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Mzyece, Mjumo

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SIX: A CRITICAL ANALYSIS OF e-GOVERNMENT IN ZAMBIA

Mjumo Mzyece,
French South African Institute of Technology (F'SATI), Tshwane University of Technology, South Africa

ABSTRACT
This article presents a critical analysis of e-government in Zambia. It reviews the relevant literature and then explains the structure and operation of the Zambian government in the context of e-government. It presents and analyses the results of a small sample study on e-government in Zambia and points to six areas for policy reform, highlighting leadership, stakeholder engagement, prioritisation, increased funding, private sector participation and mobile channels as key elements needed for future success.

KEYWORDS:
e-government policy, reform, Zambia

INTRODUCING E-GOVERNMENT IN ZAMBIA

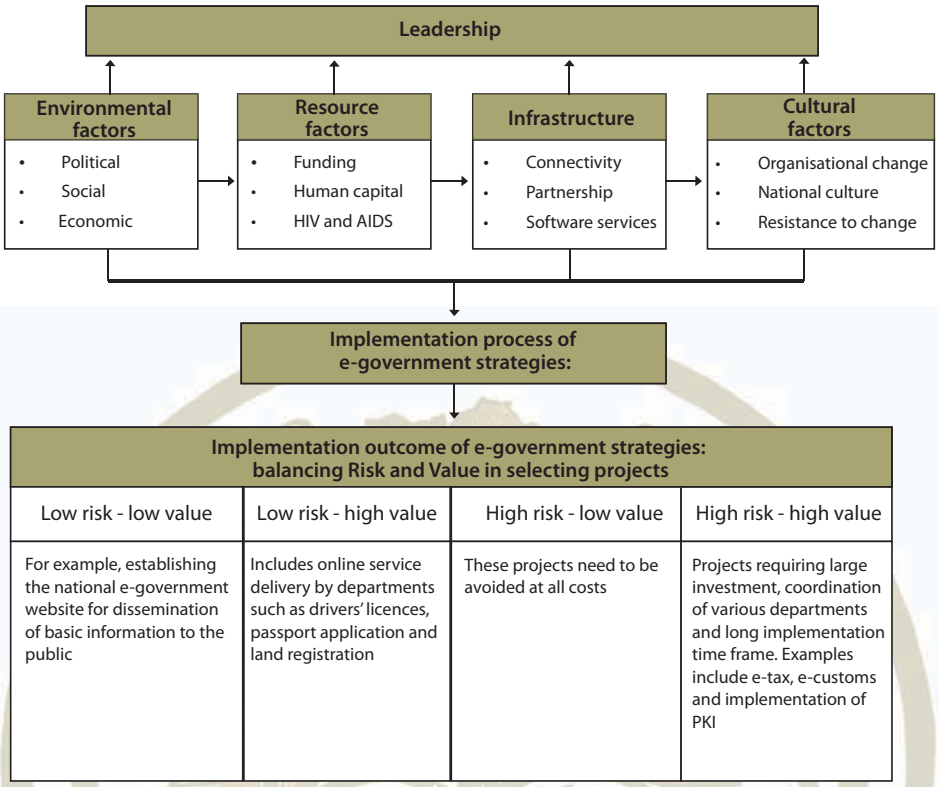
Zambia's National Information and Communication Technology Policy 2006, defines e-government as:

> *The delivery by Government of products, services, policies and the engagement of stakeholders in civic and government matters through the use of Information and Communication Technologies in order to achieve Government to Consumers, Government to Business and Government to Government interaction and transactions (Government of Zambia, 2006b, p. vii).*

In this policy, ICTs are presented as the means of e-government, while electronic interactions and transactions are regarded as primary in delivering public services and in promoting e-government. Good governance has been identified as a cross-cutting issue in the fifth and sixth national development plans (Government of Zambia, 2011; Government of Zambia, 2006a). e-Governance has been identified as a powerful enabler of good governance and e-governance programmes are explicitly defined and budgeted for in the two national development plans. e-Government is regarded as a national priority and therefore deserves attention from scholars and policymakers interested in the development of Zambia. However, the reality of e-government progress has fallen far short of its potential and its stated importance in policy documents.

There is a limited body of literature on the state of e-government in Zambia. Weerakkody, Dwivedi, Brooks, Williams & Mwange (2007) studied the extent of implementation of e-government in Zambia. Their survey explored the perceptions of government officials with respect to e-government implementation challenges in eight categories (Weerakkody et al, 2007): technological infrastructure; partnership and collaboration; strategy; institutional and environmental issues; human capital development; change management; leadership roles; and legal frameworks. Based on their analysis, they propose a framework for e-government implementation that emphasises the relationship between risk and value (Figure 1).

FIGURE 1: PERSPECTIVE ON A FRAMEWORK FOR E-GOVERNMENT IN ZAMBIA



Source: Weerakkody et al., 2007

In other writing, Bwalya (2009) analyses positive and negative factors favouring or hindering the adoption of e-government in Zambia and proposes an e-government adoption model based on Davis' (1989) Technology Acceptance Model (TAM). Positive factors include: up-to-date information; convenience and ease of use; strong local support and participation (since e-government projects tend to be initiated and funded by foreign donors); decentralised platforms; and "anytime, anywhere" availability. Negative factors include: lack of sustainability, particularly when donor-funded projects come to an end; poor ICT infrastructure; exorbitant Internet connectivity costs; restricted access (eg systems accessible to Internet users only); poor ICT infrastructure; unwillingness of staff to adopt new systems; and lack of content in indigenous languages.

Coates and Nikolaus (2010) assess the state of e-government in Zambia and find it to be generally weak. They focus their attention on the availability and functionality of e-government websites in Zambia and Texas. The authors propose a public private partnership (PPP) model for Zambian e-government, along the lines of the TexasOnline portal in the US state of Texas. TexasOnline is operated by a private company, BearingPoint, under the oversight of the Texas Department of Information Resources.

