

## **E-Government: Challenges and Opportunities in Botswana**

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### **Abstract**

**Purpose** – *The purpose of this paper is to examine the challenges encountered in e-government implementation, as well as the potential opportunities available in the context of Botswana society.*

**Design/methodology/approach** – *A detailed examination and analysis of Botswana's published e-government vision and strategy is presented, together with a review of other relevant literature.*

**Findings** – *The findings and implications of this study reveal Botswana is still lagging behind in utilizing information and communication technologies for delivering government services online.*

**Practical implications** – *An understanding of the current status of e-government in Botswana can help policy makers in the country pursue development of the public sector organizations on the one hand, and would be of importance for Botswana's economic future success on the other.*

**Originality/value** – *This is believed to be the most up-to-date and comprehensive analysis of Botswana's plans and assessment of its level of readiness for delivery of e-government services.*

**Keywords:** Government, Service delivery, Botswana, Public Administration

**Article Classification:** General Review

### ***Introduction***

The emergence of information communication technologies has brought a lot of changes to the way things are done in the world. These changes are across the spectrum; the way private companies do business, the way universities do things, the way governments provide services to their citizens and the way they interact with stakeholders at large.

A visit to the government departments is a nightmare; it is characterized by a lot of paper work, long queues, bureaucracy, cramped spaces and a lot of frustrations. With the growing demands of citizens and changing global rules and regulations, governments are under pressure to deliver at the right time and quality. Governments are trying to tackle the demand by re-engineering their processes and eventually ICT play a role in the proposed solution. ICT properly used, ICT has the potential to empower people to overcome development obstacles, address social problems, and strengthen democratic institutions. However, for a country to gain from the benefits of ICT, technology must be implemented and used effectively. The transformation to use of ICT to provide services by government; e-government is slowly gaining ground across the world.

E-governance, which is a paradigm shift over the traditional approaches in Public Administration, means rendering of government services and information to the public using electronic means. This new paradigm has brought about a revolution in the quality of service delivered to the citizens. It has ushered in transparency in the governing process; saving of time due to provision of services through single window; simplification of procedures; better office and record management; reduction in corruption; and improved attitude, behaviour and job handling capacity of the dealing personnel (Monga ,2008).

African governments have understood and appreciate the contribution of e- government to the government agenda. The 4<sup>th</sup> African Development Forum (ADF IV, 2004) has outlined the role of e-government as:

*E-Governance ... is an important innovation for enhancing good governance and strengthening the democratic process and can also facilitate access to information, freedom of expression, greater equity, efficiency, productivity, growth and social inclusion. Successful e-government initiatives can have demonstrable and tangible impact on improving citizen participation and quality of life as a result of effective multi-stakeholder partnerships. African governments need to develop policy frameworks, supported by legislation for e-Governance, that are linked to strategic development objectives*

For the Southern African case, countries such as Mauritius, South Africa, Mozambique, Botswana and Namibia have started putting in place institutional and regulatory frameworks solely dedicated for the advancement of e-Government adoption (UN e-govt. report, 2008). At the regional level, the SADC has sought to develop policies that may be adopted and further adjusted to suit the local contexts of individual countries (Bwalya K. J. and Healy, M. 2010)

Botswana has a dedicated agenda towards promoting e-Government because the leaders have understood the importance of e-Government to an appreciable extent. Quoting from Mmegi Newspaper (2009, September), the potential of e-Government on improving the governance value chains in Botswana is explicitly outlined. For the case of Botswana, e-Government delivers far greater stakeholder value when it is designed within the context of a broader service delivery reform agenda. This ‘whole-of-government strategy’ leverages infrastructure, reduces cost and improves the on-line experience for clients.

### **1.1 Scope of E-government**

While e-government encompasses a wide range of activities, we can identify three distinct areas. These include government-to-government (G to G), government-to-citizens (G to C), and government to business (G to B), (Monga, 2008) Government to citizen (G to C) facilitates citizen interaction with government, which is primary goal of e-government. This attempts to make transactions, such as payment of taxes, renewing licenses and applying for certain benefits, less time consuming and easy to carry out.

