisions that affect the country as a whole.
5	Ministry of Lands, Housing, and Human Settlements Development	Integrated Land Management System (ILMS)	ILMS to allow electronic updating, processing, storage and retrieval of land records and information, avoid double registration of land and ensure payment of all related taxes. Purpose: to address all functions of the land sector: deliver tools for handling all land administration functions (cadastral

	(MoLHHSD)		surveying, land delivery services, town planning, workflow management, etc.); Improve the security and reliability of land transactions through an efficient and reliable land information system; provide a technical framework to harmonize and share land data; and track efficiency and transparency in delivering land administration services; creation of a reliable land administration services for the customers and improving public confidence in the land administration services.
6	Ministry for Works, Transport, and Communication (MoWTC)	Human Capital Management Information System (HCMIS)	HCMIS is a computerized skills inventory for acquiring; storing, analyzing, and controlling the flow of HR related information throughout an organization. Purpose: helps in the collection of information on aspects of work life as diverse as salary, payroll, compensation, leaves, accidents, superannuation-deduction for pension and other employee benefits.

Finding and Discussion of the study

The finding of the study points out the e-Government of Tanzania. The fundamental considerations include the current e-Government/ICT project among the Ministries and possible challenges that necessity be mitigated and/or faced by the MDA on utilization of projects in order to attain the aims.

The Current E-Government/ICT Project in Tanzania

In general, the government of Tanzania like any other government in Sub-Saharan African countries has recognized the importance of e-government implementation in providing a government, private sector, collective or individual citizen level (Basu 2004; Mutula and Mostert, 2010; Komba, 2016). Along with that line many MDA becomes liable for developing e-government policy and facilitate its implementation in Government Institutions. This result the development and implementation of many e-Government and/or ICT projects between the MDA (President's Office – Public Service Management 2013; NICTP 2016). The study revealed that several e-Government and/or ICT projects have been deployed in Tanzania. However, some of the projects are already in operation while others are still being implemented. The following summaries highlight the key findings on current projects among the MDA selected for the study based on documentary reviews.

Government Mailing System (GMS)

The **GMS** project deployed under the President's Office – Public Service Management. It has already been implemented since 2015 and currently in operation and its produce the intended results. The President's Office has deployed this project for official communications in order to avoid the use of disposable mail e.g. Gmail, Yahoo, etc. used for official communications internal and external of the office. The use of the official GMS has improved timely internal and external communication and information sharing as a result the reduction of operating expenses for the printings of documents (MoWI ICT Policy 2016; Mwakyusa2015; President's Office – Public Service Management 2013; eGov. Strategy 2013).

Water Utilities Information System (Majis)

This system deployed under Ministry of Water and Irrigation (MoWI). The system has highlighted at the Ministry of Water and Irrigation ICT Policy (2016). The **Majis** system has

effectively implemented in 2011 and currently running. The Ministry of Water usesMajIS to collect information and used to monitor monthly performance (eGov. Strategy 2013; MoWI 2016).

Water Point Mapping System (WPMS)

The **WPMS** system has effectively been implemented in 2011 and is presently effectively used by the Ministry of Water and Irrigation (MoWI). The **WPMS** used by the Ministry to locate water infrastructure and collecting related information using any available technology and decision making. However, fewer available functionalities have proven (eGov. Strategy 2013; MoWI 2016).

Electronic Health System (eHealth)

The Government through the Ministry of Health and Social Welfare (MoHSW) in promoting the usage of e-government services has developed the eHealth strategic plan for the aim of transforming healthcare delivery by permitting information access and supporting healthcare processes, management, and decision making. The Ministry has started implementation of **eHealth** project since 2013 and currently it is on progress. The project is organized into three phases and is scheduled for completion at the end of 2018 (MoHSW 2013).

Integrated Financial Management System (IFMS)

The **IFMS** system project deployed under the Ministry of Finance and Planning (MoFP). The project started implemented in 2012 and presence is effectively used and producing the intended results. It has automated and streamlined Ministries accounting processes, financial processes and controls to support complex governmental necessities and create value through a centralized timely, accurate and consistent financial reporting to provide overall financial visibility to management (Mwakyusa2015; eGov. Strategy 2013; MoFP ICT SG 2012).