This article makes an important contribution to studies of e-government in Zambia by providing multiple perspectives gained from government; the private and NGO sectors; ICT specialists and non-specialists; network operators and network solution providers; and application developers and application users, including end-users and those providing them with technical support. The article critically analyses e-government in Zambia, so as to shed light on why it has not fulfilled expectations. The analysis leads to the presentation of ideas to improve the state of e-government.

ZAMBIA'S E-GOVERNMENT POLICY EVOLUTION

The key policy documents relating to e-government are the National Information and Communication Technology Policy 2006, the Fifth National Development Plan 2006-2010 and the Sixth National Development Plan 2011-2015.

The National Information and Communication Technology Policy (Government of Zambia, 2006b) includes the policy goal of "promoting electronic government"', identifies a number of existing e-government initiatives and targets them for further advancement. Comments on initiatives such as the Integrated Financial Management Information System (IFMIS) are stated in the policy document, noting lack of coordination and integration, ICT infrastructure and a supportive institutional framework; a shortage of ICT specialists in the public sector and concerns about information and network security – all issues requiring attention. A candid account of the IFMIS initiative (Mwango, 2004) argues that although IFMIS scored notable successes, it was hampered by inefficient procurement procedures and extremely high and unsustainable funding requirements.

On e-government as a means to improving public sector management and delivery of services, a number of generic commitments, objectives and proposed strategies are outlined, including the commitment to "develop an E-Government model to facilitate effective and efficient delivery of goods and services in the public sector"; the objective to "transform Government service delivery and improve two-way communication in the management and operation of the public sector"; and the proposal to "develop and implement a comprehensive E-Government strategy targeting: Government to Government (G2G), Government to Business (G2B), Government to Citizens (G2C) and Government to Employee (G2E) services". However, no specific timelines, budgets or implementation responsibilities are provided for and implementation plans, resource mobilisation and monitoring and evaluation are referred to only in broad, generic terms. The policy states that "all [government] sectors shall draw their ICT policies and implementation plans from this policy […] and will be consolidated into The National ICT Implementation Plan, with sub-plans for implementation on a priority basis covering the short, medium and long term …". To the author's knowledge, this nationwide ICT implementation plan has not yet been formulated. There would appear to be significant limitations with respect to the concreteness, coherence and coordination of e-government.

The Fifth National Development Plan, 2006-2010 (Government of Zambia, 2006a) or Fifth Plan, which is contemporaneous with the national ICT policy, does allocate funds for e-government: ZMK4 billion (approximately USD1 million as at December 2006), or about 0.01% of the entire

Fifth Plan core programmes budget. However, this Plan also fails to outline concrete plans, though it does refer to an e-government programme and its associated objective and strategies. Specifically, e-government is included in the "E-Government and ICT Application" programme for the communication and meteorology sector. The programme's objective is "to establish and maintain an integrated and effective information and communications technology system for effective decision-making and dissemination of information". Nine strategies are defined: (a) undertaking a feasibility study to determine information, software and hardware needs for all sectors of the economy; (b) installing a Wide Area Network at central and local government levels; (c) installing an electronic collaboration and communication system for the government; (d) developing ICT skills in government; (e) conducting an e-government readiness assessment; (f) developing sector/Ministry ICT policies; (g) developing websites and Intranet for government ministries and agencies; (h) improving and upgrading communications infrastructure; and (i) improving connectivity.

The Sixth National Development Plan, 2011-2015 (Government of Zambia, 2011), hereafter referred to as the Sixth Plan, appears to address some of the shortcomings of these earlier policy documents. Funding for e-government under the Sixth Plan is increased to ZMK96.6 billion (approximately USD21 million as at January 2011), or about 0.2% of the entire Sixth Plan budget. Additionally, the objective of e-government in the Sixth Plan is defined as: "to establish an integrated e-governance platform", a definite improvement over the e-government objectives defined in the earlier policy documents in terms of brevity, simplicity, clarity and specificity. Furthermore, the Sixth Plan defines three specific e-governance strategies: (a) develop guidelines on e-governance and implementation process; (b) develop the integration of government management information systems; and (c) promote the creation of multi-purpose community centres (banks, post offices, tele-centres, parks and kiosks).

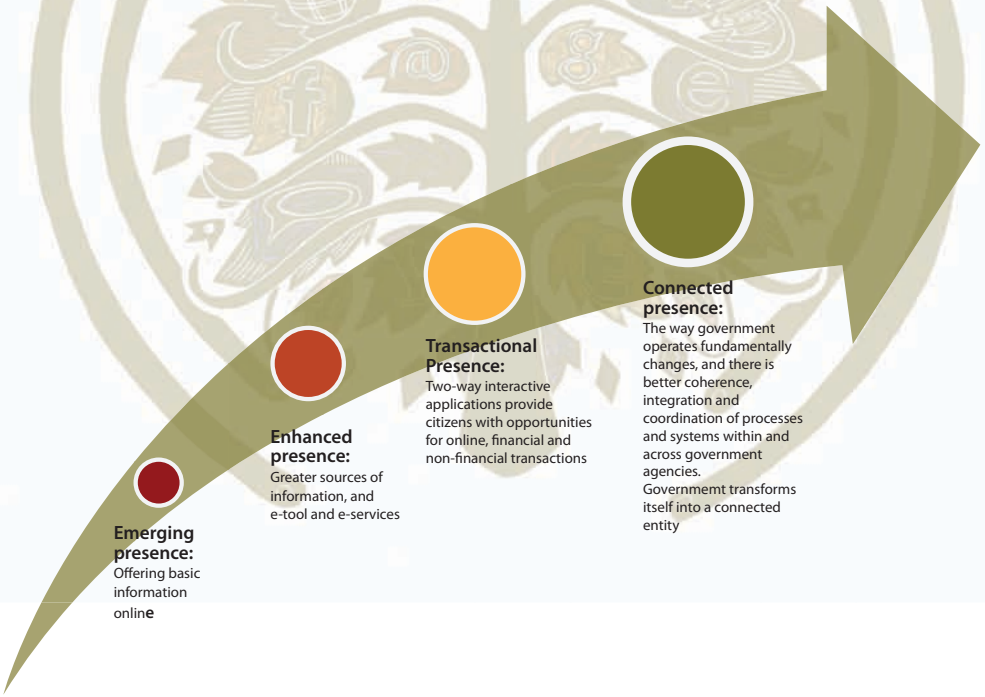
The first two strategies are linked to corresponding projects, deadlines, final outcomes and responsible institutions, although some of the specific details appear to be poorly thought out. For example, the target delivery date for the guidelines on e-governance and implementation process is 2015 (at the end of the five-year plan). Five years seems too long a period just to develop a set of guidelines. Furthermore, the Sixth Plan calls for the integration of government management information systems in the very first year, 2011. One year seems too short a period to implement such an exercise across multiple ministries and nationwide. Inexplicably, no projects are defined for the third strategy on community access.