Government to Business (G to B) sector includes both the procurement of goods and services by the government as well as the sale of surplus government goods to the public on Line. (Mutula, 2012) In many respects, the government to government (G to G) sector represents the backbone of e-government. It is felt that governments at the union, state and local level must enhance and update their own internal systems and procedures before electronic transactions with citizens and business are introduced. Government to government e-government involves sharing data and conducting electronic exchanges between various governmental agencies (Monga, 2008)

### **Literature Review**

#### **Definition**

Many studies have defined e-government in different ways: Coleman (2006) has defined e-government as the combination of electronic information-based services (e-administration) with the reinforcement of participatory elements (e-democracy) to achieve the objective of “balanced e-government”. Muir and Oppenheim (2002) defined e-government as the delivery of government information and services online through the internet or other digital means. E-Government has also been defined as the delivery of improved services to citizens, businesses, and other members of the society through drastically changing the way governments manage information (Kumar et al., 2007).

**Abramson and Means, 2001** – e-Government can be defined as – the electronic interaction (transaction and information exchange) between the government, the public (citizens and businesses) and employees.

**World Bank, 2001** – e-Government is the government owned or operated systems of information and communication technologies that transform relations with citizens, the private sector and/or other government agencies so as to promote citizens’ empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency.

**Fraga, 2001** – e-Government is the transformation of public sector internal and external relationships through net-enabled operations, IT and communications, in order to improve: Government service delivery; Constituency participation; Society.

**Tapscott, 1996** – e-Government is an Internet-worked government which links new technology with legal systems internally and in turn links such government information infrastructure externally with everything digital and with everybody – the tax payer, suppliers, business customers, voters and every other institution in the society.

**UNPA & ASPA, 2001** - eGovernance is the public sector's use of the most innovative information and communication technologies, like the Internet, to deliver to all citizens improved services, reliable information and greater knowledge in order to facilitate access to the governing process and encourage deeper citizen participation(Ndou,2004)

### **Benefits**

E-Government can also result in huge cost savings to governments and citizens alike, increase transparency and reduce corrupt activities in public service delivery. Previous studies have categorized public service delivery in three groups: publishing, interacting, and transacting (Kumar et al. 2007).

It can transform old challenges and create unprecedented possibilities for sustainable economic development, just as it has done for businesses in the industrial world. ICTs offer the potential not just to collect, store, process and diffuse enormous quantities of information at minimal cost, but also to network, interact and communicate across the world (Crede and Mansell, 1998).

Main benefits of E-Government as identified by Ndou(2004)are:

1. Cost reduction and efficiency gains (Tapscott, 1996; Amit and Zott, 2001; Malhotra, 2001)
2. Quality of service delivery to businesses and customers
3. Transparency, anticorruption, accountability
4. Increase the capacity of government
5. Network and community creation
6. Improve the quality of decision making
7. Promote use of ICT in other sectors of the society

### **Barriers and Challenges**

The factors affecting e-Government can be divided into individual and organizational. Titah and Barki (2006) have suggested that apart from organizational factors, individual beliefs of citizens have a significant influence on the adoption of e-Government services. With strong reference to Davis' technology acceptance model of 1989, it is known that individual beliefs such as perceived usefulness (PU) and perceived ease of use (PEOU) have been considered as the dominant beliefs that affect the intention to adopt or use the technology in a business to consumer (B2C) model (Warkentin et al. 2002).

As e-government services are mostly provided using ICT, it is imperative that the understanding of Information Technology (IT) adoption be done. This understanding can further be extended to help us understand the uptake and adoption of e-government systems (Bwalya, 2009)

According to case studies from different countries, there are many challenges and issues that need to be addressed for successful implementation of e-government. There are distinct factors that command the adoption of e-government, and these factors depend on the local context of any country.