Integrated Land Management Information System (ILMIS)

The **ILMIS** project developed under the Ministry of Lands, Housing, and Human Settlements Development (MoLHHSD). The project has started implementation of project since July 2016 to strengthen the business environment in Tanzania, including land administration reform and improve access to financial services and is scheduled for completion July 2018 (eGov. Strategy 2013; MoLHHSD 2016).

Human Capital Management Information System (HCMIS)

The HCMIS system started implemented and presence is effectively used by MDA and it deployed under the Ministry for Works, Transport, and Communication (MoWTC). However, fewer available functionalities have proven to be effective by delivering value to the organization such as appropriate and consistent employee records, provision of customized HR reports, payroll processes etc. (Mwakyusa2015; eGov. Strategy 2013; MoWTC ICT Policy 2016).

Challenges of e-Government/ICT Projects in Tanzania

In general, the study reveals that, the development and integration of ICT within the Government is uneven, with the lack of adequate resources to dedicate to ICT programs, disintegration of ICT applications, duplication of ICT infrastructure, and unstandardized ICT equipment, devices, and other online systems (Heeks, 1998; 2001; Grönlund, 2005; Rwangoga and Baryayetunga 2006). Therefore, programs that enlist international donor organizations have been the primary catalyst for ICT diffusion into the Government sector. Some ministries, i.e. Finance and Planning, Water and Irrigation, Health and Social Welfare, Lands, Housing, and Human Settlements Development, Works, Transport, and Communication have deployed of e-government-wide systems, internal LANs and external networking to other Ministries to permitting the government to become more efficiently, effectively and reliably (Rwangoga and Baryayetunga 2006; National e-Government Strategy 2013; NICTP 2016). Several other Ministries are still working to improve internal networking, information exchange, and planning for other systems. Efforts are actually inadequate to date in reviewing business processes and rearrangement of staffs to indorse efficient application of e-Government processes and applications (Rwangoga and Baryayetunga 2006; National e-Government Strategy 2013; NICTP 2016). Moreover, the study revealed that there was no significant improved rate of citizens' interaction with the government as a result of electronic communication application (Mwakyusa (2015)). A key challenge is the lack of awareness of the opportunities, innovative design and implementation and potential impact of introducing an E-government systems in the public sector (Heeks, 2001; Ngulube, 2007; Øystein Sæbø 2012). Many MDAs have their own website, but the information existing online is rarely updated. The websites are mostly used for one-way information dissemination from MDAs to the citizens to notify the public. It is common to post announcements for interested people to get hold of and react accordingly. Most announcements are made on tenders, employment opportunities, examination results, new tariffs, conferences, seminars and are done online to address a larger (online) audience than those who are physically visiting the office (Øystein Sæbø 2012; National e-Government Strategy 2013; NICTP 2016). Yet, the persistence connectivity of the internet is challenging among the MDAs. Internet connectivity needs a good network infrastructure, affordable internet access, and bandwidth to sustain a connection every hour of every day (Heeks, 1998; 2001; Grönlund, 2005; Machira, 2009; Karokola & Yngstrom, 2009; Yonazi, 2010). This results a number of challenges, including the need for a gateway to access and control online information (Yonazi, (2010)). As a result, it turns out to be the source of online threats, risks, and insecure systems, leaving institutions wide open (Yonazi, (2010)). Based

on the baseline study on e-Government, it has been shown that there is low level of application of ICT services in the public sector in Tanzania MoWTC ICT Policy (2016). This show to study conducted by (Lupilya and Jung 2015; UN e-Government Survey, 2014) that highlighted a drop from 35% to 29% from 2012 to 2014 in the case of Tanzania. The trend is attributed to the lack of systematic integration of web platforms, offering potential services to a wider range of consumers. For example, Tanzania is below average, at about 8%, in terms of telecommunications infrastructure with no progress in infrastructure development. Likewise, e-participation was also below average at 8% in 2012 but shot incredibly to 39% in 2014. Both of these indicators have indicated a relatively low level of progress in e-government implementation in Tanzania (Yonazi, 2010; Lupilya and Jung 2015). Specifically, the review reveals several key issues that must be considered as part of an effective ICT project and/or e-Government project development:

- ICT investment remains an “ad hoc” affair, with each individual Ministry seeking ICT funding primarily from defined donor project resources to offset the minimal funding available through the governmental budgetary channels.
- Underutilized of a majority of the implemented systems owing to a series of factors, including a lack of operator training, lack of connectivity, and absence of automated processes.
- No series of commonly accepted standards is in place, or even informally agreed upon, for equipment, applications, or connectivity, for the current initiatives.
- A lack of synchronized ICT investment strategy and tracking of ICT investments and performance monitoring within the Government.

III. CONCLUSION AND RECOMMENDATIONS

Conclusion

This study has been originated to upsurge our knowledge of the current e-Government projects initiated in ministries, agencies and departments (MDAs) in Tanzania. Moreover, the study intended to examine the perceived challenges for further development and use of E-government systems and based on the findings, to contribute towards the improvement of the e-government projects in strengthening and provide an impact on service delivery to the citizens in Tanzania. In general, the review revealed that the development and integration of ICT within the Government is uneven, with the lack of satisfactory resources to dedicate to ICT projects.

Therefore, projects that enlist international donor organizations have been the primary catalyst for ICT penetration into the Government sector. In 2010 the Government of Tanzania has made a notable step of forming the e-Government Agency (e-GA) to coordinate, administer and promote e-Government initiatives and implementation of e-Government standards for Public Organizations. Moreover, the development of Tanzania E-Government Strategic Framework July 2013 that proposes a fully-fledged Ministry of ICT to be established by the Government to provide both political and technical leadership in the overall coordination and harmonization of policy development. The implementation for Business Licensing

System implemented by June 2015, Land Information System upgraded by December 2015, e-Procurement System implemented by December 2015, National Vital Records Registration System implemented by December 2015, Telemedicine Systems for Muhimbili Hospital implemented by December 2015 and Information and Broadcasting services. Furthermore, in recognition of the need to reduce the possibility of Tanzania being further excluded from the global knowledge based society, as well as the need to harmonize independent ICT-related initiatives, the Government promulgated the National ICT Policy in 2016 aim to transform Tanzania into an information rich knowledge-based society and economy, so that to ensure Tanzania and its people fully contribute in the information age and enjoy the social, cultural and economic benefits of the emerging information revolution. Through the recent authorization and activation of the ICT, MDAs provide unified coordination and harmonization of these initiatives within one political and technical leadership will probably avoid the present duplication existing in both the Central and Local Government projects. The structure present in place, given the essential authority and mandate to fully capable of coordinating all of the appropriate governmental units under an integrated organizational structure.

IV. RECOMMENDATIONS

Bearing in mind that this research is based on reviewing of several documents on related to E-government projects in Tanzania. Including the Tanzania E-Government Strategy (July, 2013), United Nation e-government survey (2016) and The National ICT Policy in Tanzania (May, 2016), the Ministries ICT policies and other articles from other countries. Therefore, there could be a possibility that some papers that might have been equally useful information have been missed.

This does not, however devalue the findings of this paper as it not only covers a wide time frame, the results also provide a depiction of what the situation actually is in Tanzania in general. However, there remains much room for more in depth analysis on the utilization of the projects within the MDAs. From the identified current projects and challenges from selected MDAs, project planners within Ministries need to determine the course of action to address the challenges identified that can stimulate the speed in overcoming the changes. The researcher of this study recommends the following:

- The ICT projects must build on the common agreement throughout the Government, and the political will, established through the expressed promise of the President, to enable the Government of Tanzania through comprehensive application of ICT technologies.
- The lessons learned from initiatives sponsored by International Donor Organizations should serve as prototypes in building comprehensive implementation strategies.

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