The Sixth Plan defines key performance indicators (KPIs) in terms of the roll-out of online government services in five government institutions. However, there is no overall responsibility for the e-governance programme and a lack of an integrated view of e-governance in terms of objectives, strategies, projects, deadlines and final outcomes. So while the Sixth National Development Plan does represent progress compared with earlier policies, this is limited and qualified progress.

e-Government as set out in the national policy documents discussed above can be considered in the context of the following guiding documents issued by the regional, continental and global multilateral bodies of which Zambia is a member: the SADC Regional Indicative Strategic Development Plan (SADC, 2004), the NEPAD Framework Document (NEPAD, 2001) and the UN E-Government Survey (UN, 2010), respectively. These three documents recognise and prioritise the vital role of e-government and -governance and provide guidance for future national level policy.

The SADC Development Plan specifically identifies e-government as a priority intervention area: "[ICT] Applications to support e-government – The application of ICT in the public sector must go through a process of re-engineering to ensure that existing inefficiencies are eliminated and the citizens' interests are the focal point". The NEPAD Framework Document recognises that the "intensive use of ICTs can bring unprecedented comparative advantages to the [African] continent [… by giving] impetus to the democratisation process and good governance", and prioritises the application of ICT applications, skills and infrastructure to promote good governance. The UN E-Government Survey provides useful benchmarks for e-government in Zambia, which is currently ranked 143rd out of 192 member states in the UN e-government development index (UN, 2010). In discussing the 2010 UN E-Government Survey, Gupta (2011) proposes a four-stage "presence' model for e-government evolution" (Figure 2).

FIGURE 2: STAGES OF E-GOVERNMENT EVOLUTION



Source: Gupta, 2011

A major weakness of policy in Zambia is the limited consideration to increasing the presence of government in providing online information and e-services, in particular the lack of initiatives aimed at provincial and local government level, with limited opportunity to progress towards e-governance.

LEGAL FRAMEWORK FOR E-GOVERNMENT

The Constitution of the Republic of Zambia (Government of Zambia, 1996; Government of Zambia, 2009a) provides the overarching legal framework for e-government. Laws relating to e-government are subject to the Constitution. Since e-government involves the delivery of government services using ICT, all the laws and regulations directly or indirectly related to the ICT sector are also relevant to e-government. The specific legal framework for e-government can be divided into three broad categories: ICT-related, broadcasting-related, and competition and consumer protection-related laws.

CATEGORY A: ICT-RELATED LEGAL FRAMEWORK

THE INFORMATION AND COMMUNICATION TECHNOLOGIES ACT (2009) (GOVERNMENT OF ZAMBIA, 2009B)

The ICT Act establishes the Zambia Information and Communications Technology Authority (ZICTA) and defines the authority's role in economic and technical regulation: definition of retail and wholesale electronic communications markets subject to regulatory control; determination of dominant market players; regulation of interconnection, access and co-location agreements; regulation of tariffs; radio spectrum management; administration of electronic numbers, names and addresses; technical standards and type approvals for electronic communications equipment (Government of Zambia, 2009b). It stipulates licencing requirements for electronic communications and radio communications. It provides the foundation for the growth of the electronic communications infrastructure sector, which is necessary for e-government.

THE ELECTRONIC COMMUNICATIONS AND TRANSACTIONS ACT (2009) (GOVERNMENT OF ZAMBIA, 2009C)

The ECT Act defines the rules and regulations on electronic communications and transactions. It facilitates e-government interactions and transactions by enabling electronic signatures, secure communications, electronic payments and protection of personal information.

CATEGORY B: BROADCASTING-RELATED LEGAL FRAMEWORK

THE INDEPENDENT BROADCASTING AUTHORITY ACT (2002) (GOVERNMENT OF ZAMBIA, 2002A)

The IBA Act establishes the Independent Broadcasting Authority (IBA) as an independent regulator of the broadcasting sector. Although this Act was passed and assented to almost 10 years ago, the IBA has still not been established. Broadcasting is still regulated directly by the

Ministry of Information, Broadcasting and Tourism. Once the IBA is finally set-up, it is expected to regulate conventional television and radio broadcasting. However, the IBA Act is outdated in terms of advances in technology and service convergence, such as Internet broadcasting. Broadcasting plays an important role in e-government, eg for dissemination of important government alerts.