Practically, these barriers can have a significant effect on the development of government organizations' capabilities to provide online services and transactions. According to the findings, these challenges include poor ICT infrastructure, security and privacy issues(Alshehri and Drew ,2010). Security and privacy of information is another serious technical challenge identified in this research and is a well documented issue for e-government implementation all around the world(Layton ,2007)

Challenges are identified as follows (Alshehri and Drew, 2010):

- 1 *IT Infrastructural weakness*
- 2 *Lack of knowledge about the e-government program*
- 3 *Lack of security and privacy of information*
- 4 *Lack of qualified personnel and training courses*
- 5 *Culture differences*
- 6 *Leaders and management support*
- 7 *Lack of policy and regulation for e-usage*
- 8 *Lack of partnership and collaboration*
- 9 *Lack of strategic plans*
- 10 *Resistance to change to e-systems*
- 11 *Shortage of financial resources*

### **Successes**

Heeks (2003) partitions e-government success in three different categories: Total failure; Partial failure; and Success. Despite the challenges some countries have achieved on e-government The Independent Electoral Commission (IEC) successfully developed an e-procurement system that allows for open and transparent bidding of government tenders aimed at preventing corruption (Mutula, 2008). More recently than ever, 95 percent of the government agencies in Jordan operate their government web sites, namely 40 had online presence out of 50 counted in total (MoICT-Jordan E-Readiness, MoICT, 2003b). The other successful e-government project is the South African Revenue Services' (SARS) e-filing system which provides a way to conduct transactions related to tax returns on the internet between government and business (G2B). In terms of literature on successes of e-government in Botswana, it is not available due to the fact that the area of e-government is still at its infancy stage. The government of Botswana has done few projects e.g. National Identification System, E-Passport, E-license and others (Nkwe, 2011)

### **Information Communication Technology in Botswana**

The Botswana Government has been a player in the ICT market for a long time having automated its functions some years back. The continued growth in the use of ICT reached great proportions between the years 1990 – 2000 when large systems within government were introduced. Government continued to follow international best practice as it converged the IT, Telecom and the Media (Ministry of Communications Science and Technology, 2002). 2006 Further Liberalisation Pronouncement saw service neutral licenses to 3 PTO licensees,

- Introduction of VOIP
- Unlimited VANS licenses
- Full Liberalisation in 2009

The Director in the Department of Information Technology ,Ms Joyce Mpete noted that National ICT Policy developed and approved in 2007, was put in place to create a stable and competitive market and provide an investor friendly legal and regulatory environment.

The government of Botswana see ICT as a key driver of its developmental agenda: economic growth, poverty reduction and global competitiveness. The government adopted ICT policy in 2007, named Maitlamo and in its Vision 2016 approved in 1997, the ICT is well pronounced in the “Informed and Educated Nation” pillar. The Maitlamo has the following goals; Create enabling environment, Universal service and access to information and communications facilities, Making Botswana a Regional ICT Hub.

Also, different legal and regulatory frameworks for the ICT industry are being introduced. On the ICT regulatory, institutional and legal front, Botswana has established the Botswana Telecommunications Authority (BTA) and the Botswana Telecommunications Company (BTC) as ICT regulatory bodies and watchdogs. Botswana has put in place rigorous ICT policies (such as the Maitlamo ICT policy of 2006) to draw the ICT implementation roadmap for the country.

The government through its ministries has spent and continues to spend on technology. The government is embracing technology as an efficiency tool (Iyanda & Ojo, 2008; Nkwe, 2011). According to Botswana Government, 2004 P1.3bn (US\$200m) was allocated for technology programs in the NDP 9 through several ministries. In 2004, the ministry's budget was P144million (Budget Speech 2003). The government is the biggest consumer of ICT and government use of IT is particularly visible through the central government site and use of ICT in the control of national income and expenditure sources (Uzoka & Ndzingo, 2009; Nkwe, 2011)

The Director, IT summed the Botswana situation by noting the following:

- ▶ Developments in the ICT sector have been phenomenal and continue to grow.
- ▶ The telecommunication industry has been liberalised this is to help drive costs down.
- ▶ Policies have been developed with an aim to improve penetration, increase uptake and bridge the digital divide.
- ▶ Diversify the economy.

### **E-government Initiatives in Botswana**

The Botswana e-Government landscape presents a case where dedicated efforts have been authored in a view to encourage the proliferation of e-Government implementation. Within this line, a dedicated e-Government team has been mandated with the responsibility of encouraging the penetration of e-Government projects to the doorsteps of the people; evaluate the value of appropriate information and communication technology (ICT) infrastructure such as erecting of a dedicated Kgalagadi radial fibre network; erection of a government data network (GDN) that have been put in place, and encouraging the awareness of the e-Government phenomenon (Bwalya, 2010).