THE ZAMBIA NATIONAL BROADCASTING CORPORATION ACT (ACT NO. 16 OF 1987, ACT NO. 13 OF 1994, ACT NO. 20 OF 2002) (GOVERNMENT OF ZAMBIA, 2002B)

This set of Acts establishes the Zambia National Broadcasting Corporation (ZNBC), a wholly state-owned radio and TV broadcaster. ZNBC would almost certainly be part of a fully developed e-government. One reason for this is that it has the widest reach of any telecommunications network in Zambia.

CATEGORY C: COMPETITION AND CONSUMER PROTECTION-RELATED LEGAL FRAMEWORK

THE COMPETITION AND CONSUMER PROTECTION ACT (2010) (GOVERNMENT OF ZAMBIA 2010)

This Act continues the Zambia Competition Commission (ZCC) and renames it the Competition and Consumer Protection Commission (CCPC). The mandate of the CCPC is to safeguard and promote competition and to protect consumers from unfair trade practices. The scope of the CCPC covers all commercial sectors, including ICT. Since the ICT sector is inextricably linked to e-government, the Competition and Consumer Protection Act is also relevant to e-government.

ICT SECTOR STRUCTURE AND STATISTICS

The ICT sector includes a mix of privately, part-private/part-state-owned and wholly state-owned companies. The sector has four sub-sectors: broadcasting, fixed telephony, mobile telephony and Internet. The broadcasting sector is dominated by the state-owned ZNBC in both the radio and television segments. ZNBC's biggest rivals in the television segment are MUVI TV (private, terrestrial TV), TBN Zambia (private, terrestrial TV) and Multichoice (private, satellite TV). In the radio segment, however, Zambia has numerous privately owned independent radio stations.

Fixed telephony penetration has been on a downward trend over the past decade; it dropped from 0.8 fixed lines per 100 inhabitants in 2001 to 0.7 fixed lines per 100 inhabitants in 2009 (ZICTA, 2011), declining against population growth.

Zambia was one of the first African countries to be connected to the Internet in 1994 (CTO, 2009). However, growth has been extremely slow due to the high cost of equipment and Internet connectivity. Table 1 shows the statistics in Internet growth for the last decade, with a notable shift to broadband between 2008 and 2009.

TABLE 1: INTERNET SUBSCRIBER STATISTICS FOR ZAMBIA: 2001-2009

Year	Country population	Internet subscribers	Per 100 inhabitants	Type of Internet connectivity		Growth rate (%)
				dial -up	broadband	
2001	10 089 492	8 248	0.082	7 627	621	
2002	10 409 440	11 647	0.112	10 826	821	41
2003	10 774 382	12 000	0.111	10 857	1 143	3
2004	11 089 691	16 288	0.147	15 334	954	36
2005	11 441 469	10 882	0.095	10 179	703	-33
2006	11 574 190	11 996	0.104	10 067	1 929	10
2007	11 708 450	17 946	0.153	12 578	5 368	49.6
2008	11 900 000	18 078	0.152	12 484	5 671	0.73
2009	12 903 039	17 754	0.137	6 684	10 702	-2.9

Source: ZICTA, 2011

Table 2 shows the growth in mobile subscribers over the last decade, noting that mobile Internet access was introduced in 2007.

TABLE 2: MOBILE SUBSCRIBER STATISTICS FOR ZAMBIA: 2000-2009

Year	Country population	Mobile subscribers	Per 100 inhabitants	Mobile Internet	Growth rate (%)
2000	9 885 591	49 957	0.505	-	32.47
2001	10 089 492	97 900	0.97	-	95.97
2002	10 409 440	139 258	1.338	-	42.25
2003	10 774 382	204 150	1.895	-	46.6
2004	11 089 691	413 120	3.725	-	102.36
2005	11 441 469	949 558	8.299	-	129.85
2006	11 574 190	1 663 051	14.369	-	75.14
2007	11 708 450	2 639 026	22.539	215 472	58.68
2008	11 900 000	3 207 679	26.955	791 464	21.54
2009	12 903 039	4 165 101	32.28	No data	17.67

Source: ZICTA, 2011

By 2009, mobile operators had connected over four million subscribers, or about 32% of the population. Although conventional Internet penetration is still extremely low at 0.14% in 2009, mobile Internet penetration has shown strong growth from introduction in 2007 to 6.65% at the end of 2008. Although up-to-date statistics are not currently available, the mobile Internet market may continue its impressive growth. The growing base of mobile connected citizens presents a significant opportunity for the provision of mobile-based e-government in Zambia.

This completes the review of the policy, legal and ICT sector context of e-government in Zambia. We now turn to a brief overview of the governmental system followed by a review of e-government

STRUCTURE AND OPERATION OF GOVERNMENT

Zambia is a landlocked country located in south-central Africa, with a population of approximately 13 million people (CSO, 2011). It is a constitutional republic based on a multi-party democratic political system (Zambia, 1996; Zambia, 2009). Zambia has three tiers of government: national, provincial and local. The country observes a separation of powers at the national level among the Executive which exercises policymaking and executive power, the Parliament, which exercises lawmaking and oversight power; and the judiciary, which exercises judicial power. The 2011 Zambian cabinet, under newly elected President Sata, incorporates 17 ministries, including the ministries of Information, Broadcasting and Tourism, and Transport, Works, Supply and Communications. The civil service in each ministry is headed by a Permanent Secretary, a position which was originally designed to be professional and non-partisan (Larmer, 2010). After independence in 1964, these positions evolved into political appointments. However, the Sata administration appears intent on reversing this trend and depoliticising and re-professionalising the civil service. Provincial government in the 10 provinces of Zambia is headed by a provincial minister, who is not a member of cabinet. Local government operates at city, town or municipal level.

Key development challenges relate to providing jobs, education, healthcare and infrastructure to citizens. In theory, government is designed to operate in a decentralised manner, with delivery of services close to local populations. However, in practice service delivery tends to be centralised to national government. Not surprisingly, this creates many service delivery bottlenecks. Communication and coordination between local authorities and the two upper tiers of government can be fraught with inefficiency and political rivalry. The implementation of e-government has tremendous potential to circumvent such inefficiencies and rivalries when focused on citizens.

REVIEW OF E-GOVERNMENT EMERGENCE

RESEARCH DESIGN

In order to review e-government emergence over the decade 2000-2011, a selection of key respondents from a cross-section of organisations were interviewed. These organisations include ICT network operators, ICT solution providers, government ministries and non-governmental organisations (NGOs). The structured questionnaire asked respondents to comment on success and failure factors, positive and negative examples and recommendations for improved e-government. Despite a small sample size, the responses are valuable in that they draw on knowledgeable individuals, each with more than a decade of first-hand experience of the ICT sector, government and e-government.

KEY FINDINGS

The respondents highlighted some notable progress, but the perspective gained was that e-government is rudimentary in key services sectors, such as the health services. Table 3 sets out an overview of programmes, improvements and challenges at as 2011.

TABLE 3: E-GOVERNMENT PROGRAMMES IN PROGRESS

Department	e-Government programme	Improvements in services or administration	Challenges in services or administration
Government departments (with a few exceptions)	Email and Internet	Online presence facilitates communication between government and external parties. Greater citizen access to information as reports, government speeches and electoral results are published online.	Many ministry websites not regularly updated. Lack of content management system.
Provincial Headquarters and the relevant ministry (for most ministries)	Virtual Private Network (VPN) connectivity	Improved communication between provincial offices and the ministries. Real-time sharing of information.	Poor ICT infrastructure. Budgetary constraints, especially in the face of competing priorities such as roads, schools, hospitals, etc.
Ministry of Finance and National Planning	Integrated Financial Management Information System (IFMIS)	Auditor-General's report shows improved fiscal accountability across government, partly attributable to IFMIS.	Resistance to change from the "old guard".
Ministry of Health	Electronic health records system: SmartCare HIV-monitoring system Pilot projects: SMS-based system for Polymerase Chain Reaction (PCR) lab results, Tele-medicine system HR/payroll systems in several government hospitals	Improved records management. Improved HIV-monitoring. Improved distribution of scarce medical skills. Improved administration of salaries and other HR needs for healthcare workers	Lack of leadership buy-in. Lack of knowledge of potential benefits of ICTs. Fear of replacement by machines.
Ministry of Labour and Social Security	Employment website	Improved transparency and accountability.	Poor access in rural areas.
Ministry of Lands, Energy and Water Development	Lands Management System	Reduced corruption.	Poor accessibility of information to general public.
Ministry of Information, Broadcasting and Tourism	Zambia Tourism Board (ZTB) website	Good information availability and website management.	Lack of information on latest technology platforms such as smartphones and tablets.
Patents and Companies Registration Office (PACRO)	PACRO website	Time taken to register a company is reduced.	No online system to search for company details.
Road Transport and Safety Agency (RTSA)	RTSA Database System	Capacity to keep track of all motor vehicles in Zambia due to effective licensing and registration is said to have contributed to dramatic reduction in car theft.	Long-term sustainability and maintenance.
Zambia Revenue Authority (ZRA)	ZRA Database System	Now easier and faster to get a Tax Personal Identification Number (TPIN), hence easier to track tax contributions from many sources for the same person or company. VAT registration is simpler. Clearing of goods at border points has improved.	Extension of system to cover all ZRA processes and procedures. Improved public accessibility by providing mobile access.

In terms of e-government emergence in the decade 2000-2010, the general picture that emerges from the interview responses is that progress was very slow in the first five years, but improved gradually in the last five years. The respondents' views on the current-status of e-government in Zambia varied from "essentially non-existent", "grossly underdeveloped",

"just beginning for a lot of ministries" to "has really picked up in the last five years or so". This suggests that the overall situation is mixed at best (the optimistic view) or extremely patchy at worst (perhaps the more realistic view).

Particular success factors or drivers for e-government were consistently highlighted by the respondents, including: the need to provide improved transparency and accountability; cost savings and improved efficiencies; increased ICT spending by government; reduced cost of ICT equipment and services; new ICT technologies; the injection of fresh personnel who are ICT-savvy and open to new ways of doing things; and donor funding. A government respondent emphasised citizen engagement as a success factor, specifically, implementing effective public awareness campaigns and stakeholder collaboration processes in order to, for example, enforce citizens' rights to access information and participation in decision-making, pointing to the need to transition to e-governance.

While several successful initiatives were identified by the respondents (see Table 3), examples of failure were cited as: government websites that are online but seldom updated; well-written policies that have not been implemented; and projects that are initiated and launched but not adopted or sustained by their intended users. Overall, e-government in Zambia is beset by numerous weaknesses. The interviews revealed a number of common failure factors or inhibitors, including: lack of stakeholder engagement and involvement; lack of implementation of policies; resistance to change by the "old guard"; corruption leading to the deployment of low quality and ultimately useless ICT solutions; lack of appropriate skills and skilled personnel; lack of foresight and coordination; lack of supporting infrastructure; underfunding; bureaucracy; poor work culture; high import duties on ICTs; cost of ICTs; unsustainable funding.

The most commonly identified drivers in specifically cited e-government successes included donor funding, good local stakeholder involvement and motivated ICT support personnel. The most commonly identified inhibitors in specifically cited e-government failures included poor local stakeholder involvement, poor application design, poor and irregular content management, and demotivated ICT support personnel.

The single most important idea for improvements that emerged from the review was government prioritisation of, and increased investment in, e-government programmes, with appropriate justification and motivation highlighting cost savings and improved efficiencies. Other key ideas include: getting the engagement, involvement and buy-in of key local stakeholders; lowering the cost of ICTs by increased liberalisation and deregulation in the ICT sector; creating a more effective role for the private sector; and studying and emulating e-government successes of other countries.