“For Botswana to flourish and prosper in the 21st century, we will need to become innovative users of ICT, and have a high performing government that is providing convenient and efficient electronic services to all of our citizens,” said Seretse Khama Ian Khama, President of the Republic of Botswana. “e-Government can help us achieve both of these objectives, and the 2011-2016 Strategy provides us with a pragmatic roadmap for getting there. Over the next five years, Botswana will spend an estimated US\$76 million on “an ambitious, but very achievable” e-government endeavour. The South African nation with a population of two million revealed its National e-Government Strategy 2011-2016 on 6 June 2011

The private sector should have a strong role to play in the delivery of the Botswana e-Government programme, the Coordinator of Public Service Reform has said. Speaking at a press briefing at the conclusion of a two-day e-Government strategy conference, Dr Omponye Kereteletswe said the contribution of both the public and private sectors were crucial in the implementation of the e-government programme (Mmegi, 2011). Government is in the process of developing the national e-government strategy for the period of 2010-2016, says coordinator of strategic management in the Ministry of Local Government, Ms Tshenolo Omphitlhetse. Ms Omphitlhetse said government had since embarked on a progressive e-government programme as a way of accelerating the delivery of the national information communication technology policy known as Maitlamo. Government had created a web-portal centred on the needs of citizens, business, government employees and tourists. The portal was to be kept alive with the current and updated content by individual ministries and government agencies that were expected to author, approve and publish content on a regular basis (BOPA, 2010)

### **E-Government Projects in Botswana**

In May 2008, The Government of Botswana had undertaken to improve land management through the introduction of electronic land management information systems. The development of these systems flowed from the country's ICT policy, which provided a roadmap that guided the transformation of the country toward e-governance through the adoption of ICT strategies. Botswana has a dedicated agenda towards promoting e-Government because the leaders have understood the importance of e-Government to an appreciable extent. Quoting from Mmegi Newspaper (2009, September), the potential of e-Government on improving the governance value chains in Botswana is explicitly outlined

### **E-Legislation**

The government has made efforts to start a new project on E-Legislation. The goal is to provide online connectivity to laws and policies. This project has helped in supporting delivery of service through electronic means and providing citizen basic rights & protection in a connected world.

### E-Learning

A lot of efforts have been channeled towards e-learning. There is a national e-learning committee tasked with formulating and promotion of e-learning in Botswana. The ministry of education is trying to encourage its partners to look at e-learning as one of the possible teaching modes in Botswana (Nkwe, 2011). Government is working around the clock to implement e-learning, Maitlamo (2008) has noted that the government is working on broadband connection to schools, refurbishment of computers then delivered to schools and training of teachers and administrators on e-learning.

### E-Health

The government has started to partner with developed countries to get assistance on e-health.

Projects on e-health require a lot of financial and human capital investments. In 2008 the government of India and Botswana went into partnership which resulted in Botswana receiving sophisticated e-health machines from India.(Nkwe,2011).The government has seen e-health as a way to increased quality, safety, timeliness & efficiency. Some of the projects such as telemedicine, Integrated Patient Management System and Health Workers System are already in use.

### E-Business

The government has enabled an environment conducive for e-business. Mobile banking has brought the safety and security of banks to places located far from the halls and walls of the traditional commercial bank, providing previously unbanked populations with the conveniences of modern-day banking. The service allows anyone who has a mobile phone to access banking facilities such as balance enquiries, statement requests, transfer of funds, payments to third parties and opportunity to purchase pre-paid airtime. (ICT4D, 2010)