An overall comparison of the responses reveals that respondents from ICT companies appear to have a fuller understanding of e-government in Zambia when compared with those in government and the NGOs. This is ironic, since government should be at the centre of e-government. The situation can be partly explained by the fact that the ICT companies are in the business of operating ICT networks and creating, deploying and selling ICT solutions to a

wide variety of clients, both inside and outside government. Still, it is worrying that the respondents from government and the NGOs are not well informed about e-government progress outside their individual sectors. This suggests a lack of information sharing and coordination in the e-government initiatives.

CRITICAL ANALYSIS OF E-GOVERNMENT IN ZAMBIA

The data reported here offers a view on a few aspects of e-government, thus providing a basis for understanding and analysis. Analysing the data leads to the interpretation that Zambia is operating between Stage 1: Emerging presence: Offering basic information online and Stage 2: Enhanced presence: Greater sources of information, and e-tools and e-services of the four-stage model of e-governance evolution proposed by Gupta (2011) (Figure 2). The majority of e-government services discussed above are at Stage 1, while a few are at Stage 2. There are no current manifestations of Stage 3: Transactional presence or Stage 4: Connected presence. Although the pace of development in the last decade has been slow and uneven, there are signs that the pace of development is increasing. According to the UN E-Government Survey, Zambia moved up 15 places between 2008 and 2010 (UN, 2010).

The success factors cited by respondents can be classified as internal and external. Internal factors are those within the direct influence or control of government, whereas external factors are not. The most significant internal factor has been Zambia's continuing move towards a more democratic system of government. This has, in turn, promoted increased transparency and accountability in government operations, which can be supported by e-government mechanisms. Donor-funding of projects appears to be the most significant external factor in building e-government. Such projects have provided vital initial stimulus, expertise and funding. However, they have also raised problems, such as poor long-term sustainability. The failure factors or inhibitors cited by the respondents can also be classified as internal (resistance to change) and external (cost of ICTs).

The most important recommendation put forward by the respondents is that government must prioritise e-government programmes. However, the various policy documents examined above indicate that the Zambian government already recognises the importance of e-government, at least on paper. This suggests that the key issue around the adoption and success of e-government in Zambia is not a lack of policy or priority per se, but rather a lack of effective and coordinated implementation of existing policies. The model proposed by Weerakkody et al (2007) (Figure 1) offers an implementation framework for e-government, which addresses many of the issues that emerged from the review. However, to achieve effective and coordinated policy implementation, the process must be supported by two essential elements: policy re-formulation and policy harmonisation.

Policy re-formulation refers to the formulation of new policies, or the reformulation of existing policies, in response to internal or external factors as revealed by research-based analysis. Policy harmonisation refers to mutual changes and adjustments to both e-government and other (related) government policies in order to eliminate inconsistencies and to enhance compatibility. This review indicates that there are numerous e-government programmes in Zambia, many of which are poorly implemented and coordinated and are therefore not achieving

the required effectiveness with respect to improving the quality and availability of public services. The source of the problem often lies in the absence of regular policy re-formulation and policy harmonisation, preferably every three years.

An example of the need for policy reformulation is the requirement to address the vital importance of private sector participation highlighted by respondents in this review and supported by research (Coates & Nikolaus 2010; UN, 2010). In order to stimulate the participation of the private sector, e-government policy must be formulated in such a way that private sector participation is meaningful, rather than an afterthought. Existing policy, such as the Sixth National Development Plan, generically promises to "promote private sector investment and Public Private Partnerships (PPPs)". However, the Sixth Plan does not specifically define any e-government initiatives involving or inviting private sector participation. This is in sharp contrast to other sectors, such as energy, housing, agriculture and transport infrastructure, where a large number of specific programmes and projects are clearly defined in the Sixth Plan.

The example of private sector participation can also be considered in relation to policy harmonisation. Current taxation policy, for instance, discourages the private sector from investing in e-government-related ICT skills and infrastructure, because of high import duties on new software and computing equipment. Another case in point is the current legal and regulatory framework, which is lagging behind the times with respect to technological convergence. In particular, the existing regulations on television broadcasting and Internet services do not permit Internet-based TV transmissions, even though such new technologies provide opportunities for the private sector to support e-government innovation. Furthermore, broadcast regulation is non-existent, whilst the ZNBC continues to enjoy certain monopoly rights in terrestrial television broadcasting. Thus, government policy in these related areas discourages private sector participation in e-government.

The data on the ICT sector indicates that 32% of inhabitants access services via their mobile phone, while approximately 0.14% access services via the Internet (Tables 1 and 2). However, an increasing number of citizens access the Internet via a mobile phone. Consequently, the mobile phone should be the primary e-government channel for Zambian citizens, with the Internet being developed as a secondary channel.

The e-government initiatives in Zambia that have achieved sustained success appear to share two main characteristics: they are government priorities and they have won the long-term support of local stakeholders. This raises two questions. The first question is: What causes government to prioritise certain e-government initiatives? External factors constitute one potential set of influences. Mwango (2004)[1] reported that the adoption of IFMIS under the IMF and World Bank's HIPC[2] programme encouraged the Zambian government to prioritise the implementation of IFMIS. Indeed, the data indicates that many initiatives begin as donor-initiated and donor-funded projects. Various internal factors are also influential in setting government priorities, including the relative power and interest of particular ministries.

1 Zambia's then Accountant-General

2 HIPC = Heavily indebted poor countries

The second question is: Why do certain e-government initiatives win the long-term support of local stakeholders? The data indicates that local stakeholders are won over by tangible benefits. Zambian citizens are, of course, the most important stakeholders. However, government employees and government leaders are equally essential stakeholders.

Discussion of both these questions points to leadership as a crucial factor in the success of e-government. The review reveals many failure factors, some internal and some external. However, leadership is the crucial factor, because it is leaders who decide how to drive initiatives or respond to internal and external factors. In the case of resistance to change (internal failure factor), government can introduce e-governance-related incentives and performance measures, whereas for cost of ICTs (external failure factor), government can introduce measures to reduce the total cost of ownership of ICTs.

The review indicates that Zambia's e-government strategy tends to be highly fragmented and lacking in focused and concerted leadership. A "lack of foresight [or vision] and coordination" is identified as a key weakness by some respondents. One of the root causes for this conspicuous lack of vision and coordination is that many e-governance projects are initiated and funded by donors. It is not surprising, therefore, that these projects do not appear to be part of any cohesive plan. Without effective national leadership and the vision it provides, policies are unlikely to be converted into results.

POLICY RECOMMENDATIONS

Zambia has the potential to enter a period of rapid and transformative economic development. Based on the increase in its gross national income (GNI) per capita, Zambia was recently reclassified by the World Bank from a low-income country to a lower middle-income country (World Bank, 2011). A recent study reported in The Economist forecasts that over the next five years (2011-2015), Zambia will be among the world's rapidly-growing economies (6.9% annual average GDP growth) (The Economist, 2011).

Improving the performance of government through e-government is an important way for government to help realise this economic potential. e-Government contributes to realising economic potential by improving the effectiveness and efficiency of delivering government services. An example of a potential economic benefit due to improved effectiveness is better government financial systems (the IFMIS and ZRA systems); these systems reduce financial malpractice and increase tax revenues, which in turn provide more financial resources to improve public health, education and infrastructure. An example of a potential economic benefit due to improved efficiency is better government licensing and registration systems (the PACRO and RTSA systems); these systems save valuable time and money for government, companies and individuals and thereby improve overall economic productivity.

Based on the results of this study, the following six areas for policy reform towards enhancing e-government are recommended:

LEADERSHIP

The analysis indicates that the success and failure factors, whether internal or external in nature, are related to the exercise of leadership. This is particularly so since the transition from traditional government to e-government demands strong leaderships skills in terms of vision, communication and change management. To succeed, e-government must become a key performance area (KPA) for all three spheres of government and should not be relegated to being donor-funded projects. In particular, leadership should guide the process of selecting low-risk, high-value and high-risk, high-value projects (Weerakkody et al, 2007) and ensuring their success based on an understanding of internal and external success factors.

STAKEHOLDER ENGAGEMENT

Leadership can best be exercised by getting the buy-in, engagement and participation of key stakeholders. The critical "missing" stakeholders include the political leadership at national, provincial and local level, citizens and the private sector. A few segments of the civil service are most closely engaged with e-government initiatives, a necessary but far from sufficient state of affairs.

Another key group of stakeholders that tends to be neglected is the non-governmental (NGO) sector. In Zambia, NGOs are deeply involved with the provision of many basic services, such as health and education. Consequently, they too must be included in the implementation of e-government programmes.

Finally, Zambian universities and other local research institutions must be engaged. Much of what passes for "Zambian" e-government is merely imported from abroad. As a result, most existing e-government policies and technologies are not designed for local conditions. Local research institutions must be fully incorporated in the design of e-government policies and technology approaches.

PRIORITISATION

The review indicates that e-government is not a top priority for the Zambian government. Although good governance is recognised as a cross-cutting issue in both the Fifth and Sixth National Development Plans, e-governance is not. e-Government tends to be viewed as an expensive luxury, rather than a vital tool for significantly improving government performance. This view fails to recognise the significant benefits, economic and otherwise, that can be realised. Only when e-government is given priority throughout government can it be expected to consistently deliver significant results, instead of the few pockets of excellence that currently exist.

INCREASED FUNDING

National funding for e-government is woefully inadequate. As noted above, e-government only accounted for approximately USD1 million, or about 0.01% of the Fifth Plan (2006-2010) core programmes budget, and approximately USD21 million, or about 0.2% of the Sixth Plan (2011-2015) budget. Most of the existing funding for e-government projects comes from donors. Increased funding from government sources is required to move away from donor dependency.

One possible project management and funding model would incorporate centralised and decentralised elements. Each individual ministry would be responsible for the management and implementation of its own e-government projects, under the general oversight of a department tasked with national e-government policy, monitoring and evaluation. A measure of centralisation would enable the government to effectively coordinate and monitor e-government projects, as well as save money by exploiting economies of scale for purchases of services and equipment.

Funding for the e-government programme should be viewed as investments rather than merely as an expense. The aggregate "return" on these investments in terms of service delivery, operational efficiencies, cost savings and increased revenues could then be quantified in a well-defined index. The quality and quantity of funding should be monitored and measured. Alternative sources of funding include: re-allocated funds from existing budgets that would be more efficiently and effectively spent on e-education or e-health; cost savings realised from e-government initiatives; usage charges for e-government transactions; and private sector participation.

PRIVATE SECTOR PARTICIPATION

Private sector participation in e-governance should be promoted. This could take various forms ranging from simple client-vendor relationships to different forms of public private partnerships (PPPs). In simple client-vendor relationships, private companies can provide various e-governance services on behalf of government in return for user fees. A few examples of such client-vendor relationships in the area of e-government already exist, but there is considerable scope to develop them even further. PPPs can take different forms, including simple partnerships, joint ventures and special-purpose vehicles. The author is not aware of any existing PPPs in the area of e-government in Zambia. However, there are many examples of successful PPPs in other sectors such as mining, energy and real estate, from which lessons can be drawn for e-governance.