**Table 1: Computerization of Government Operations (ICT4D, 2010)**

Ministry	Project	Project description
Attorney General Chambers	Computerized Case Management	Case registration system that tracks case files
	Computerization of Lobatse High Court	Track court records to check the status of the case
DPSM	Computerized Personnel Management System	Runs across government to update the status of government employees, from appointments to retirements
Education	Computerization of Students Records and Grant Loan Scheme	Registration of government sponsored students at Students Placement and Welfare Department.
	Computerization of Teaching Service Management	Computerization of personnel management for teachers
Finance	Government Accounting and Budget System	Runs across government, for budgeting, accounting and supplies.
Health	Integrated Patient Management System	Centralized database for patient data management to link all hospitals in the country. Patient registration, laboratory and wards management
MLHA	National Archives and Records Management Systems	Registration, classification, request, retrieval, tracking, destruction and transfer of e-records and manual records. Will ensure that records are not altered in order to preserve their integrity
	Computerization of Civil and National Registration	Registration of births, deaths and national identity cards
	Computerization of Labor and Social Security	Issue work permits and scanning factory plans
Local Government	Computerization of Human Resource Management	Update status of local government employees from appointment through to retirement
	Computerization of Social Benefit and Reconciliation System	Registration of the needy, orphans and old-age pensioners in the country

The Ministry of Communication Science and Technology (2007) reports that very few ministries in Botswana have web sites tailored to the needs of clients and virtually none offer any form of online transaction. Government departments' web sites have a large amount of outdated information and share a common problem in that information is difficult to find.

*Botswana's E-Government Rankings as adopted from West (2004, 2006)*

#### **E-Government Country Ratings, 2003 and 2004**

Botswana	30.0%	25.0%
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#### **E-Government Country Ratings, 2005 and 2006**

Botswana	27.0	22.0
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Various indices are used for measuring a nation's e-government capability and maturity. The Digital Opportunity Index (DOI) can be used to measure and evaluate the opportunity, infrastructure and use of ICTs by government and its people. The DOI monitors recent technologies such as broadband and mobile Internet access, the falling price of broadband, and increasing broadband speeds (World Information Society Report, 2006)

#### **Digital Opportunity Index (DOI) of Botswana (2004)**

<i>Country</i>	<i>Opportunity</i>	<i>Infrastructure</i>	<i>Utilisation</i>	<i>DOI</i>	<i>World Rank</i>
<i>Botswana</i>	0.92	0.12	0.01	0.35	102

At a glance, the Botswana government web portal reveals a lower level of e-government maturity on the most common model of e-government maturity with five stages,(United Nations,2008). The emerging stage is characterized by a government's online presence that is mainly comprised of a web page and/or an official website; and links to ministries or departments of education, health, social welfare, labor and finance. Much of the information is static and there is little interaction with citizens.

As for the four remaining stages, *enhanced, interactive, transactional and connected* Botswana still has a long way to go.

#### **Challenges**

There are a lot of challenges faced by e-government as researchers such as Monga, A. (2008), Dada (2006), Bwalya(2009), Mutula and Mostert(2008) and others have discussed them.

*Low level of the internet penetration:* Internet diffusion is still low due to the fact that local phone calls are expensive and the fact that PC's prices are expensive. The diffusion rate is low for the following ;Fixed line – 8%,Internet -6%,Mobile -90%,Broadband (ADSL) -1% ,PC -3%. The telecommunications infrastructure is still inaccessible to all parts of Botswana. In places where it is accessible, cost is such a barrier. This is a challenge to e-government.

*Telecommunications infrastructure constraints:* The government has tried to invest in infrastructure to support e-government and ICT. Projects such as Ntelelsa I and II have tried to minimise the gap. There are still a lot of problems regarding infrastructure such as obsolete equipment, infrastructure in few better developed towns and villages. High cost of telecommunications services and lack of an adequate civilian telecommunications "backbone" network nationwide is another concern of promoting e-government implementation (Alomari, 2006).

*Lack of institutional framework supporting e-government:* Creating an institutional framework supporting e-government initiatives. This includes setting up a high-level steering committee, monitoring implementation activities, ensuring e-government investment reviews, and establishing clear mandates and responsibilities for implementing e-government. The Maitlamo policy is no coming out strongly on the framework to support e-government. However, it is important to define a clear mandates and responsibilities plan to allow effectively for e-government development and ensure proper co-ordination across government agencies. (UNDP, 2006).

*Lack of allocated budget for e-government deployment:* e-government systems require considerable financial resources: resources must be allocated to developing and managing systems, building up technical infrastructures, and coordinating systems and initiatives (UNDP, 2006).

*Digital divide:* The digital divide is always described in terms of the difference in the number of telephones, internet users or computers per head between rich and poor countries, Kenny and Fink (2004). In their recent study of the global digital divide, pointed out that the digital divide's size and importance have been overstated and that current trends suggest that it is actually shrinking, not growing (Mutula, 2005). Ownership of PCs and disparities in internet access are among the most important challenges faced today in implementing e-government. The digital divide in developing countries in general and Africa in particular is closely tied to the contextual economic environment of the respective countries. Countries with thriving economies are by and large associated with increased access to ICTs compared to those whose economies are doing badly (Nua, 2002).

*Privacy and security concerns:* Security and privacy of information is another serious technical challenge identified in this research and is a well documented issue for e-government implementation all around the world (Layton, 2007). Participants feel that using websites to transfer their personal information (such as name, picture, and date of birth, ID number, and credit card details), sharing information with public agencies online or electronically is not safe. They are afraid that e-services websites are not secure enough to protect their private information from being misused or distorted by hackers. For e-government activities, service continuity is critical not only for the availability and delivery of services, but also to build citizen confidence and trust (US-GAO Report, 2002)

*Limited IT skills and training:* this includes lack of computer literacy among the citizens, businesses, and government sectors themselves. A lot of training has to be done in terms of ICT training. In Botswana, people who have skills in ICT are limited. The majority of those who have them are young citizens thus the elders will be left out in adopting e-government. The other major problem is that even the government employees or those who are suppose to make the e-government to run smooth do not have the skills.

*Culture:* Overcoming cultural inertia is one of the main challenges to e-government implementation in developing countries (Ndou, 2004). Heeks (2003) reported the major reason behind e-government projects failure in most, if not all, developing countries is the gap experienced between the design and reality of information systems implementation. Usually moving from paper based to e-service, or any change in society is usually met by some form of resistance. Culture plays a major role in this resistance.

*Lack of citizen awareness and participation:* A lot of services have been provided via ICT in Botswana, The adoption rate of these services are way below expectation. The mobile banking service is one of the best facilities introduced by banks but Botswana still prefer to spend hours in a bank just to get an account balance or to transfer funds. E-government is faced with the same problem.

### **The way forward**

The government should play a leading role in developing the ICT infrastructure as this is a requirement for successful e-government implementation. This can be making sure that the nation's internet backbone and the International Gateway are managed responsibly. Further, the government should encourage developing of fiber-optic network for efficient broadband communication, reducing the rates for internet access through ISPs. (Alshehri and Drew, 2010). The government should create an enabling environment for the adoption of ICT in everyday lives of its citizens as this is the start-point of e-government.

However, concerns about poor service delivery continue to be voiced unabated. Gronlund et al. (2005) point out that for e-government projects to be effective, focus must be placed on social and economic contexts. Government need to ensure that the ethos of e-government are infused into poverty alleviation and service delivery programmes.

Low literacy rate is a serious impediment for the adoption of E-Government in Africa as it hinders the accessibility of G2C services. For citizens to fully enjoy the benefits of E-Government, they should not only know how to read and write but also possess basic ICT literacy (ITU, 2006)



The recommendations, which were released in 2004, espouse the promotion of ICT usage; enhancement of connectivity, especially among the rural poor; encouraging public-private partnerships; developing a nation-wide backbone; enhancing universal access and rural telephone networks; human resource development (university education, research and technology support networks, introduction of ICTs at secondary school level); and regulation (liberalizing ICT sectors) (Economic Commission for Africa, 2005).

### Conclusion

It goes without saying that e-government is a very good practice if governments were to achieve excellence in as far as interacting with different stakeholders for feedback to create checks and a balance in their government strategy is concerned.

Countries like Botswana which are still developing should turn to e-government for economic diversification and service delivery. The benefits of e-government go beyond cost-quality ration, if adopted well it can transform the government.

E-Government is a channel through which the ruling class interacts with its citizens (eCitizens and eServices), improves public service delivery and processes (eAdministration), and builds external interactions (eSociety). This creates a win-win relationship where the work of the government is made easier by providing a public service at the disposal of a citizen (Alshehri and Drew, 2010).

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