MOBILE CHANNELS

As they are the most widely used and available ICT devices in Zambia, mobile devices should be the platform of choice for e-services. The majority of existing applications appear to be targeted at Internet users, though fixed and mobile Internet connectivity is currently low. This current state presents opportunities for mobile-based e-governance applications to be developed. At the lower end, this includes SMS-based notifications on health test results or applications for government documents or licenses. At the higher end, electronic payments for government services could be designed via mobile phone.

CONCLUSION

This article presents a critical analysis of e-government in Zambia based on the results of a small sample study, conducted by interviews with key respondents representing multiple perspectives. The analysis indicates that, despite a few notable successes, e-government is highly fragmented and uncoordinated, mainly due to a lack of focused and concerted leadership. The policy recommendations that emerge from the study indicate the need to vigorously promote private sector participation and the development of locally-relevant, mobile phone-based applications.

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REFERENCES

Bwalya, K. (2009). Factors affecting adoption of e-government in Zambia. *Electronic Journal of Information Systems in Developing Countries*, Vol. 38, No. 4, pp. 1-13, available online from http://www.ejisdc.org.

Coates, N. & Nikolaus, L. (2010). Zambia and e-government: An assessment and recommendations. In B. M. Maumbe (ed). *e-Agriculture and e-government for global policy development: Implications and future directions* (pp. 137-161). New York: Information Science Reference/IGI Global.

CSO (2011). 2010 census of population and housing: Preliminary results. *Republic of Zambia Central Statistical Office Monthly Bulletin*, Vol. 94, January 2011, pp. 2-3, Central Statistical Office (CSO), available at http://www.zamstats.gov.zm/media/vol_94_2011_the_monthly_january.pdf.

CTO (2009). History of telecommunications in Zambia [online], Commonwealth Telecommunications Organisation (CTO), available at http://www.cto2009.org.zm/content/telecoms-industry/.

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly,* Vol. 13, No. 3, pp. 319-340.

Government of Zambia (2011). Sixth National Development Plan, 2011-2015: Sustained economic growth and poverty reduction, January 2011. Ministry of Finance and National Planning, available at http://siteresources.worldbank.org/INTZAMBIA/Resources/SNDP_Final_Draft__20_01_2011.pdf.

Government of Zambia (2010). The Competition and Consumer Protection Act (Act No. 24 of 2010), available at http://www.parliament.gov.zm.

Government of Zambia (2009a). The Constitution of Zambia Amendment Act (Act No. 20 of 2009), available at http://www.parliament.gov.zm.

Government of Zambia (2009b). The Information and Communication Technologies Act (Act No. 15 of 2009), available at http://www.zicta.zm.

Government of Zambia (2009c). The Electronic Communications and Transactions Act (Act No. 21 of 2009), available at http://www.zicta.zm.

Government of Zambia (2006a). Fifth National Development Plan, 2006-2010: Broad-based wealth and job creation through citizenry participation and technological advancement, December 2006. Ministry of Finance and National Planning, available at http://siteresources.worldbank.org/INTPRS1/Resources/Country-Papers-and-JSAs/ZAMBIA-FNDP.pdf.

Government of Zambia (2006b). National Information and Communication Technology Policy, April 2006. Ministry of Communications and Transport, available at http://www.mct.gov.zm/index.php?option=com_docman&task=doc_download&gid=2&Itemid=202.

Government of Zambia (2002a). The Independent Broadcasting Authority Act (Act No. 17 of 2002), available at http://www.parliament.gov.zm.

Government of Zambia (2002b). The Zambia National Broadcasting Corporation Act (Act No. 16 of 1987, Act No. 13 of 1994, Act No. 20 of 2002). Laws of Zambia, Vol. 11, Chapter 154, available at http://www.parliament.gov.zm/downloads/VOLUME%2011.pdf.

Government of Zambia (1996). The Constitution of the Republic of Zambia, 1991 (As amended by Act No. 18 of 1996), available at http://www.icrc.org/ihl-nat.nsf/.

Gupta, T. (2011). The UN E-Government Survey: Towards a More Citizen-Centric Approach, 27 December 2011 (originally published on 10 January 2011), available at http://blogs.worldbank.org/publicsphere/un-e-government-survey-towards-more-citizen-centric-approach/.

Larmer, M. (ed) (2010). *The Musakanya papers: The autobiographical writings of Valentine Musakanya*. Lembani Trust, Lusaka.

Mwango, C. (2004). Integrated Financial Management Information Systems – Zambia. Paper presented at the *Regional Workshop for Anglophone Africa: Assuring effective design and implementation of Integrated Financial Management Systems in Governments*, Nairobi, Kenya, 08-12 November 2004, available at http://info.worldbank.org/etools/docs/library/118009/Integrated%20Financial%20Management%20Systems%20in%20Governments%20-%20Nairobi%20%28Nov%202004%29/index.html.

NEPAD (2001). The New Partnership for Africa's Development (NEPAD). NEPAD framework document, October 2001, available at http://www.nepad.org.

SADC (2004). SADC Regional Indicative Strategic Development Plan. Southern African Development Community (SADC), Arusha, Tanzania, March 2004, available at http://www.sadc.int.

The Economist (2011). The lion kings? Africa is now one of the world's fastest-growing regions. *The Economist*, 6 January 2011.

UN (2010). United Nations e-Government Survey 2010. United Nations (UN), available at http://www2.unpan.org/egovkb/.

Weerakkody, V., Dwivedi, Y. K., Brooks, L., Williams, M. D. & Mwange, A. (2007). e-government implementation in Zambia: Contributing factors. *Electronic Government, An International Journal*. Vol. 4, No. 4, 2007, pp. 484-508.

World Bank (2011). Changes in Country Classifications, 1 July 2011, available at: http://data.worldbank.org/news/2010-GNI-income-classifications/.

ZICTA (2011). ICT Statistics, Zambia Information and Communications Technology Authority (ZICTA), available at http://www.zicta.zm/index.php/ict-information.html.